WEB BASED VTA MANAGEMENT SYSTEM

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Declaration

I certify that this dissertation does not incorporate, without acknowledgement, any material previously submitted for a degree or diploma in any university and to the best of my knowledge and belief, it does not contain any material previously published or written by another person or myself except where due reference is made in the text. I also hereby give consent for my dissertation, if accepted, to be made available for photocopying and for interlibrary loans, and for the title and abstract to be made available to outside organizations.

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Abstract

Vocational Training Authority was established under purview of the ministry of skill development and vocational training. VTA is operating as the largest training center network of vocational training. There are around 16 Vocational Training Centers in the Batticaloa district.

VTA currently used a manual system by using Microsoft excel. The workload of the MIS officer was huge when handle the information. Also all of the records are kept in a log book manually then entered again in MS-Excel in the computer. VTA decided to strength their presence in web to communicate people through web.

Solution of the problem should be a web based solution. HTML is used for user interface design, CSS and Bootstrap framework is used for the decoration of the website, JavaScript is used for the dynamic and validation purpose and PHP5 is used for the object oriented programming and MySQL server database is selected as the database of the system.

According to the present Software Engineering theories and by studying the problem domain, the Rational Unified Process (RUP) was identified as the most suitable development methodology based on its flexible developing theory and related advantages in comparison to other software methodologies. The Projects covers admin module, content management system module, student registration module, course management module, result management module and centers management tool.

After development process, the web based system which was tested by many users of the Vocational Training Authority finally it was successfully handed over to the client to enhance their manual system process.

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List of Acronyms

AJAX	- Asynchronous JavaScript and XML
CSS	- Cascading Style Sheet
DBMS	- Database Management System
HTML	- Hypertext Markup Language
JSON	- JavaScript Object Notation
MIS	- Management ID of Student (unique value to identify student)
NIC	- National Identify Card
OJT	- On the Job Training
PHP	- Hypertext Pre-processor
RUP	- Rational Unified Process
SQL	- Structured Query Language
UML	- Unified Modeling Language
VTA	- Vocational Training Authority
XAMPP	- Windows/Linux Apache MySQL PHP Perl

Chapter 1: Introduction

1.1 Introduction

VTA management system is a software solution for the Vocational Training Authority for managing information such as student information, branches information, course details and student information.

VTA management system also includes a content management system to maintain a website for the Vocational Training Authority.

1.2 Introduction to Client

The VTA was established with the intent of skills for employment Manpower Division-the training arm of Labor Department that was running Technical and Vocational Education and training programs in many parts of Sri Lanka, Was converted to the newly constitute Vocational Training Authority making vocational training more accessible to rural youth and depressed segments of the country.

The key intention of the establishing the VTA was to reach the rural mass of the country which was 72% of the total population and make them to be skillful to be able to find employment locally and internationally. The VTA's mission is to meet the Vocational training needs of Sri Lankans providing learning opportunities through excellent pre-employment training throughout the country. VTA is a statutory body, governed by a Chairman and Board of Directors representing various ministries assigned specific subjects areas, i.e., youth affairs, education, industrial development, finance and labor including the corporate sector.

1.3 Motivation of the project

The reason I have chosen for this project is there is no good student information system in the VTA. Furthermore, there are more and more sub institutes under the VTA. The maintenance and management of these all institutes information and results is almost a tiring process in VTA nowadays. Therefore an effective system for the management of student academic information such as their details and results is required.

The workload of the data entry operator is huge when handling details and results in the traditional way; first the details and results of all the Institutions are recorded manually in a log book and then entered again in a desktop application. And also VTA seeks a website to strengthen its web presence, to improve its capacity and to improve its ability to communicate with current and prospective visitors and students.

This web based application can be used to make process easier, secure and less error prone. Reduction of manual work and more efficient information management will be achieved through this system, and primarily aimed at mobile handsets and other portable devices. That is why I want to make a good web application system for this VTA.

1.4 Scope of the Project

Web based VTA Management system will include the following modules

- CMS for the Website

  This Module will supports creating, editing, reviewing, publishing, and adding web content to the system. Additionally, Integrated Image-processing capability to permit more efficient and effective web publishing will improve the interface of the system

- User Management

  Using this Module management can be able to register admin and grand rights to enroll the system. Admin can modify data according to the privileges.

  (Ex: Level 1 – Center Admin, Level 2 – Super-Admin)

- Centers Management

  Super admin Creates and manages vocational training centers in the district. Each centers have different types of courses.

- Course Management

  Super admin efficiently manage courses, subject and sessions for the vocational institutes.

- New Student Application Management

  Visitors can apply for a course from any centers through the web portal every application will gone to relevant Center Admin. Super admin can monitor all of the applications

- Students Registrations Management

  Center Admin can register students for their relevant center. Every center's registered student details can monitor by Super Admin

- Students Results Management

  With Assignment, Exams and other sets of testing students are perfectly handled by the system. But taking exams is not the end as students need to know the results. It offers complete control over the result processing of the student through the result management module.

- Students Industrial Training Management

  Industrial Training management module is developed to manage the industrial training process in VTA centers. During industrial training process, students will be placed at selected organizations for a predetermined duration of time. The system is developed to manage and track all of the student's industrial training process

- Reports Management

  Through this facility it is super easy for the management to track their activity and helps to decision making process.

- Notification Management

  An email notification will notify to admin's email when he forgets the password and to request to reset the password.

1.5 Structure of the Dissertation

Dissertation of these projects consists five main chapters to design and develop the VTA Management System. Following is the outline of those chapters.

1.5.1 Introduction

This chapter of the dissertation describes client and problem domain. Scope and Objective also discussed in the phase.

1.5.2 Analysis

This chapter explains the ways used to collect requirement for the system, which have been gathered and documented. Collected information trimmed out from the data that collected to functional and non-functional requirements of the system.

1.5.3 Design

This chapter contains the initial design of the system assured diagrams according to the system design such as use case diagram, class diagram and other diagrams. This design part heavily plays a role on implementation of the system. User interface are mainly described in this chapter.

1.5.4 Implementation

This chapter engaged with the development of the designed solution according to the requirement of client. Implementation would be consider with the programming language.

1.5.5 Evaluation

This chapter mainly focused on ensuring the proposed system without bugs and errors.

1.5.6 Conclusion

This last chapter of the dissertation It contains future development of the system using feedback.

Chapter 2: Analysis

2.1 Introduction

System analysis is the one of the main phase in a software development. Requirement analysis is very important to the success of the project. It took lots of time to identify the all functional and non-functional requirements. It involves regular connection with the client to identify their requirements. It's also including overall concept of the current system.

2.2 Requirement analysis and fact finding techniques

Requirement of the projects was collected in mainly by using interviews and observation.

2.2.1 Interview

The administrator and staffs were interviewed regularly to identify their requirements. The interviews were held among staffs individually and group meetings. Feedbacks and questions also gathered during these interviews.

2.2.2 Observation

VTA work environment was monitored for 4 months to understand their manual system approach over the training centers. Weekly twice visited to the district center and monitored the entire system of Vocational Training Authority

2.3 Current Systems and Process

The use case diagram of current system process is depicted by figure 2.1

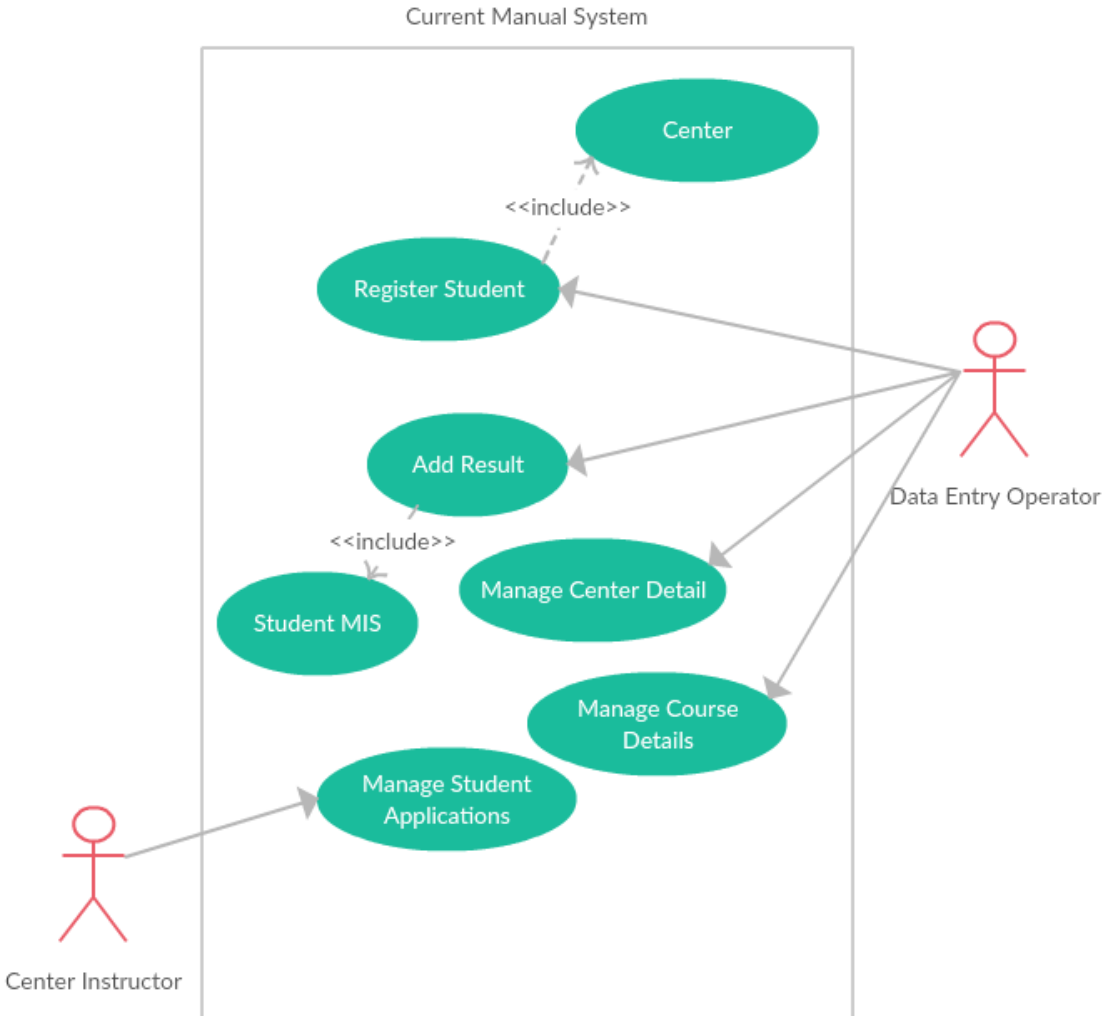

Figure 2. 1 Current Manual System

All of the data records are maintain in excel spreadsheet by only one person who is appointed to maintain information system for the district VTA center. Each of Center's instructor have to collect student application and send it to the district VTA center data entry operator, after that Data entry operator register each student.

2.3.1 Drawbacks of the Current System

- Hard to Maintain Student Registration information due to manual file process.
- Difficult to generate reports as required by the current manual system.
- Misplacing the manual files and documents cause wastage if time and resource
- wastage of VTA funds on stationery

2.4 Functional Requirements

A functional requirement document defines the functionality of a system or one of its subsystems. It also depends upon the type of software, expected users and the type of system where the software is used.

Functional user requirements may be high-level statements of what the system should do but functional system requirements should also describe clearly about the system services in detail. **[WWW1]**

2.4.1 CMS for the website Module

This CMS is used to manage the VTA easily and used to update their website easily.

- Can be used to add, delete, and update posts.
- Can be used to add, delete, and update contents of web site.

2.4.2 User Management module

Using this Module management can be able to register admin and grand rights to enroll the system. Admin can modify data according to the privileges. (Ex: Level 1 – Center Admin, Level 2 – Super-Admin)

2.4.3 Center Management module

- Super-Admin Can Add, delete, Edit Center Details.
- Can able to see & generate details of the center details.

2.4.4 Course Management module

- Super-Admin Can Add, delete, Edit Course Details.
- Can able to see & generate details of the Course details.

2.4.5 New Student Application Management module

- Students can apply for any of the courses in any centers using the website of VTA.
- Email notification should send to the Student after applied for a course.
- Center-Admin Can Approve or Reject the Student's application for their Centers.
- Super-Admin Can Approve or Reject the Student's application for any Center.

2.4.6 Student Registration Management module

- Center Admin can Add, Edit, Delete Student registration for his relevant Center.
- Super-Admin can Add, Edit, Delete Student registration for his relevant Center.
- Can able to see & generate details of the student details.

2.4.7 Student Result Management module

- Center Admin can Add, Edit Student Result for his relevant Center.
- Any of student can see his/her result through VTA website

2.4.8 Old Student Tracking Management module

- Manage old Student Details to track their current position and details.

2.4.9 Reports Management module

- Management should have facility generate all kind of information as reports.

2.5 Non-Functional Requirements

In systems engineering and requirements engineering, a non-functional requirement (NFR) is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviors. They are contrasted with functional requirements that define specific behavior or functions. **[www2]**

2.5.1 Fast loading

The biggest single reason visitors do not stay at a Website is that it takes too long to load - that is the time it takes for the page to appear on the computer screen. The site needs to be designed around the premise of 'loading' as quickly as possible.

2.5.2 fully responsive

Responsive Web Design makes your web page look good on all devices (desktops, tablets, and phones).Responsive Web Design is about using CSS and HTML to resize, hide, shrink, enlarge, or move the content to make it look good on any screen

2.5.3 Browser Compatibility

The site needs to be compatible for viewing across a wide range of user platforms and browser software. We will test the site with many different browsers to ensure that the vast majority of visitors can see the site quickly and easily. **[www3]**

2.5.4 Information Structure

A clear, crisp view of the information on the site is user friendly for the users. At the early stage, we would anticipate the use of database to store articles and information of interest.

To provide major benefit to the VTA, the site should have significant amount of information available to the user. This information on the site should able to be quickly and easily update by admin

2.6 Existing Similar System

When Considering VTA management System for VTA. There is no open source or proprietary software solution in web. This VTA Management system includes CMS, Center, Course, Student, and Results Management System.

Standalone content management system are available such as Word press, Blogger to manage posts and news.

There Standalone Institute management system available such as IFNOSS **(www 4)** which includes center management, course management, student management also have a feature of generate monthly reports

The interface of IFNOSS Institute management system is depicted by Figure 2.2

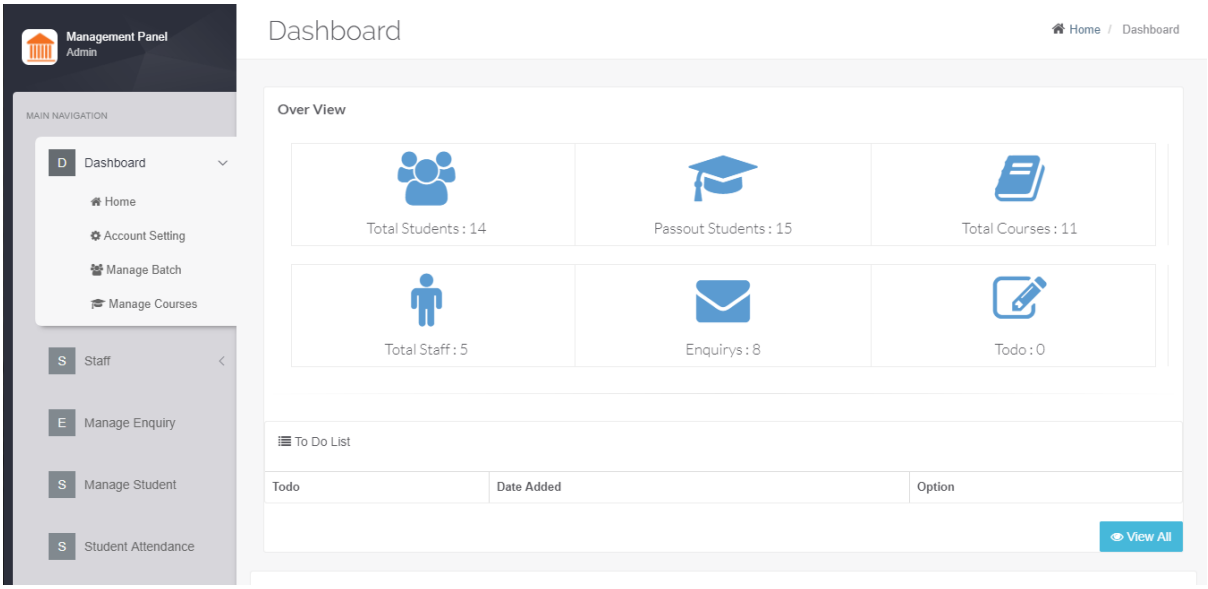

Figure 2. 2 IFNOSS Institute Management System

By considering both types of systems there is no system that combined CMS and Institute Management System. So that the best option to make bespoke software to match with the client requirement

Chapter 3: Design

3.1 Introduction

System design is the process of defining the architecture, modules, interfaces, and data for a system to satisfy specified requirements. Systems design could be seen as the application of systems theory to product development. **[www5]**

3.2 System Development Life Cycle

The system development life cycle is a process that describes the activities performed at each stage of a software development project. It consists of a detailed plan describing how to plan, design, implement and test the system. The objective of the SDLC is producing the high quality software. There are various SDLC methodologies/models such as waterfall, Agile, incremental etc.

3.3 Methodology of the proposed system

RUP (Rational Unified process) has been selected for the proposed system. Reasons of selecting RUP are it is an iterative software development process framework and it supports object oriented development. Initially client does not have a clear idea about system requirements, so requirements may likely to be changed.

System has been divided into modules such as Admin module, Course Module and etc. Each module has developed incrementally and iteratively. Therefore RUP is the most appropriate SDLC (Software Development Life Cycle) methodology. Inception, Elaboration, Construction and Transition are the main phases of the RUP lifecycle. Brief description is given below. [www6]

This method helps to develop the proposed system into incrementally and iteratively as it is well modularized. It has 4 phases. It is depicted by Figure 3.1

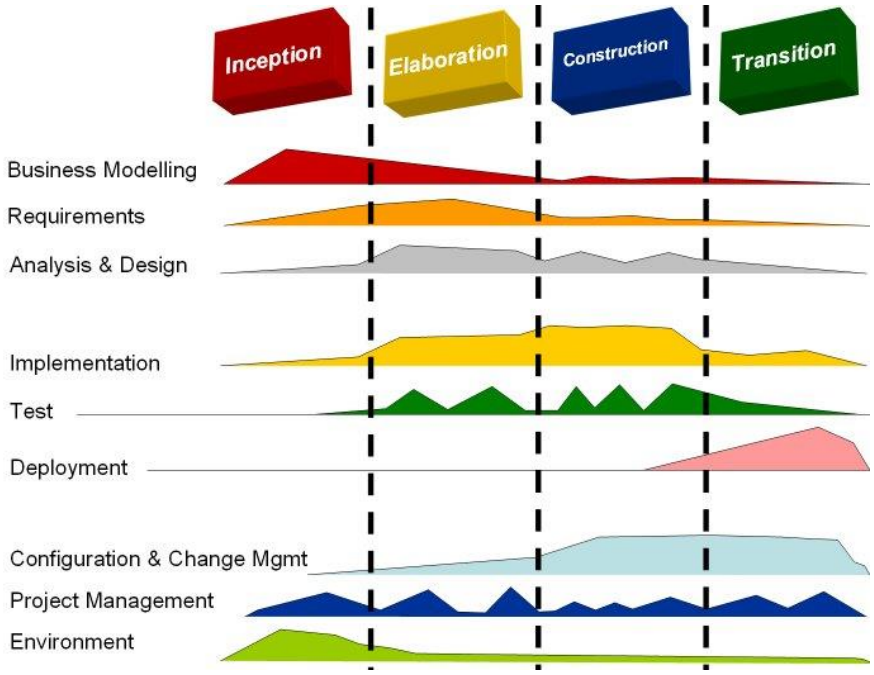

Figure 3. 1 RUP Methodology

- **Inception Phase:**
  Identify the scope of the project and its business case. Cost, Time and risk are analyzed in this stage.

- **Elaboration Phase:**
  Problem domain analysis is made and defines the architectural foundation of the system

- **Construction Phase:**
  The primary objective is to build the software system. In this phase, it focuses on the development of components and other features of the system. Coding is to be done in this stage.

- **Transition Phase**
  Deliver the system to Users. The activities of this phase include end user training and beta testing the system to validate it against the end users' expectations.

3.4 Object oriented Designing

Object-Oriented Design is a software development approach to design and implement software system as a collection of interacting state full objects with specified structure and behavior.

UML is the broadly used designing tool to implement objects oriented designing.

3.4.1 High Level Use Case Diagram for the VTA Management System

The high level of use case diagram is depicted by figure 3.2 Illustrates the simplified section of activities carried out by all the people who are engaged to all illustrated tasks with the proposed system.

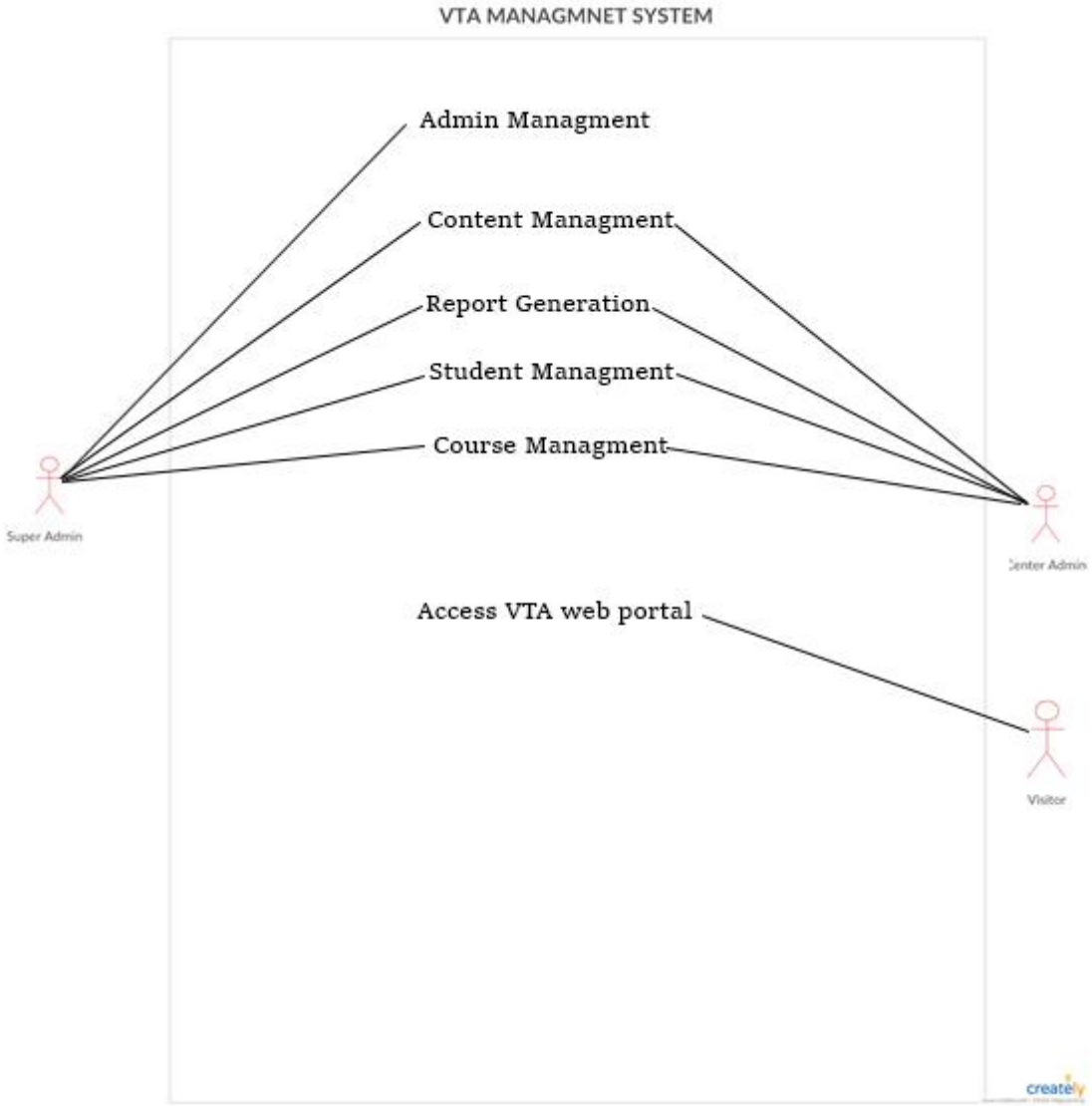

Figure 3. 2 High Level Use Case Diagram

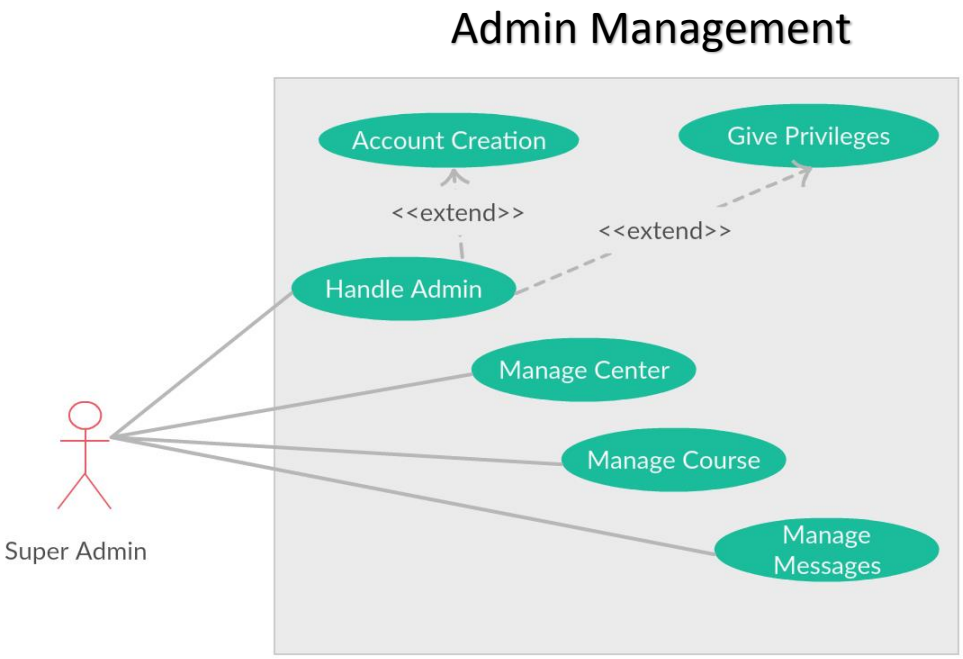

Figure 3. 3 Admin module Use Case Diagram

This diagram Figure 3.3 illustrates that an Administrator oriented tasks, designed and developed with programming solutions. A super admin can manage vocational training center and courses.

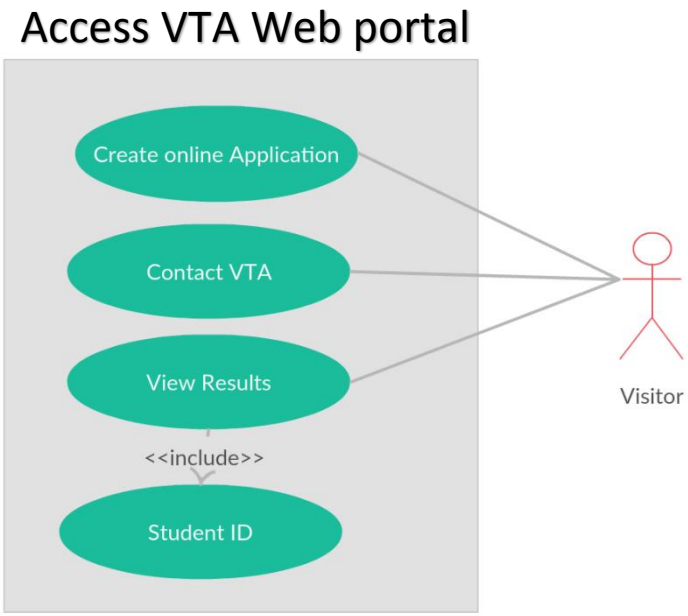

Figure 3. 4 Visitor Use Case Diagram

This diagram Figure 3.4 illustrates tasks which have been undertaken by visitors, which means visitors can apply for the courses. And also visitors can view student results by entering the student ID.

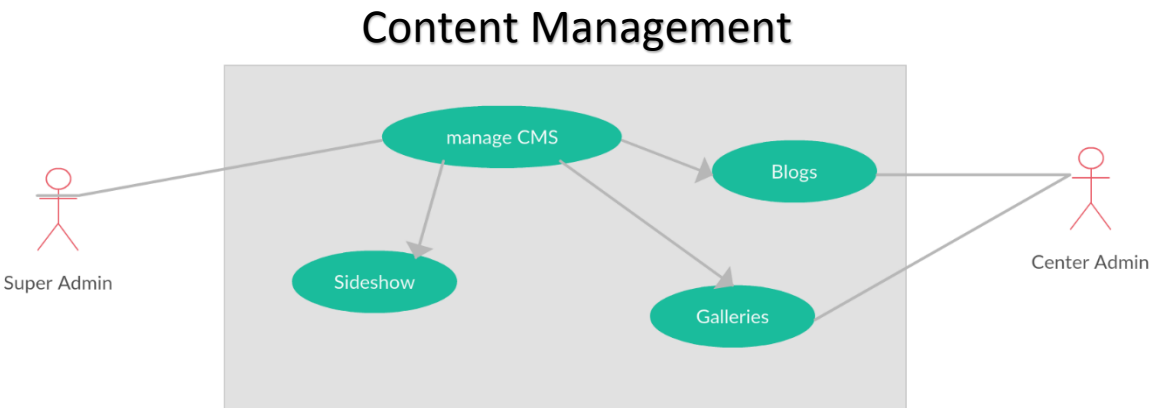

Figure 3. 5 CMS module Use Case Diagram

This diagram Figure 3.5 illustrates all the tasks performed by super admin and center admin, the center admin has some limited access to the proposed system, a center admin can manage posts and galleries but super admin can manage all the contents of Content Management System.

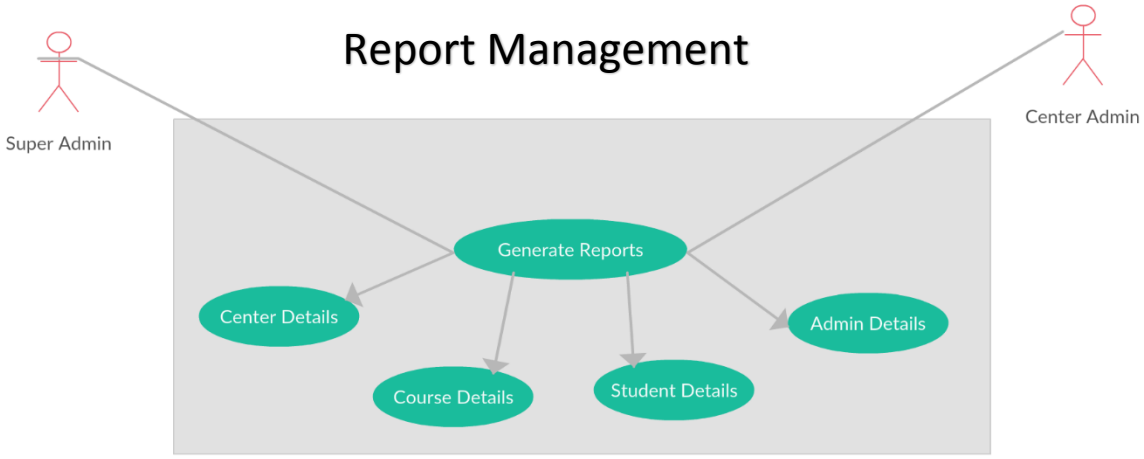

Figure 3. 6 Reports Use Case Module

This diagram Figure 3.6 illustrates the reports generating modules of the system both super admin and center admin can generate reports of the system.

3.5 Database Design

This process used to design a model of database. There are some important rules to design the database table such as break your data in to logical pieces, make life, Watch for partial dependencies, do not be hard on avoiding redundancy, if performance is the key **[www7]**

The database design of the system is depicted by figure 3.7

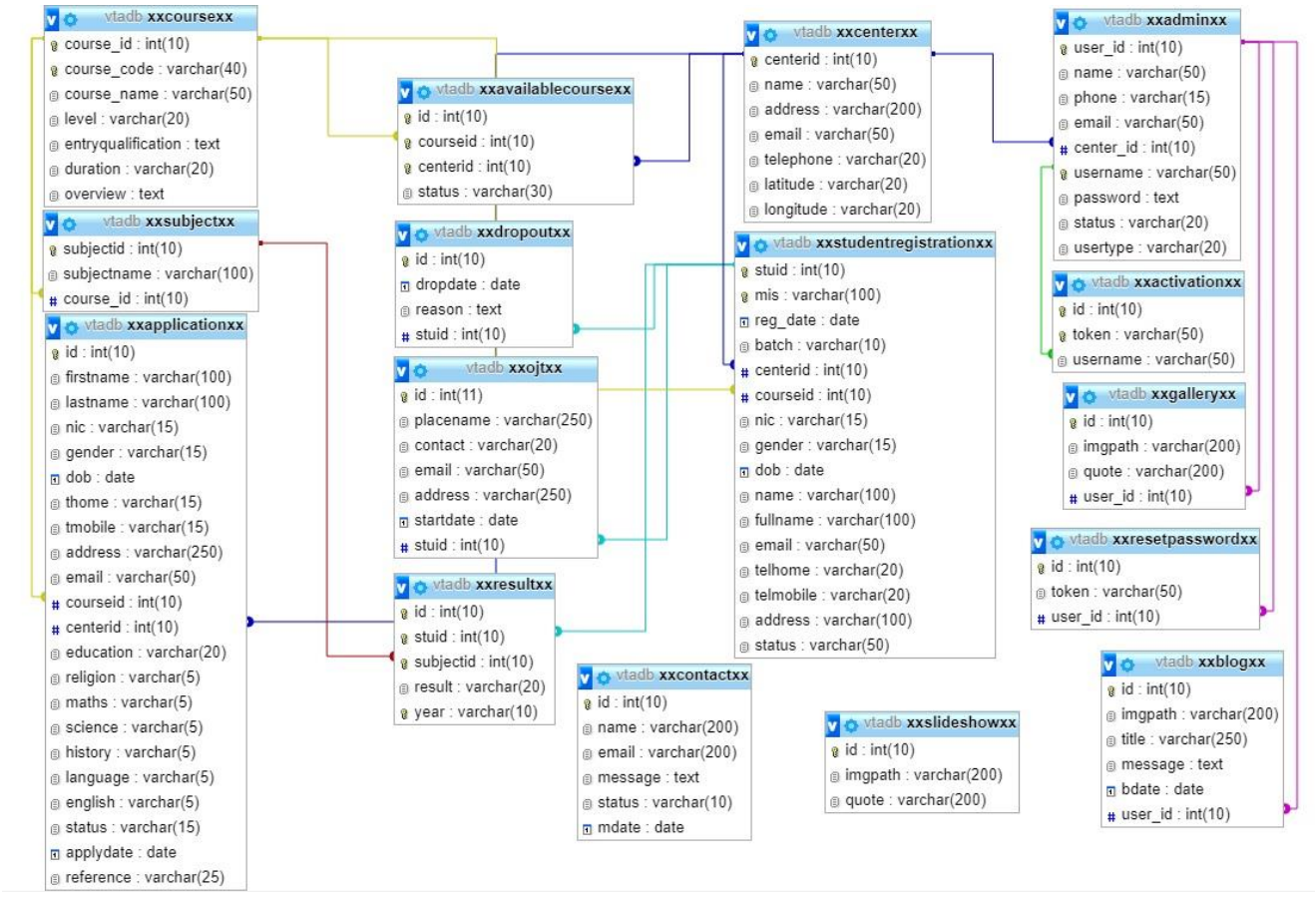

Figure 3. 7 Database Design

3.6 Interface Design

Interface design plays major part of the software designing process. Without having a user friendly interface it will hard to interact between users and system. There are several action taken to ensure to deliver a good user friendly interface.

- Responsive interface design were used to ensure the system is highly compatible with every devices (laptops, tabs, desktops, mobiles,)
- Meaning full names and texts were used for forms, labels and buttons in order to increase system effectiveness
- Eye friendly colors were used for this system (e.g. light red, light green)
- Wizard forms were used for easy navigation displayed as figure 3.8

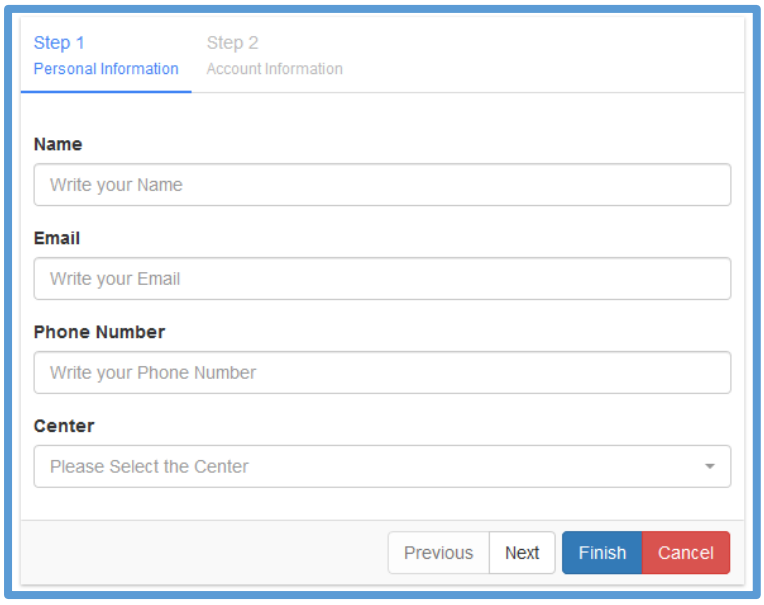

Figure 3. 8 Form Wizard

- Before saving, updating, deleting record, system should take permission from the user displayed as figure 3.9

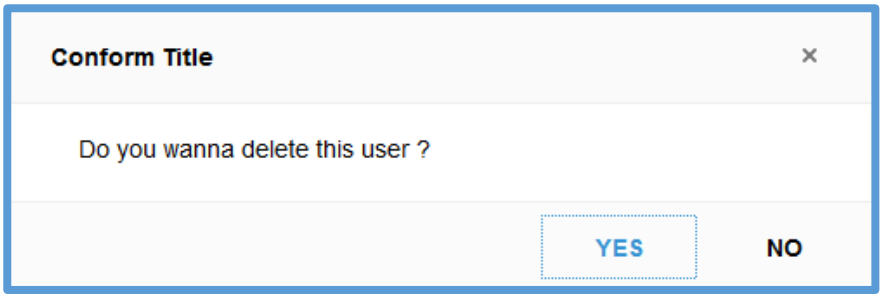

Figure 3. 9 Conform Message

- System has provided meaningful success or error messages displayed as figure 3.10 and figure 3.11

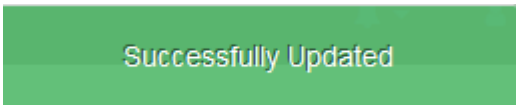

Figure 3. 11 Success Message

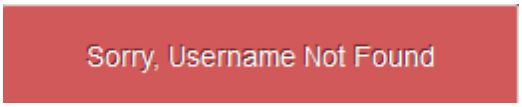

Figure 3. 10 Error Message

- System has used live search combo box to search items easily and maximize the user friendliness of the system. displayed as figure 3.12

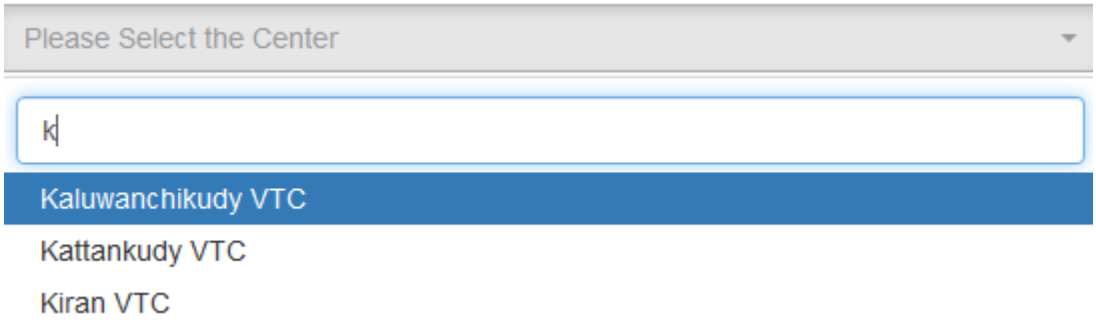

Figure 3. 12 Live Search

3.6.1 Main Interface

Following figure 3.13 illustrate the main interfaces of the system. This one is for the visitors they can gone through the pages and get information about VTA

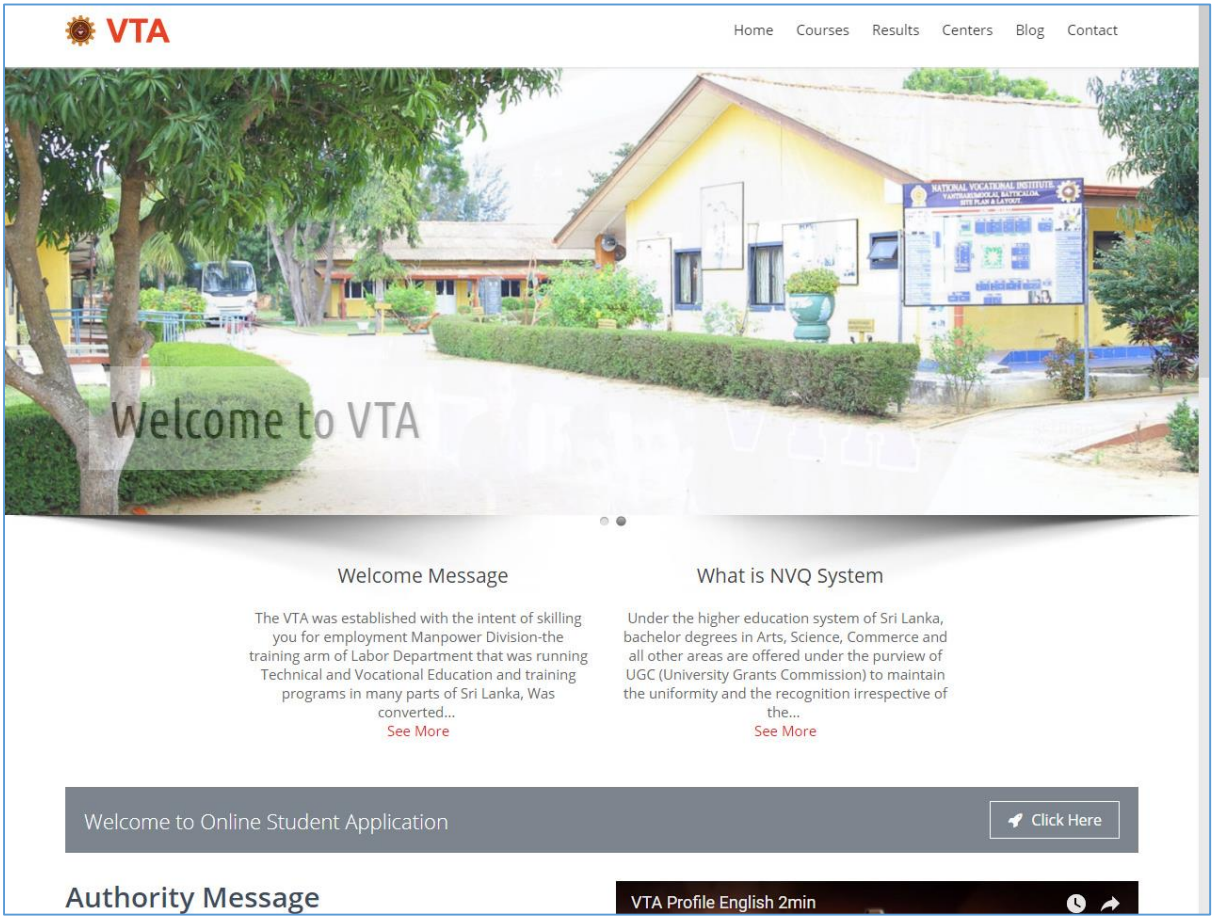

Figure 3. 13 Main Interface

3.6.2 Student Online Application interface

Following figure 3.14 illustrate the student course online application in the web. Any of student can apply for any of courses provided by VTA in any Centers.

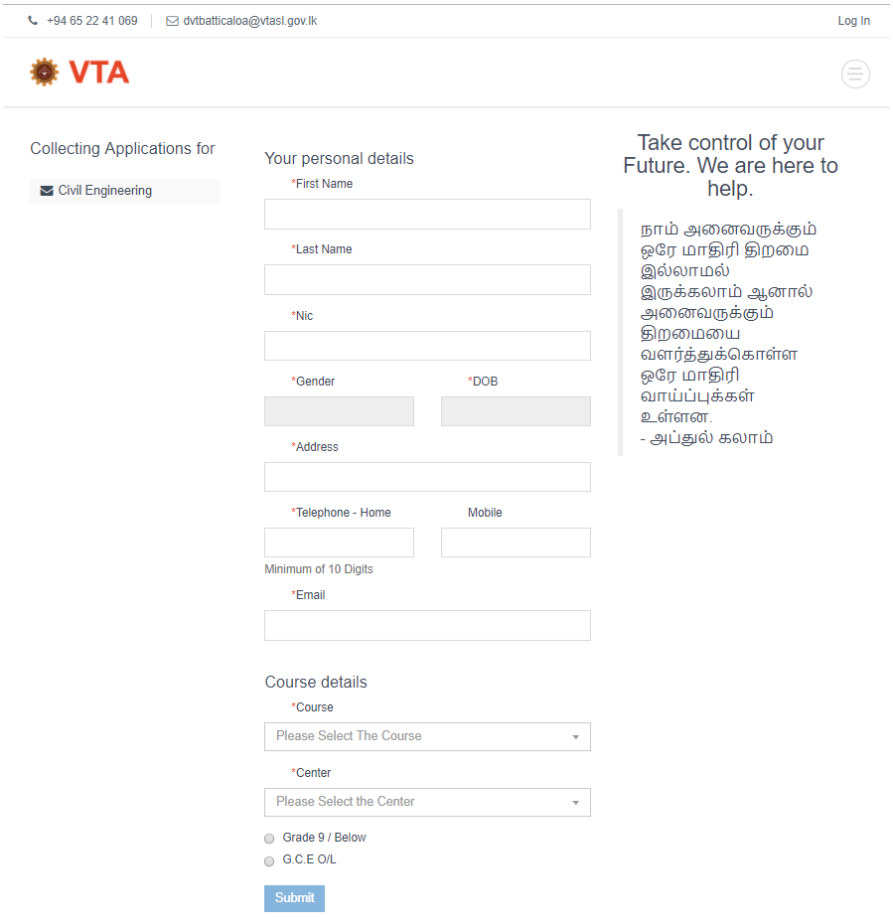

Figure 3. 14 Student online application

3.6.3 Student Results Page

Following figure 3.15 illustrate the student results page in the web. Any of student can find his results by entering his MIS number

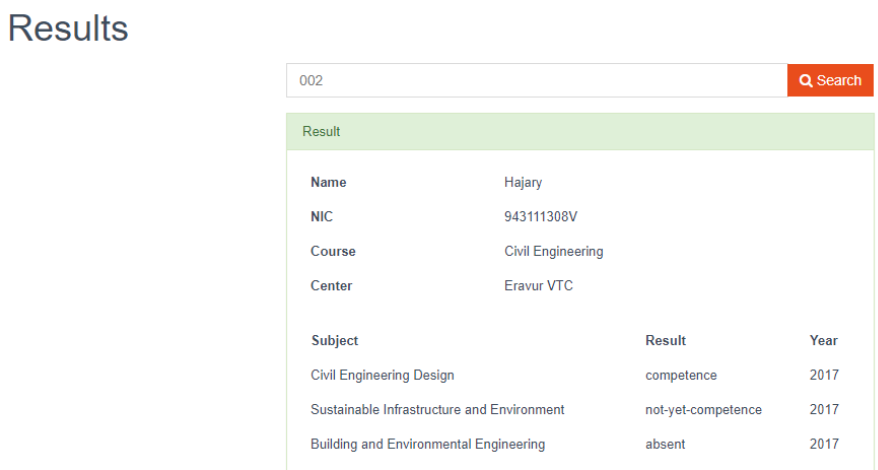

Figure 3. 15 student results

3.6.4 Blog Page

Following figure 3.16 illustrate the Blog News, Visitors can view news of VTA. These News are added by Admin Panel

Figure 3. 16 Blog Page

3.6.5 Login Interface

Following figure 3.17 illustrates the login interface for the system for super-admin as well as center-admin they have just to enter their user name and password system will automatically identify their administrative level and redirect to their respective page.

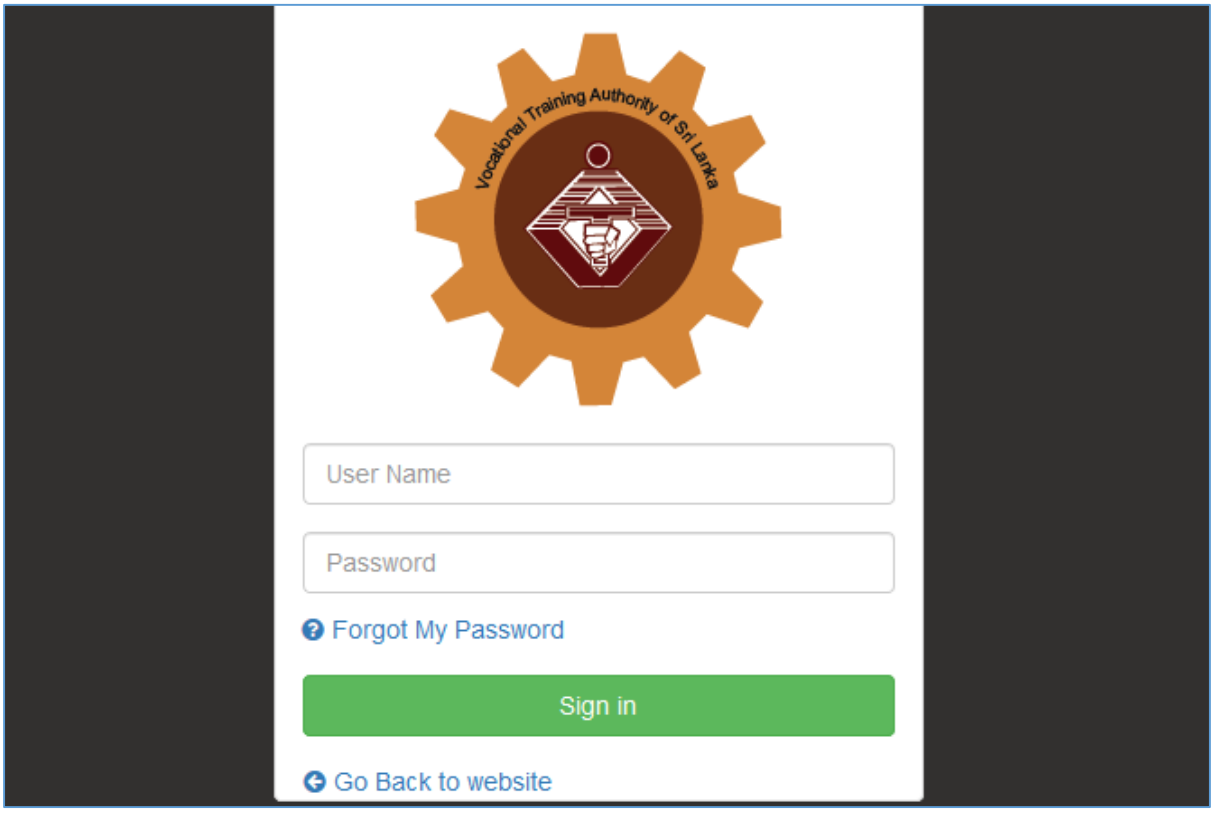

Figure 3. 17 Login Interface

3.6.6 Super-Admin interface

Super Admin contain all option than ever any center-admin has super-admin could only manage entire system. Super-admin interface displayed by figure 3.18.

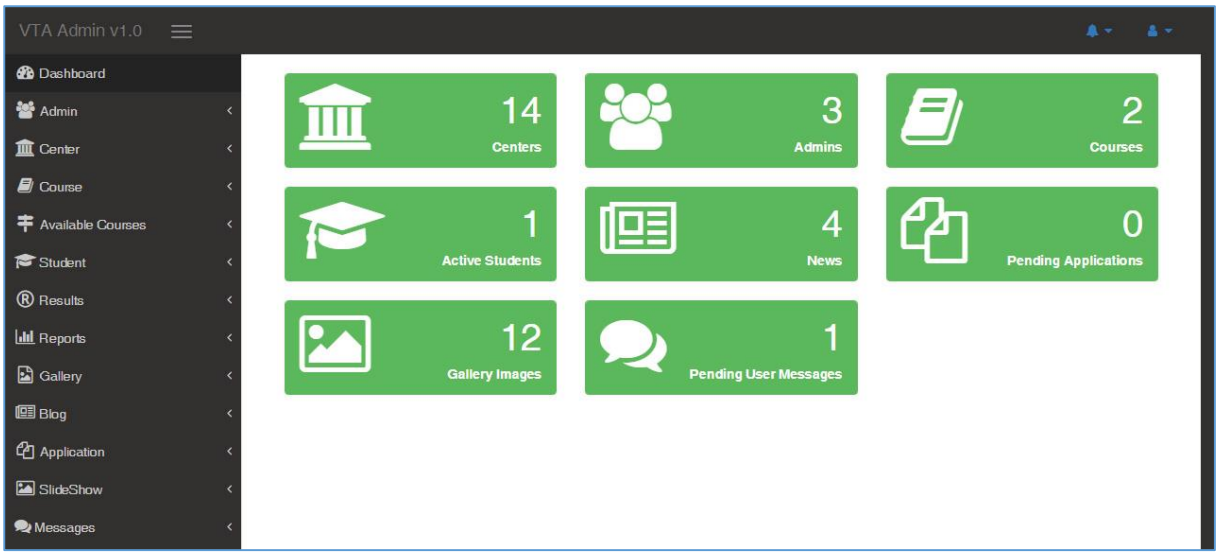

Figure 3. 18 Super-Admin Interface

3.6.7 Center-Admin interface

Center-Admin Can only manage their center details like students or their student results. Center-admin interface displayed by figure 3.19

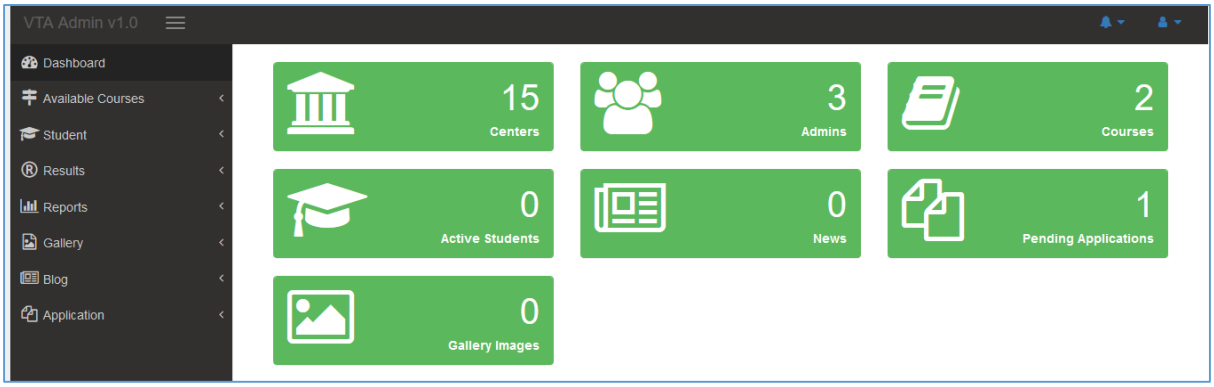

Figure 3. 19 Center Admin Interface

3.6.8 Student Registration Interface

Following Figures show the student registration interface a center admin can only register a student from his/her center but a super-admin can register a student any center. Student registration interface displayed by figure 3.20

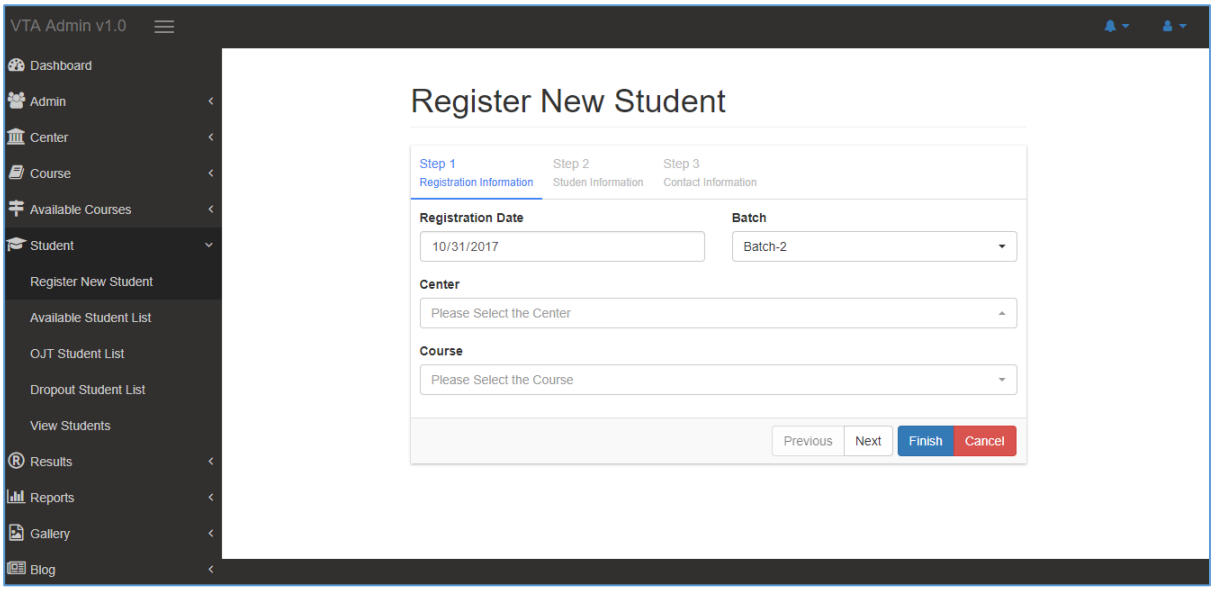

Figure 3. 20 Student Registration Interface

3.6.9 Mange Student Interface

In this interface admin can do many works like sort outing the student list edit a student delete a student or delete multiple students or dropout a student. Manage student interface displayed by figure 3.21

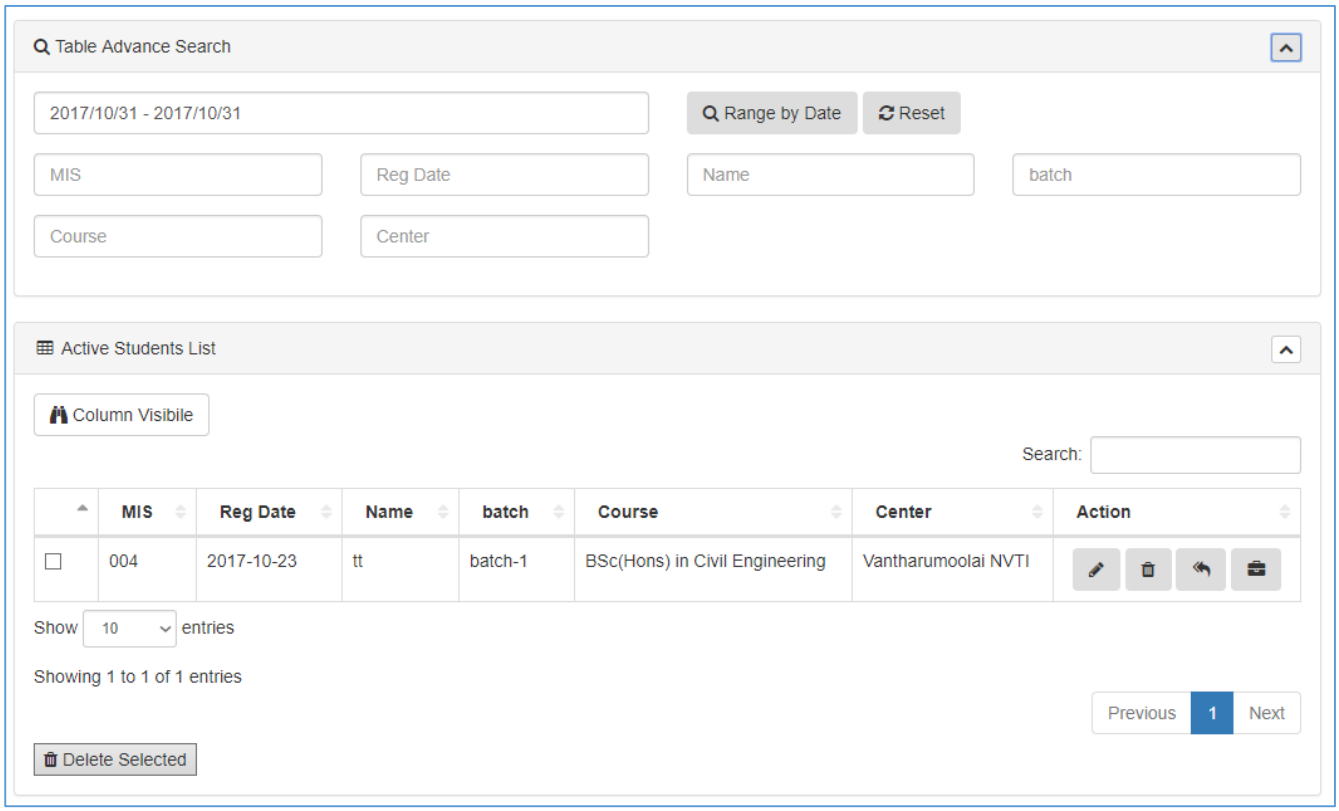

Figure 3. 21 Manage Student Interface

3.6.10 Add Blog Interface

Any of admin can create news for the website it's works like a CMS any visitor can view those news in the VTA website. It use real time WISWYG editor to easily customize the news. Add blog interface displayed by figure 3.22

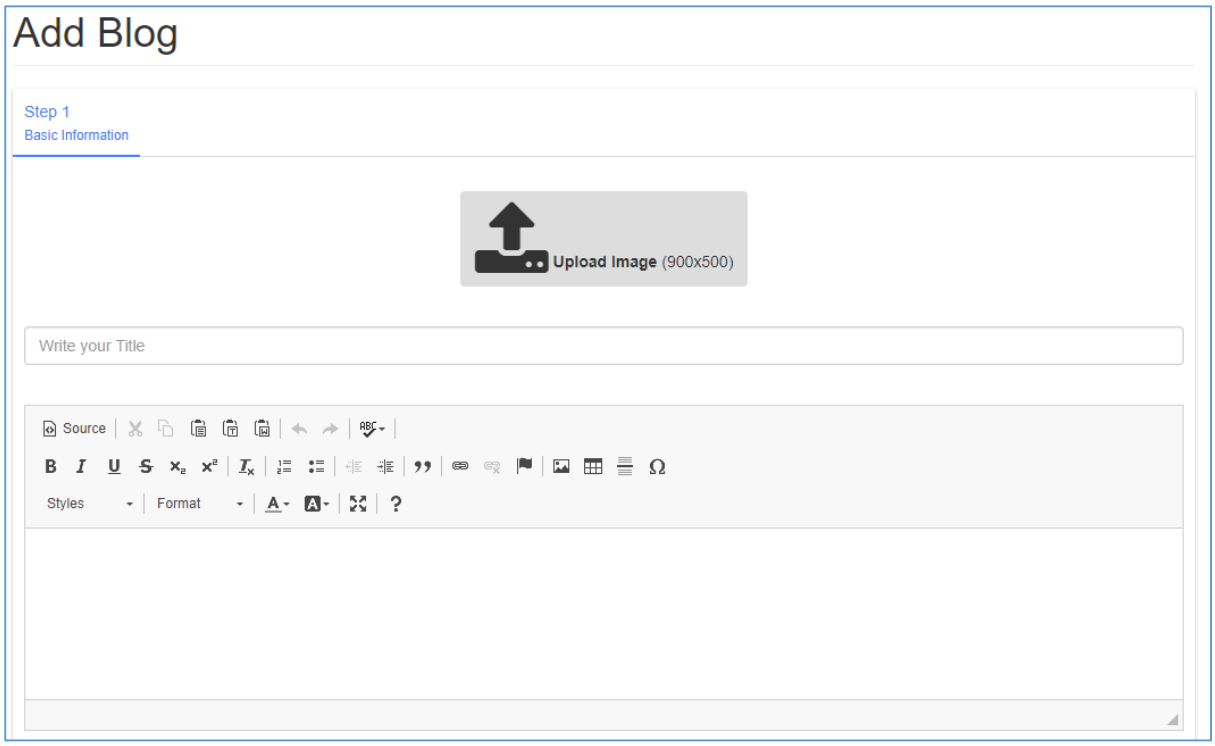

Figure 3. 22 Add Blog Interface

3.6.11 Graphs

In the admin panel, Graphs were used to represent data simply. Graphs interface displayed by figure 3.23

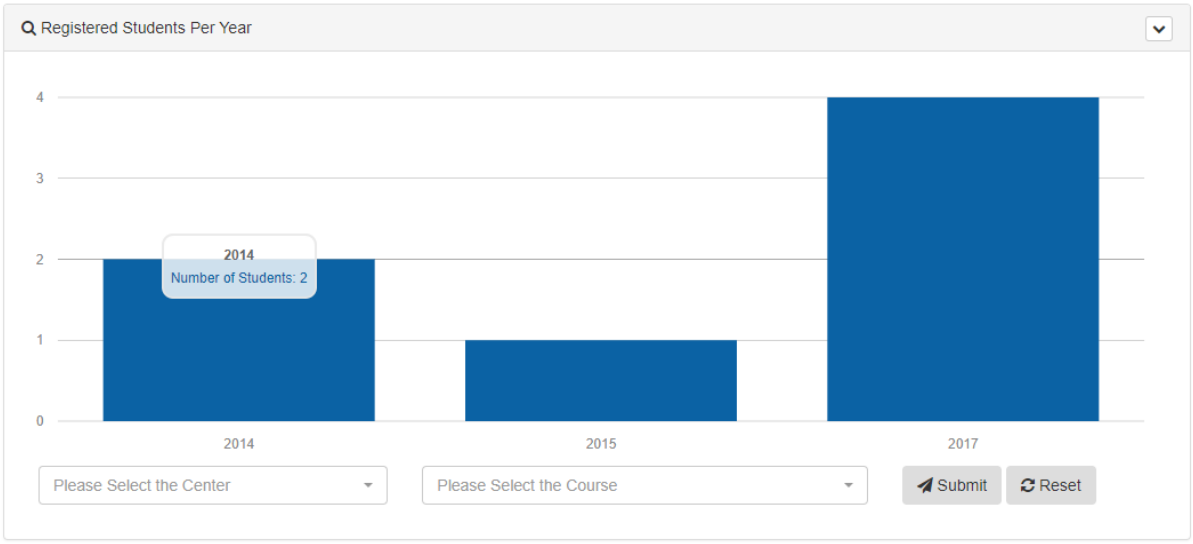

Figure 3. 23 Graphs Interface

Chapter 4: Implementation

4.1 Introduction

This Chapter mainly discuss about the implementation environment, the tools and techniques that used to implement the system. The system has been developed in modularized way and finally integrated all the modules as a complete system.

4.2 Implementation Environment

Following Table 4.1 illustrates the implementation requirements.

Hardware Environment	Software Environment
Intel® Core™ i7-5500U CPU @ 2.40Ghz	Windows 10 Pro
8GB RAM	PHP 7.1.10
1TB Hard Disk	Apache 2.4.28
	phpMyAdmin 4.7.4

Table 4. 1 Implementation Requirements

4.3 System Developed Tools and Technologies

- Adobe Photoshop CC & Adobe Illustrator CC
  Used for editing and modifying images and also used to create logos

- Creatly
  Used for draw diagrams easily in online

- Sublime Text 3
  Used for coding the entire system components

- PHP
  It was the main development language used to build the system

- MySQL
  It was used to handle the database

- HTML
  It was the base interface of the system

- Bootstrap Framework
  This framework used for the responsive technology which can view the system in different types of devices

- JavaScript
  Used to validate all client side validations

- CSS
  Used to make attractive and user-friendly interfaces

- JSON
  It's a syntax for storing and exchanging text information.

- JQuery
  It's a JavaScript library and used reusable component

4.4 Major Code Segments

The main code segments in the system is listed below

- **Database Connection**

  Every system has to connect database in order to add, update and delete values in system

```php
<?php

// Initiate Connection
$con=mysqli_connect('localhost','root','','vtadb');

// Validate Connection
if (!$con) {
    echo "Failed to Connect".mysqli_connect_error();
}


?>
```

Figure 4. 1 Database Connection

- **User Login Validation**

```php
// if the session not yet started Start Session
if(empty($_SESSION)) session_start();
include('../admin/pages/connection.php');
include ('../admin/pages/encry.php');
$uname=$_POST['inputuserName'];
$password=$_POST['inputPassword'];

// Compare User Name With Data Base
$sql="SELECT user_id,center_id,username,password,status,usertype
FROM xxadminxx
WHERE username='$uname'";
$query=mysqli_query($con,$sql);
while ($row=mysqli_fetch_array($query)) {
// If there a record only one record will shown
// Because user_id is unique
    $dbpassword=$row[3];
    // Password is Encrpted in  DB so, have to decrypt it,
    $result=mc_decrypt($dbpassword, ENCRYPTION_KEY);
    // Compare the Passwords
    if ($password==$result) {

        // IF Password is OKAY Check For Status
        if ($row[4]=="active") {
            $_SESSION['userid']=$row[0];
            $_SESSION['usertype']=$row[5];
            $_SESSION['centerid']=$row[1];
            echo"success";
        }
        else if($row[4]=="pending"){
            echo"pending";
        }
        else if($row[4]=="block"){
            echo"block";
        }
```

Figure 4. 2 User Login Validation

- **Admin Panel Pages validation (If user not Login redirect to login)**

```php
<?php
// if the session not yet started Start Session
if(empty($_SESSION)) session_start();

if(!isset($_SESSION['userid']))
{ //if not yet logged in
   header('Location: ../../../login/');// send to login page
   exit;
}
?>
```

Figure 4. 3 User Login Validation

- **Create New Center**

```php
<?php
// This if Will work to Prevent Direct URL Access
if ( $_SERVER['REQUEST_METHOD']=='GET' && realpath(__FILE__) == realpath( $_SERVER['
    SCRIPT_FILENAME'] ) ) {
        /*
           Up to you which header to send, some prefer 404 even if
           the files does exist for security
        */
        header( 'HTTP/1.0 403 Forbidden', TRUE, 403 );
        /* choose the appropriate page to redirect users */
        die( header( 'location: /error.php' ) );
}
else{

    // if the session not yet started Start Session
    if(empty($_SESSION)) session_start();

    if(!isset($_SESSION['userid']))
    { //if not yet logged in
      echo "nosession";

    }else{

        // Include Database Connection
        include("../connection.php");
        // Assign Textbox Values to Variable
        $name=$_POST['inputName'];
        $email=$_POST['inputEmail'];
        $mobile=$_POST['inputPhone'];
        $address=$_POST['inputAddress'];
        $latitude=$_POST['inputLatitude'];
        $longitude=$_POST['inputLongitude'];

        $sql="INSERT INTO xxcenterxx (name,address,email,telephone,latitude,longitude)
        values ('$name','$address','$email','$mobile','$latitude','$longitude')";

        // Execute Query
        $result=mysqli_query($con,$sql);

        if ($result)
        {
            echo "success";
        }else{
            echo "fail";
        }

    }

}

?>
```

Figure 4. 4 Create New Center

- **Fill Student Details**

```
<tbody id="fillData">
    <?php
        include("../connection.php");

         // If The User is Super Admin Display All Student else Display admin own Center Students
        if(empty($_SESSION)) session_start();

        if ($_SESSION['usertype']=="Super-Admin") {
           $sql="
            SELECT * FROM xxstudentregistrationxx sr
            INNER JOIN xxcenterxx c ON c.centerid=sr.centerid
            INNER JOIN xxcoursexx co ON co.course_id=sr.courseid";
        }
        else{
            $center=$_SESSION['centerid'];
            $sql="
            SELECT * FROM xxstudentregistrationxx sr
            INNER JOIN xxcenterxx c ON c.centerid=sr.centerid
            INNER JOIN xxcoursexx co ON co.course_id=sr.courseid
            WHERE c.centerid='$center'";
        }




        $result=mysqli_query($con,$sql);
        while ($row=mysqli_fetch_array($result)) {
            $pid=$row[0];
            echo "<tr class='odd gradeX'>";
                echo "<td><input type='checkbox' name='';echo $pid; echo''> </td>";
                echo "<td>".$row[1]."</td>";
                echo "<td>".$row[2]."</td>";
                echo "<td>".$row[9]."</td>";
                echo "<td>".$row[3]."</td>";
                echo "<td>".$row[25]."</td>";
                echo "<td>".$row[7]."</td>";
                echo "<td>".$row[15]."</td>";
                echo "<td>".$row[17]."</td>";
                echo "<td>".$row[8]."</td>";
                echo "<td>".$row[11]."</td>";
                echo "<td>".$row[12]."</td>";
                echo "<td>".$row[13]."</td>";
                echo "<td>".$row[14]."</td>";
                echo "<td>".$row[10]."</td>";
                echo "<td align='center'> <button title='Edit' class='btn' onclick='editThis(this.value)' value='$row[0]'>
                <span class='fa fa-pencil'></span></button> ";
                echo " <button title='delete' class='btn' onclick='delThis(this.value)' value='$row[0]'>
                <span class='fa fa-trash'></button>";
                echo "</td>";
            echo "</tr>";

        }
    ?>
</tbody>
```

Figure 4. 5 Fill Student Details

- **NIC Number to date of birth and gender calculation function**

```
function doCalculate(elm)
{
    var nic = document.getElementById('inputNic').value;
    if (nic.length>=10)
    {
        var gender=""
        var mon =
                {
                    "1": ["01", 31],
                    "2": ["02", 29],
                    "3": ["03", 31],
                    "4": ["04", 30],
                    "5": ["05", 31],
                    "6": ["06", 30],
                    "7": ["07", 31],
                    "8": ["08", 31],
                    "9": ["09", 30],
                    "10": ["10", 31],
                    "11": ["11", 30],
                    "12": ["12", 31]
                };
        // FOR OLD NIC
        if (nic.length == 10)
        {
            year = "19" + nic.substr(0, 2);
            days = parseInt(nic.substr(2, 3));
        }
        // FOR NEW NIC
        else if (nic.length == 12)
        {
            year = nic.substr(0, 4);
            days = parseInt(nic.substr(4, 3));
        }
        if (days > 500)
        {
            gender="F";
            days=days-500;
            $('#inputGender').val(gender);
        }
        else
        {
            gender="M"
            $('#inputGender').val(gender);
        }
        var key;
        for (key in mon)
        {
            if (days > mon[key][1])
            {
                days = days - mon[key][1];
            }
            else
            {
                break;
            }
        }
        if (days < 10)
        {
            days = "0" + days;
        }
        var dob = year + "-" + mon[key][0] + "-" + days;
        $('#inputDob').val(dob);


        return false;
    }
    else
    {
        alertify.error("Please Verify NIC number")
        $('#inputDob').val("");
        $('#inputGender').val("");
    }
}
```

Figure 4. 6 NIC validation

4.5 Re-usable Components

Following re-usable components have been used to implement the system for more attractive and increase the efficiency of the system

- **Used BOOTSTRAP Templates**
    - KEEN THEME web template used for the front end website **[www8]**
    - SB ADMIN 2 web template used for the admin panel **[www9]**
- **Used Third Party Components Used**
    - JQuery smart wizard 4 is a customizable jquery step wizard plugin. it's easy to implement and gives a neat and stylish interface to forms **[www10]**
    - Bootstrap validator is a simple and user friendly form validator plugin for form **[www11]**
    - Bootstrap-select is a Jquery plugin that utilize Bootstrap's dropdown to style and bring additional functionality to standard select elements **[www12]**
    - Alertify is used to gives a stylish alert **[www13]**
    - Date Range Picker is a component for choosing date ranges **[www14]**
    - CKEditor is an open source WYSWYG text editor to bring word processing features **[www15]**
    - Data Tables is a plug-in for the jQuery JavaScript library. It is a highly flexible tool, based upon the foundations of progressive enhancement, and will add advanced interaction controls to any HTML table. **[www16]**
    - Google map JavaScript API used for the custom map for the site using styled maps **[www17]**

- Facebook Social plugins were used to share and like the posts in website **[www18]**

- Morris chart he public API is terribly simple to use for Graphs **[www19]**

- wow slider was used to represent slideshow **[www20]**

- **Used Re-usable CSS codes**

  - used a CSS code for hovering effect in website **[www21]**

- **Used Re-usable PHP codes**

  - Highly secure data encryption is used to encrypt and store passwords in database **[www22]**

  - a PHP code used to prevent direct access to a PHP file while working with Ajax **[www23]**

Chapter 5: Evaluation

5.1 Introduction

"Evaluation is a systematic determination of a subject's merit, worth and significance, using criteria governed by a set of standards. It can assist an organization, program, project or any other intervention or initiative to assess any aim, realizable concept/proposal, or any alternative, to help in decision-making; or to ascertain the degree of achievement or value in regard to the aim and objectives and results of any such action that has been completed. The primary purpose of evaluation, in addition to gaining insight into prior or existing initiatives, is to enable reflection and assist in the identification of future change." **[www24]**

5.2 Software Testing

It can also be stated as the **process of** validating **and** verifying that a software program or application or product to conform the results of the work expected **[www25]**

5.3 Techniques of Software Testing

- **Black Box Testing**
  Also known as Behavioral Testing, is a software testing method in which the internal structure/ design/ implementation of the item being tested is not known to the tester. These tests can be functional or non-functional, though usually functional. **[www26]**

- **White Box Testing**
  Also known as Clear Box Testing, Open Box Testing is a software testing method in which the internal structure/ design/ implementation of the item being tested is known to the tester. The tester chooses inputs to exercise paths through the code and determines the appropriate outputs. Programming know-how and the implementation knowledge is essential. White box testing is testing beyond the user interface and into the nitty-gritty of a system. **[www27]**

5.3 Test Case

In the simplest form, a test case is a set of conditions or variables under which a tester determines whether the software satisfies requirements and functions properly. A test case is a single executable test which a tester carries out. It guides them through the steps of the test. You can think of a test case as a set of step-by-step instructions to verify something behaves as it is required to behave. **[www27]**

5.3.1 Test Case for online student application

Test Number	Test Description	Steps to Test	Expected Result
1	Validate User Input Details.	Any inputs not Fill in form except mobile number	Display Please Fill Form Properly
2	Validate NIC	Input alphabetic Characters	Display Invalid entry
3	Validate NIC	Enter correct NIC	Fill Gender and DOB
4	Validate Phone Number	Input characters except 0-9	Display Invalid entry
5	Validate Phone Number	Input less than 10 digits number	Display Minimum of 10 Digits in red color
6	Validate Phone Number	Input greater than 10 digits number	System should prevent to input more than 10 digits
7	Validate form	Input all correct data and Submit	Display “Do you Want to Apply for the Course?”
8	Validate form	Input all correct data and Submit and Clicked yes	Display “Your Application has been sent successful. you will receive a conformation mail, please check”

Table 5. 1 Student Online Application Test case

5.3.2 Test Case for User Authentication

Test Number	Test Description	Steps to Test	Expected Result
1	Validate User Input Details.	Enter correct username Enter incorrect password	Display Sorry wrong password
2	Validate User Input Details.	Enter incorrect username Enter correct password	Display Sorry, Username Not found
3	Validate User Input Details.	Enter both username and password incorrectly	Display Sorry, Username Not found
4	Validate User Status	Enter correct username Enter correct password Status pending	Display Please activate your account
5	Validate User Status	Enter correct username Enter correct password Status block	Display Sorry, you are blocked
6	Validate User Status	Enter correct username Enter correct password Status active	Successfully Log into the system

Table 5. 2 User Authentication Test Case

5.3.3 Test Case for User Management Module

Test Number	Test Description	Steps to Test	Expected Result
1	Validate User Input Details.	Any inputs not Fill in form	Display “Please Fill Form Properly”
2	Validate Email (Personal information)	Enter Taken Email	Display in RED “Email already!”
3	Validate Email (Personal information)	Enter new email	Display in Green “Email Available”
4	Validate Phone Number (Personal information)	Input characters except 0-9	Display Invalid entry
5	Validate Phone Number (Personal information)	Input less than 10 digits number	Display Minimum of 10 Digits in red color
6	Validate Phone Number (Personal information)	Input greater than 10 digits number	System should prevent to input more than 10 digits
7	Validate User Name (account information)	Enter already taken username	Display in RED “User Name Taken!”
8	Validate User Name (account information)	Enter Correct Username	Display in Green “User Name Available”

9	Validate Password (account information)	Enter less than 6 digits number	Display in RED "Please match the requested format"
10	Validate Re Password (account information)	Enter Incorrect Password	Display in RED "Passwords do not match!"
11	Validate Re Password (account information)	Enter Correct Password	Display in Green "Passwords Matched!"
12	Validate User Type (account information)	Click to Next Finish Unselect User type	Please select an item in the list & Message in Please Fill Form Properly
13	Validate form	Input all correct data and Submit	Display "Do you Want to Create admin?"
14	Validate form	Input all correct data and Submit and Clicked yes	Display "Successfully Created"
15	Validate Delete admin	Click the delete button	Display conformation to delete if admin agreed delete the admin
16	Search Admin List	Search Admin list by their details	Sort out the admin list by the requirement
17	Sort the column	Select the wanted columns	Sort out the column by the requirement

Table 5. 3 User Authentication Test Case

5.3.4 Test Case for Center Management Module

Test Number	Test Description	Steps to Test	Expected Result
1	Validate User Input Details.	Any inputs not Fill in form	Display Please Fill Form Properly
2	Validate Phone Number	Input characters except 0-9	Invalid Entry
3	Validate Phone Number	Input less than 10 digits number	Display Minimum of 10 Digits in red color
4	Validate Phone Number	Input greater than 10 digits number	System should prevent to input more than 10 digits
5	Validate form	Input all correct data and Submit	Display "Do you Want to Create Center?"

6	Validate form	Input all correct data and Submit and Clicked yes	Display “Successfully Created”
7	Validate Delete Center	Click the delete button	Display conformation to delete if admin agreed delete the Center
8	Search Center List	Search Center list by their details	Sort out the Center list by the requirement
9	Sort the column	Select the wanted columns	Sort out the column by the requirement

Table 5. 4 User Authentication Test Case

5.3.5 Test Case for Course Management Module

Test Number	Test Description	Steps to Test	Expected Result
1	Validate User Input Details.	Any inputs not Fill in form	Display Please Fill Form Properly
2	Validate Course Code	Enter already taken Course Code	Display RED in “Course code id Taken!”
3	Validate Course Code	Enter Correct New Course Code	Display in GREEN “Course Code Available”
4	Validate form	Input all correct data and Submit	Display “Do you Want to Create Course?”
5	Validate form	Input all correct data and Submit and Clicked yes	Display “Successfully Created”
6	Validate Delete Course	Click the delete button	Display conformation to delete if admin agreed delete the Course
7	Search Course List	Search Course list by their details	Sort out the Course list by the requirement
8	Sort the column	Select the wanted columns	Sort out the column by the requirement

Table 5. 5 Course Management Test Case

5.3.6 Test Case for Student Registration

Test Number	Test Description	Steps to Test	Expected Result
1	Validate Registration information	Any inputs not Fill in form	Display Please Fill Form Properly
2	Validate Registration information	Select input Center	Select Center details from Database
3	Validate Registration information	Select input Course	Select Course Details from Database
4	Validate Student information	Enter Already input MIS	Display MIS number Taken in RED
5	Validate Student information	Enter new MIS	Display MIS number Available in Green
6	Validate NIC	Input alphabetic Characters	Display Invalid entry
8	Validate NIC	Enter correct NIC	Fill Gender and DOB
9	Validate Phone Number (Personal information)	Input characters except 0-9	Display Invalid entry
10	Validate form	Input all correct data and Submit	Display “Do you Want to Register Student?”
11	Validate form	Input all correct data and Submit and Clicked yes	Display “Successfully Created”
12	Search Student List	Search Student list by their details	Sort out the Student list by the requirement
13	Sort the column	Select the wanted columns	Sort out the column by the requirement

Table 5. 6 Student Registration Test Case

5.3.7 Test Case for Student Dropout

Test Number	Test Description	Steps to Test	Expected Result
1	Validate User Input Details.	Any inputs not Fill in form	Display Please Fill Form Properly
2	Validate form	Input all correct data and Submit	Display “Do you Want to Drop This Student?”
3	Validate form	Input all correct data and Submit and Clicked yes	Display “Successfully Dropped”

Table 5. 7 Student Dropout Test Case

5.3.8 Test Case for Add Results

Test Number	Test Description	Steps to Test	Expected Result
1	Validate Result	Input MIS	Load Subject & Grade Details
2	Validate Result	Check Year	Load current year
3	Validate Subject Grade	Leave any grade empty	Display "Please select an item in the list" in RED
4	Validate form	Input all correct data and Submit	Display "Do you Want to Add Results?"
5	Validate form	Input all correct data and Submit and Clicked yes	Display "Successfully Created"

Table 5. 8 Add Results Test Case

5.3.9 Test Case for Gallery

Test Number	Test Description	Steps to Test	Expected Result
1	Validate Input Details.	Any inputs not Fill in form	Display Please Fill Form Properly
2	Validate form	Input all correct data and Submit	Display "Do you Want to Insert Image?"
3	Validate form	Input all correct data and Submit and Clicked yes	Display "Successfully Created"
4	Validate Delete Gallery	Click the delete button	Display conformation to delete if admin agreed delete the Data

Table 5. 9 Gallery Test Case

5.3.10 Test Case for Slideshow

Test Number	Test Description	Steps to Test	Expected Result
1	Validate Input Details.	Any inputs not Fill in form	Display Please Fill Form Properly
2	Validate form	Input all correct data and Submit	Display "Do you Want to Insert Image?"
3	Validate form	Input all correct data and Submit and Clicked yes	Display "Successfully Created"

4	Validate Delete Slideshow	Click the delete button	Display conformation to delete if admin agreed delete the Data

Table 5. 10 Slideshow Test Case

5.3.11 Test Case for User Profile Details Change

Test Number	Test Description	Steps to Test	Expected Result
1	Validate Profile Detail	Open Model	Load Current User Detail
2	Validate Profile Detail	Leave any foam empty	Display "Please fill out this field" in RED & Message in Please Fill Form Properly
3	Validate Profile Detail	Enter Existing username	Username already taken

Table 5. 11 User Profile Test Case

5.3.12 Test Case for User Profile Password Change

Test Number	Test Description	Steps to Test	Expected Result
1	Validate Password	Leave any foam empty	Display "Please Fill Form Properly
2	Validate Old Password	Enter wrong old password	Sorry, your old password is wrong
3	Validate Password	Enter less than 10 digits number	Message in RED "Please match the requested format"
4	Validate Re Password	Enter Incorrect Password	Message in RED "Passwords do not match!"
5	Validate Re Password	Enter Correct Password	Message in Green "Passwords Matched!"

Table 5. 12 User Profile Password Change

5.3.13 Test Case for Password Reset

Test Number	Test Description	Steps to Test	Expected Result
1	Validate Password Reset	Click Forgot my Password link	Open modal to enter email
2	Validate Password Reset	Enter wrong Email	Display Sorry email not found
3	Validate Password Reset	Enter Correct Email	Send a password reset link to mail and Display you will receive a reset link in your mail please check
4	Validate Password Reset	Enter New password correctly	Display Your Password has been successfully updated
5	Validate Password Reset	If retry same link after updating password	Display Token has expired

Table 5. 13 Password Reset Test Case

5.4 User Evaluation

After implementation it was tested in the client environment to client get to know about system functionalities that provided by the system. After completing user evaluation the users were very happy. The certificate has been append to Appendix G.

Chapter 6: Conclusion

6.1 Introduction

The VTA was established with the intent of skills for employment Manpower Division-the training arm of Labor Department that was running Technical and Vocational Education and training programs in many parts of Sri Lanka, Was converted to the newly constitute Vocational Training Authority making vocational training more accessible to rural youth and depressed segments of the country.

There are mainly 11 District centers over the srilanka. We have chosen battticaloa district center to implement the system there are 14 center under the batticaloa district center.

From the start they have maintained their process by using a traditional manual system. With the manual system they have faced lots of difficulties when maintaining the information.

From the Requirement analysis phase the client requirement were carefully analyzed. Therefore proposed system has been implement and being executed successfully.

Moreover, this proposed system has been developed under my knowledge which I have cultivated from my studies of Bachelor of Information Technology (BIT)

6.2 Future Improvement

Furthermore, development of this proposed system really encouraged the VTA. Some suggestions in the future are as follows.

- **Provide a Log system**
  By implementing this suggestion, System can create logs about admin's activities. When an admin affected with database the logs will create.

- **Add Customize Student Registration**
  Super-Admin should open the student registration for centers. So, student registration can made with some sort of period when Super-Admin activate this privilege to centers

6.3 Lesson Learnt

Programming a web based solution was a really fantastic experience. In order to develop a dynamic web based solution interface considered as a main part of this project because the VTA management needed a good looking front end in order to attract the visitors.

I gain some new technologies such as Ajax, Encryption/Decryption while developing the system. Also while gone through the web about PHP it really helped me to improve my programming knowledge.

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Appendix A-System Documentation

This Documentation explains about the hardware and software environment which needs to be access. There is no installation needed for this system. This system is already hosted in their webserver. Because system should use among district.

System requirements can be verified according to Table A.1 and Table A.2.

Hardware Requirements

Hardware	Minimum Requirements
Processor	Pentium IV 2GHz Processor
Memory	512 MB RAM
Hard Disk	40GB Capacity
Display	1024*768 Resolution Monitor
Internet	ADSL Connection (Minimum Speed 512Kbps)
Printer	Inkjet or Laser Printer

Table A. 1: Hardware Requirements

Software Requirements

Software	Minimum Requirements
Operating System	Windows Xp, Windows7, Windows 8, Windows 10 O/S
Web Browser	Google Chrome, Firefox, Opera
Spread Sheet	Microsoft Excel
PDF	Foxit Reader

Table A. 2: Software Requirements

Launching the System

Step 1

- open any web browser

Step 2

- type the URL http://www.vtabatti.com and press “Enter” button to access the system

- Please refer Appendix-C User Documentation to know how to operate the system

Appendix B-Design Documentation

Use Case Diagram with Detailed information

Following Figure B.1 use case diagram in detail shown in Chapter 3.

User Handling Module

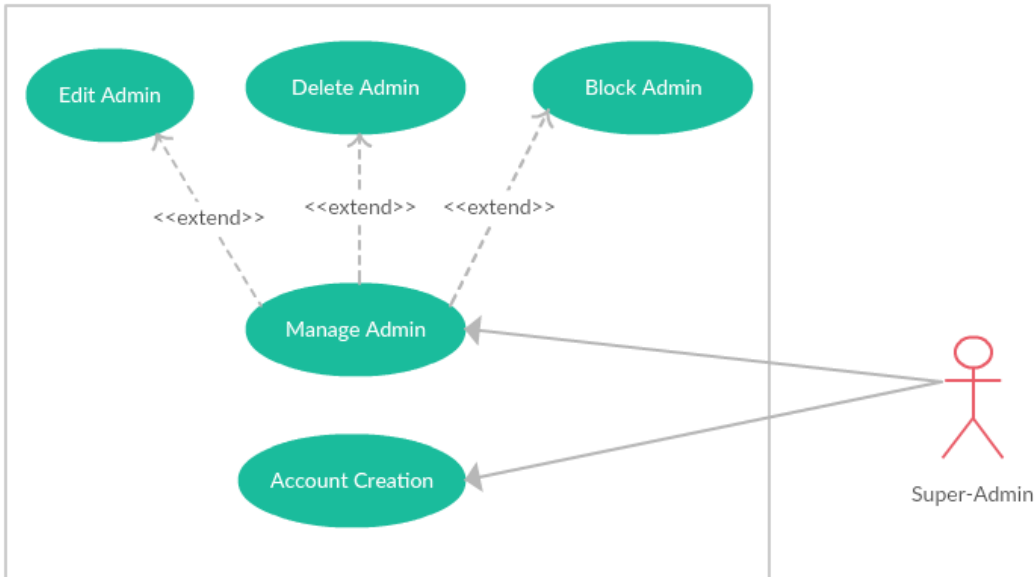


Figure B. 1 User Handling Module

Use case name	Create New Admin
Actors	Super Admin
Description	Perform user handling activities
Pre-Conditions	
Super Admin should login to the system Should not contain email previously in the system Should not contain username previously in the system Admin's Center should previously in the system	
Flow of Events	
Add details to the system Activation email send to relevant admin mail Perform edit, disable operations	
Post-Conditions	
Data should be accurate	

Table B. 1: Create New Admin Use Case

Use case name	Block a Admin
Actors	Super Admin
Description	Block login portion of a admin
Pre-Conditions	
Super Admin should login to the system	
Flow of Events	
Update the status of admin blocked	
Post-Conditions	
Disable the functions of user inside the system	

Table B. 2: Block Admin Use Case

Center Management Module

Following Figure B.2 illustrates the Center Management Module

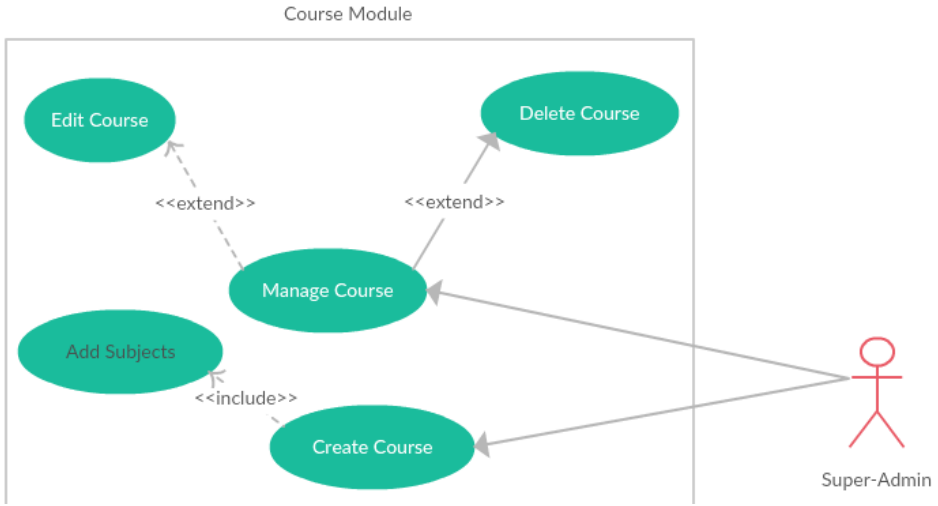


Figure B. 2 Center Management Module

Use case name	Create New Course
Actors	Super Admin
Description	Create New Course
Pre-Conditions	
Super Admin should login to the system Should not contain course code previously in the system	
Flow of Events	
Add details to the system Perform edit, disable operations Publish Course details in the website automatically	
Post-Conditions	
Data should be accurate Add Subject to the relevant course	

Table B. 3: Create New Course Use Case

Student Management Module

Following Figure B.3 illustrates the Student Management Module

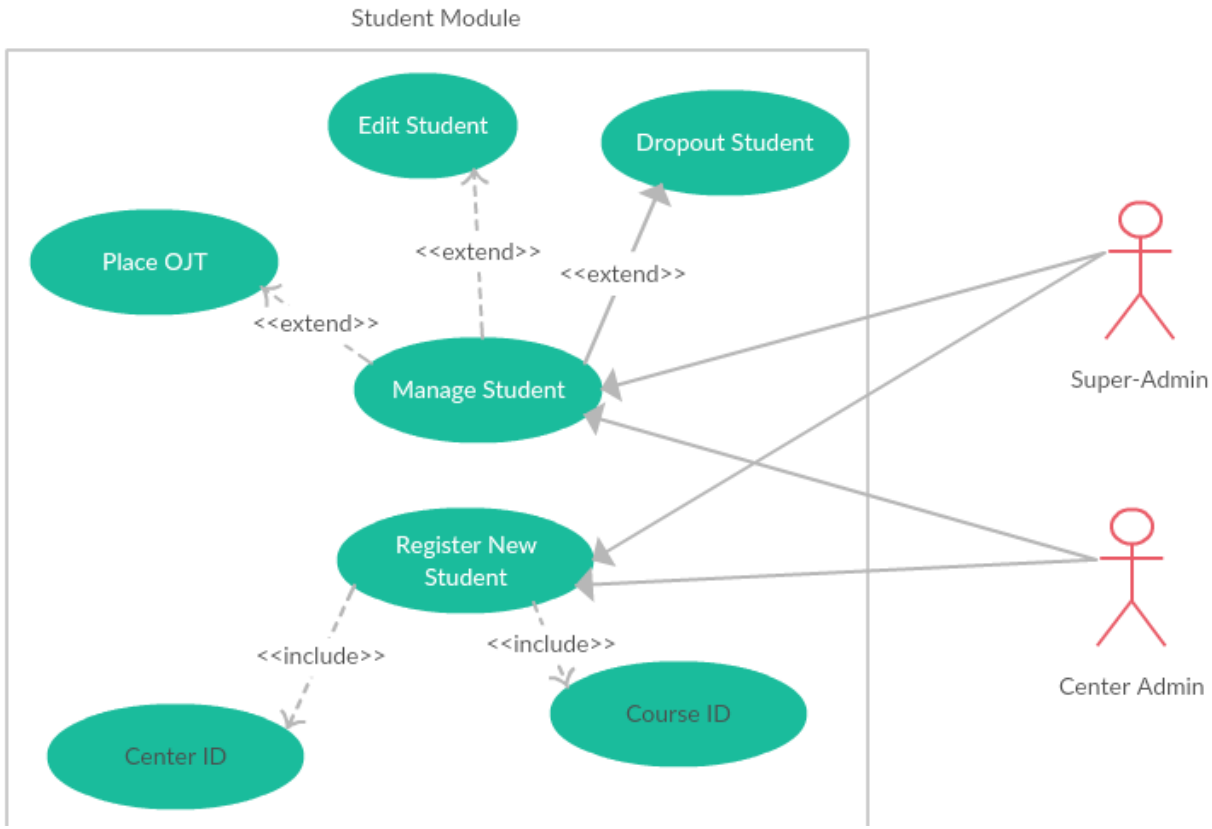


Figure B. 3 Student Management Module

Use case name	Register New Student
Actors	Super Admin , Center Admin
Description	Register New Student
Pre-Conditions	
Super Admin or Center Admin should login to the system Center Admin can only register student for his relevant center Should not contain MIS number previously in the system Center Should Create in the system Course Should Create in the system	
Flow of Events	
Add details to the system Perform dropout, OJT operations	
Post-Conditions	
Data should be accurate	

Table B. 4: Register New Student use Case

Use case name	Dropout a Student
Actors	Super Admin , Center Admin
Description	Dropout a Student from active students
Pre-Conditions	
Super Admin or Center Admin should login to the system Center Admin can only dropout student for his relevant center Relevant student details should be in the system	
Flow of Events	
Change the student status to dropout	
Post-Conditions	
Data should be accurate	

Table B. 5: Drop Student Use Case

Activity Diagram

Following Figure B.4 illustrates the activity diagram of login module

Login Module

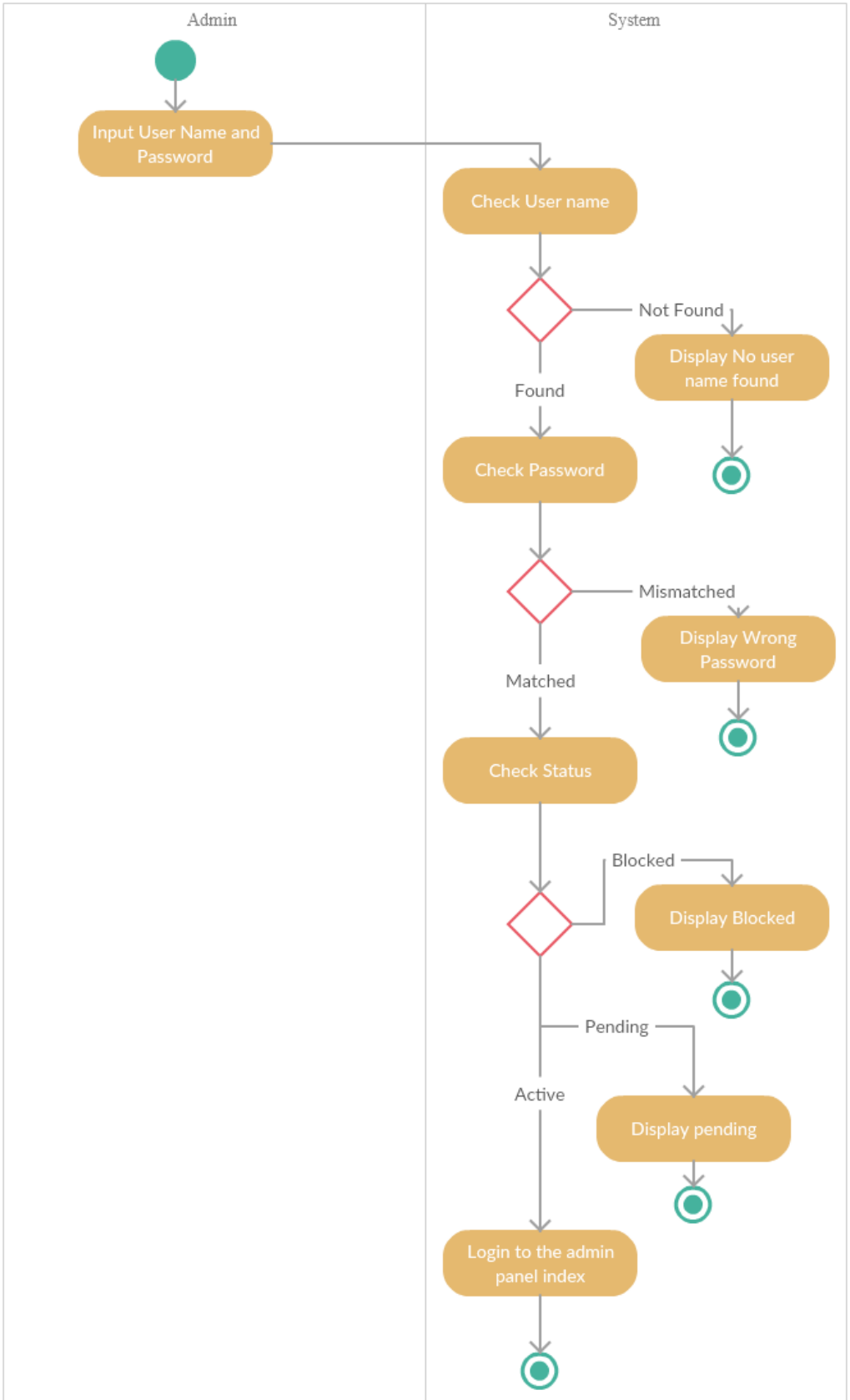


Figure B. 4 Login Module

Appendix C-User Documentation

User Documentation explain how to operate the entire system in different functional position such as different privileged users who all have the access processing with the system functional areas. Different user levels are available to each admin Super Admin has all the privileges in the system.

Login Page and other Features

Open your web browser. Type the URL www.vtabatti.com/login/ and press enter key. User can find login page (figure C.1). Enter your username and password in the field marked (01). And click sign in button (02)

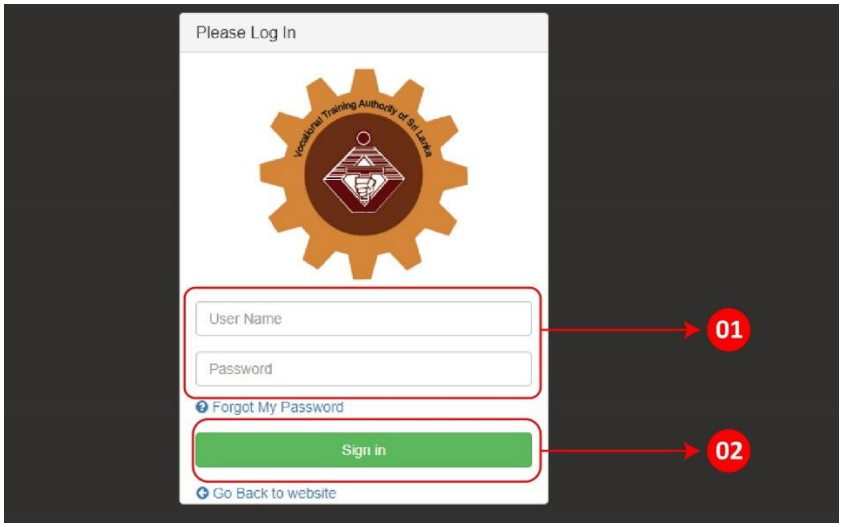


Figure C. 1 Login Page

In the Main interface page (center admin interface) (figure C.2) you can navigate through pages by clicking (02). You can go through (01) to change relevant personal details of admin. Following Figure C.3 illustrates UI of personal information

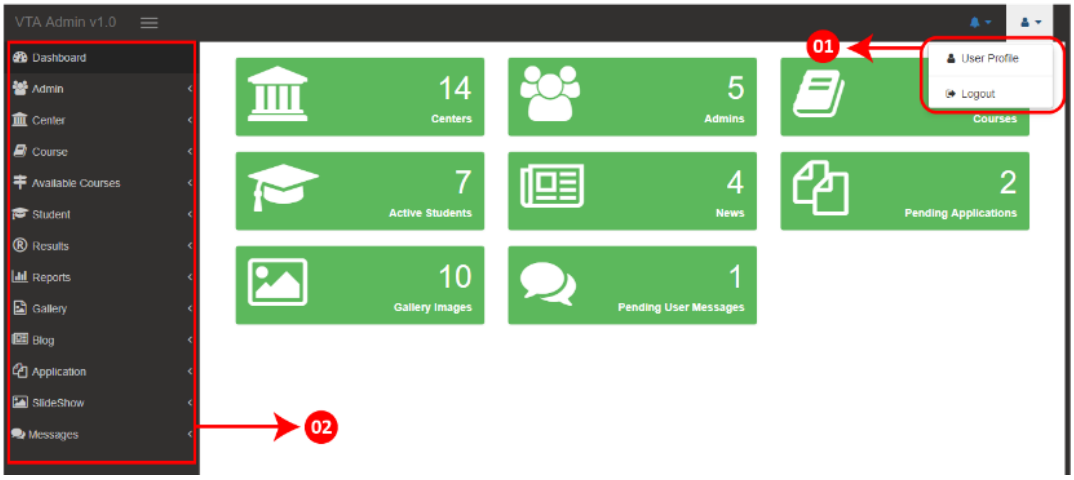


Figure C. 2 Main Interface

Password Change Facility

Click change password button (01) in Figure C.3 enter your old password and type your new password (figure C.4) and click the update password button.

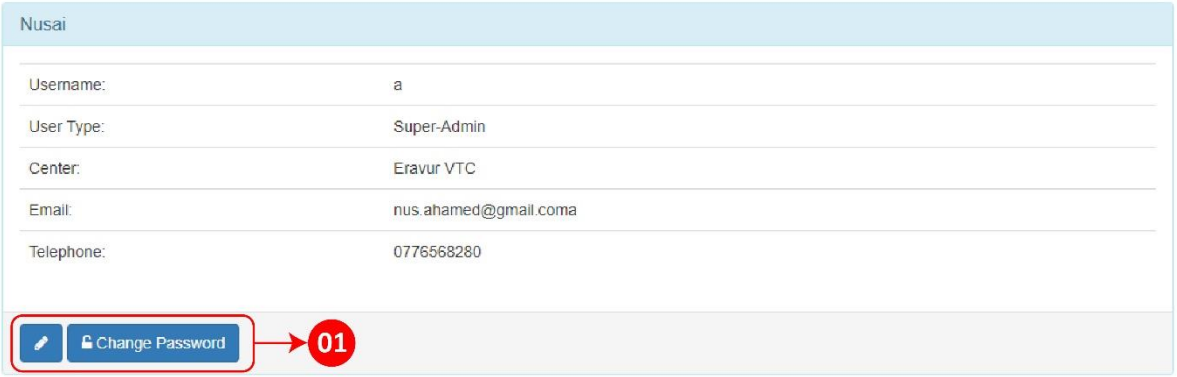


Figure C. 3 Personal Information

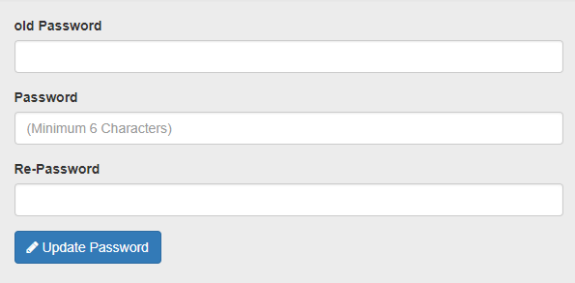


Figure C. 4 Change Password

Change Profile Information

Click change pencil icon button (01) in Figure C.3. Change your personal information (figure C.5) and click finish button.

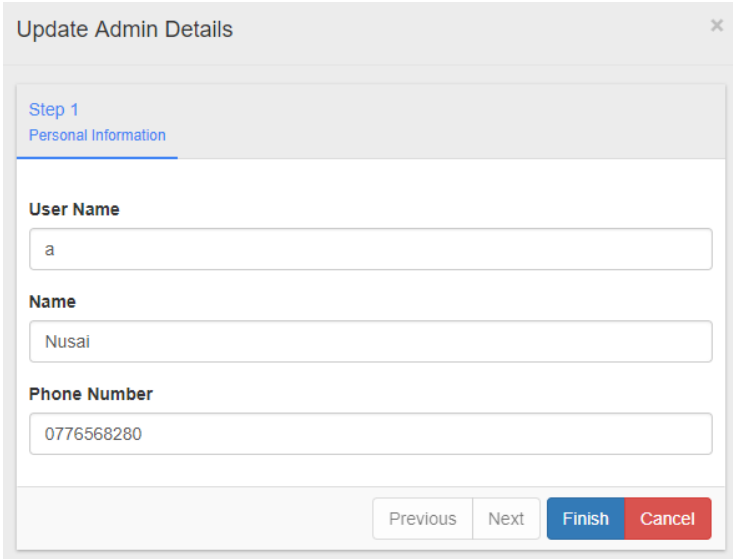


Figure C. 5 Update Admin Details

Data Manipulation in Tables and Operations

Figure C.6 illustrates Data manipulation operations

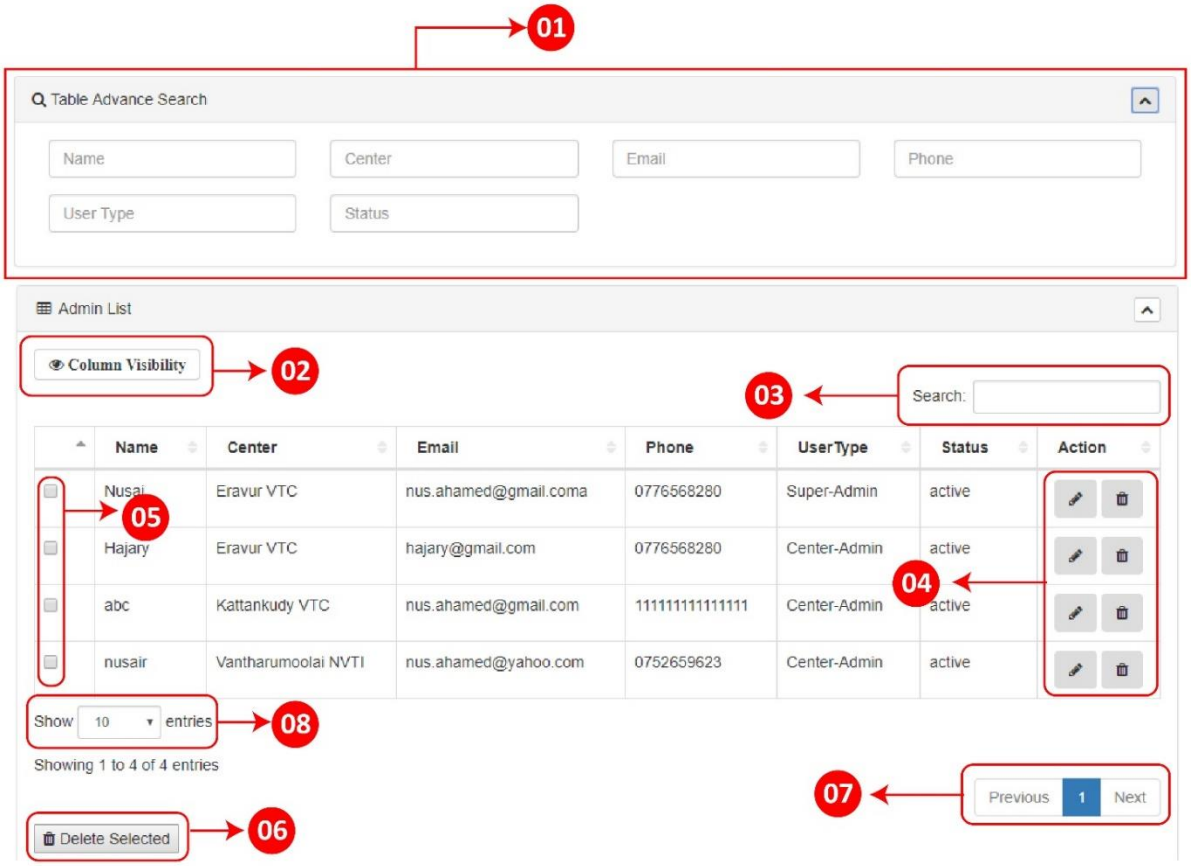


Figure C. 6 Data List

- **01 –** Search Data Table records the search can be dependent
- **02 –** Column Visibility is used hide/show the columns admin can use this feature to hide/show columns for their personalized need
- **03 –** This feature used to sort data by single condition
- **04 –** This feature used to edit/delete single data set
- **05 –** This Check box is used to select multiple data set in table
- **06 –** This Button is used to delete selected rows in table
- **07 –** This feature is used to pagination large scale of data
- **08 –** This feature is used to how many data should visible in single page

Form Wizard

Form Wizard is used to input large amount of inputs in small size. Input fields can be change through navigation buttons. Figure C.7 illustrates UI Design of form wizard

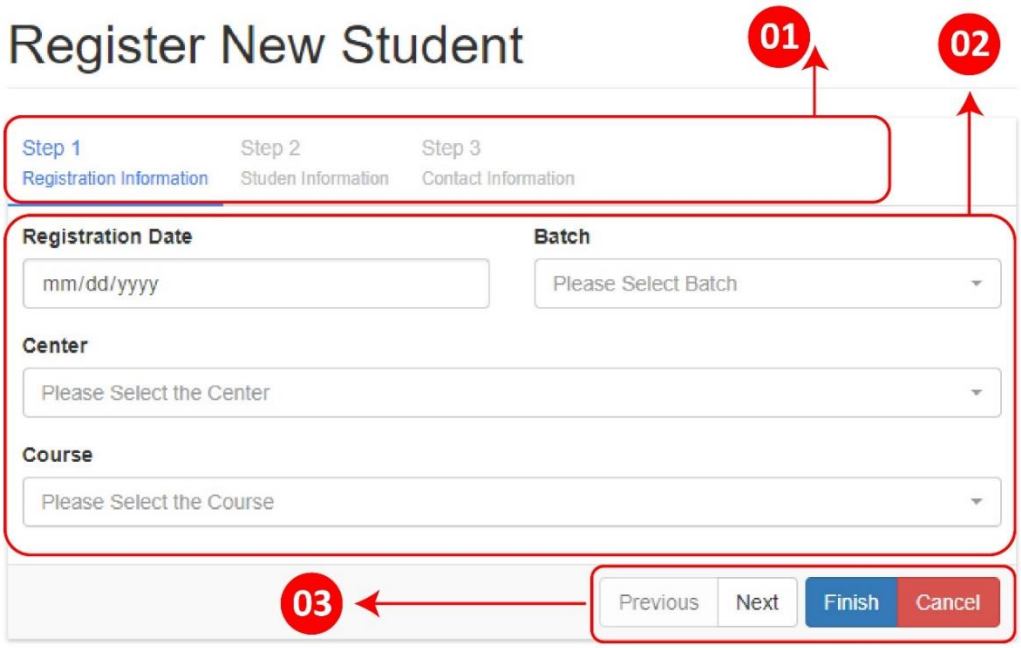


Figure C. 7 Form Wizard

- **01 –** This step system is used to categorize the form inputs
- **02 –** This body of the form wizard consists form inputs
- **03 –** This footer is consists full of navigation buttons

Form Image Handling

Image upload button is used to upload images. It's use live image preview facility to handle images easy for admin. Figure C.8 and C.9 illustrates Image Uploading UI Design

Figure C. 8 Upload Image

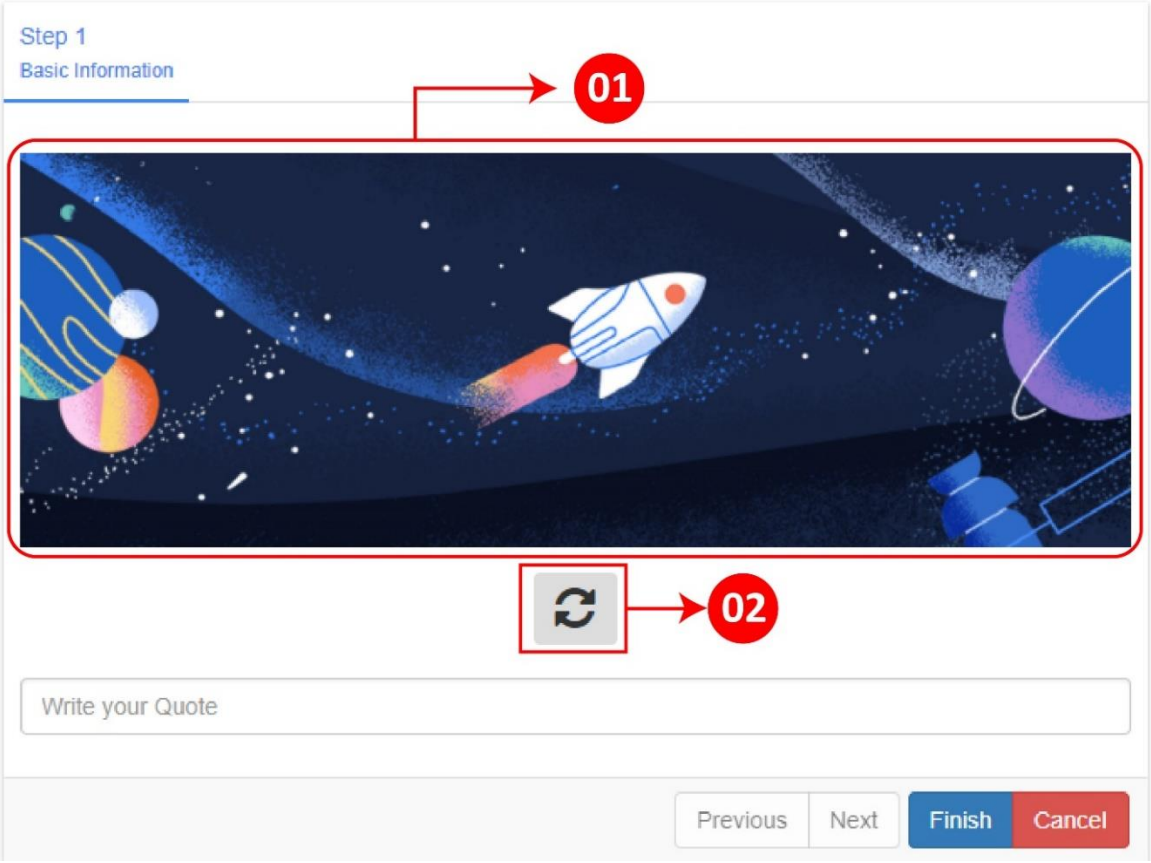


Figure C. 9 Image Upload

- **01 –** Admin selected image will show in love preview
- **02 –** Reset The Image

Student Registration

Student Registration can be made by Super Admin as well as Center Admin. Figure C.10 illustrates UI Register New Student

(Path: Student -> Register New Student)

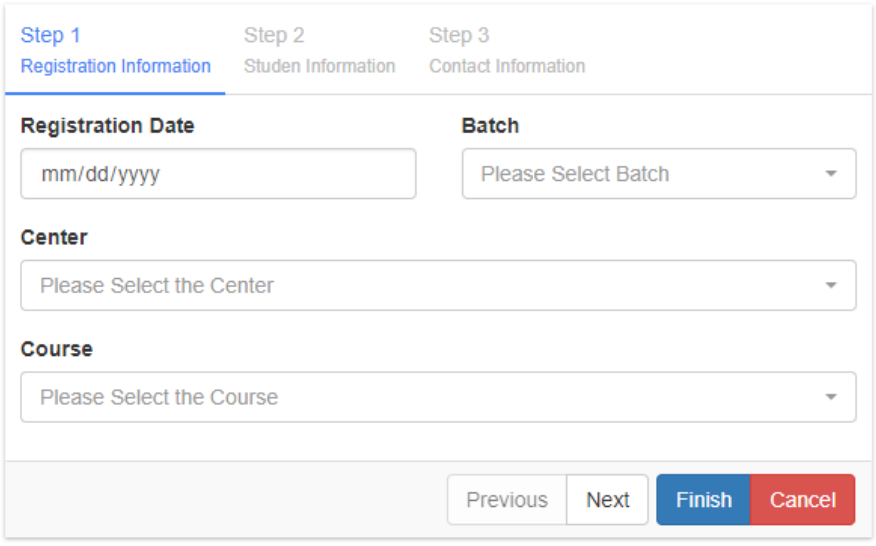


Figure C. 10 Register New Student Interface

Manage Active Student

After Registering Students those student detail can be managed by navigating to manage active students. You can edit, dropout and place OJT for students. Figure C.11 illustrates UI of Manage active Students

(Path: Student -> Available Student List)

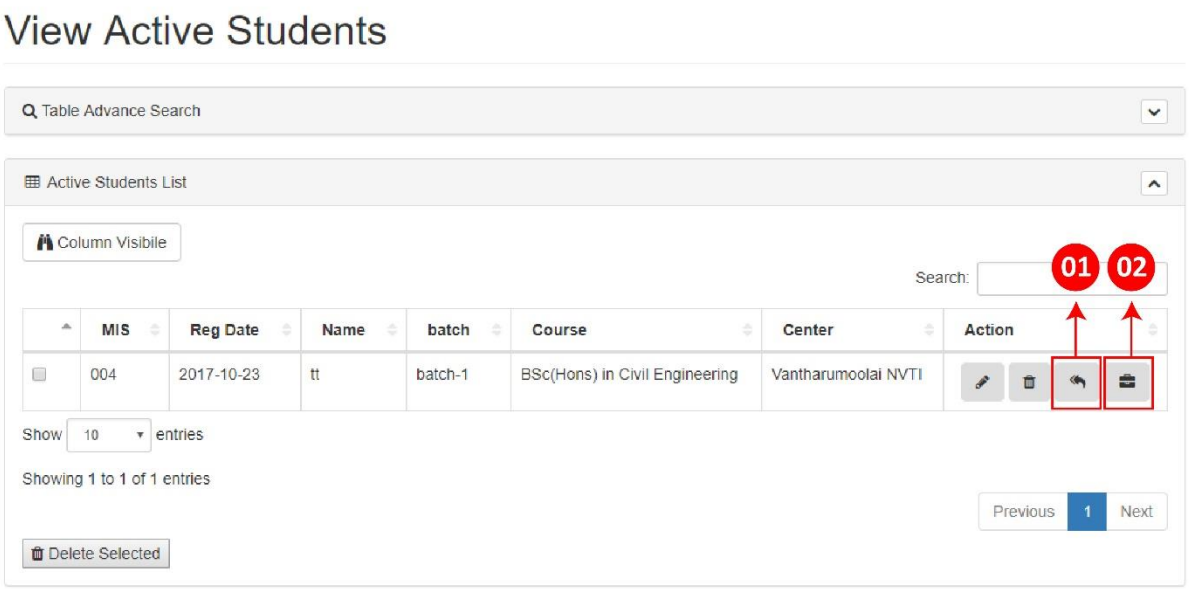


Figure C. 11 Manage Active Students

- **02 – Place OJT for relevant student**

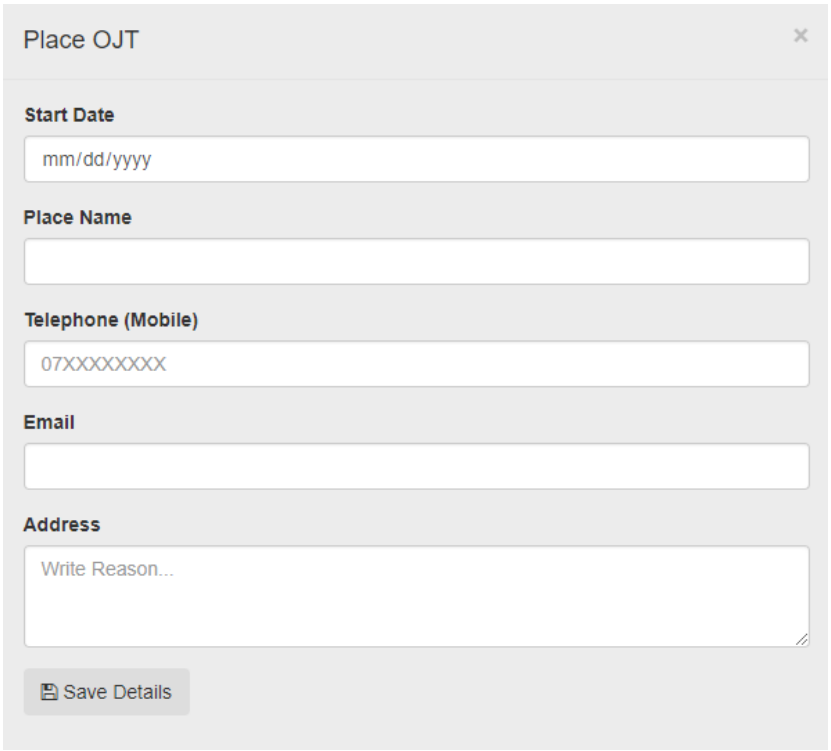


Figure C. 12 OJT Details

- **01 – Dropout Relevant Student**

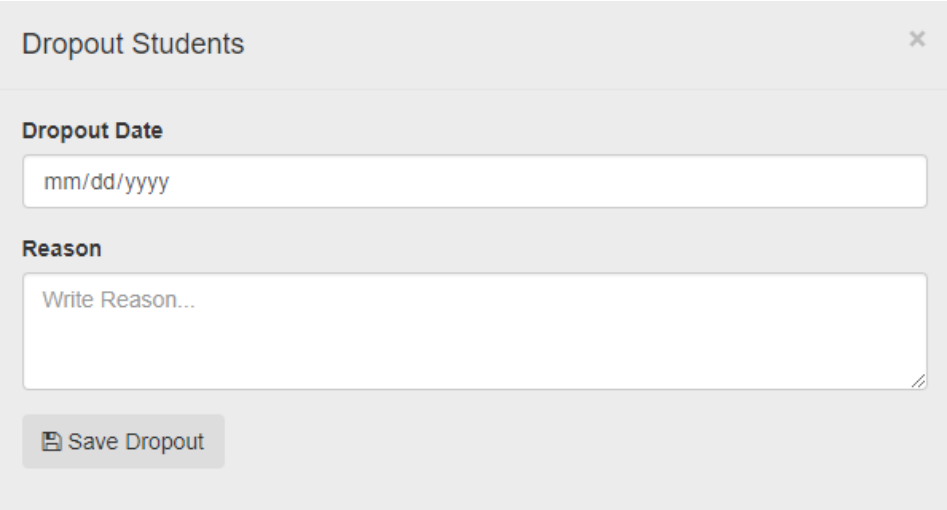


Figure C. 13 Dropout Student

Add Results

Student Results can be Add by Super Admin as well as Center Admin. The only thing need to input is student MIS student Center details, Course Details, Subject Details will automatically generate by System. Figure C.14 and C.15 illustrates UI of Results Management (Path: Results-> ADD Results)

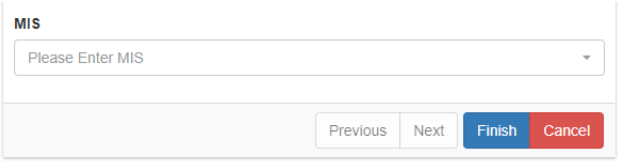


Figure C. 14 Results Before Enter Student MIS

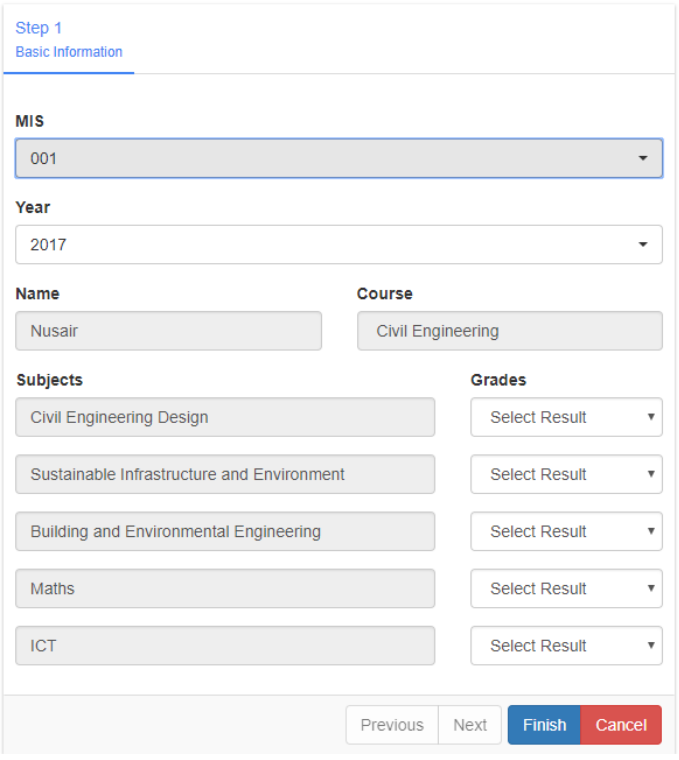


Figure C. 15 Results After Enter Student MIS

Add Blogs

Blog is used to publish news in the VTA website. After creating a new news by an admin that news will automatically published in VTA website. Figure C.16 illustrates UI of Blog Management.

(Path: Blog-> ADD Blog)

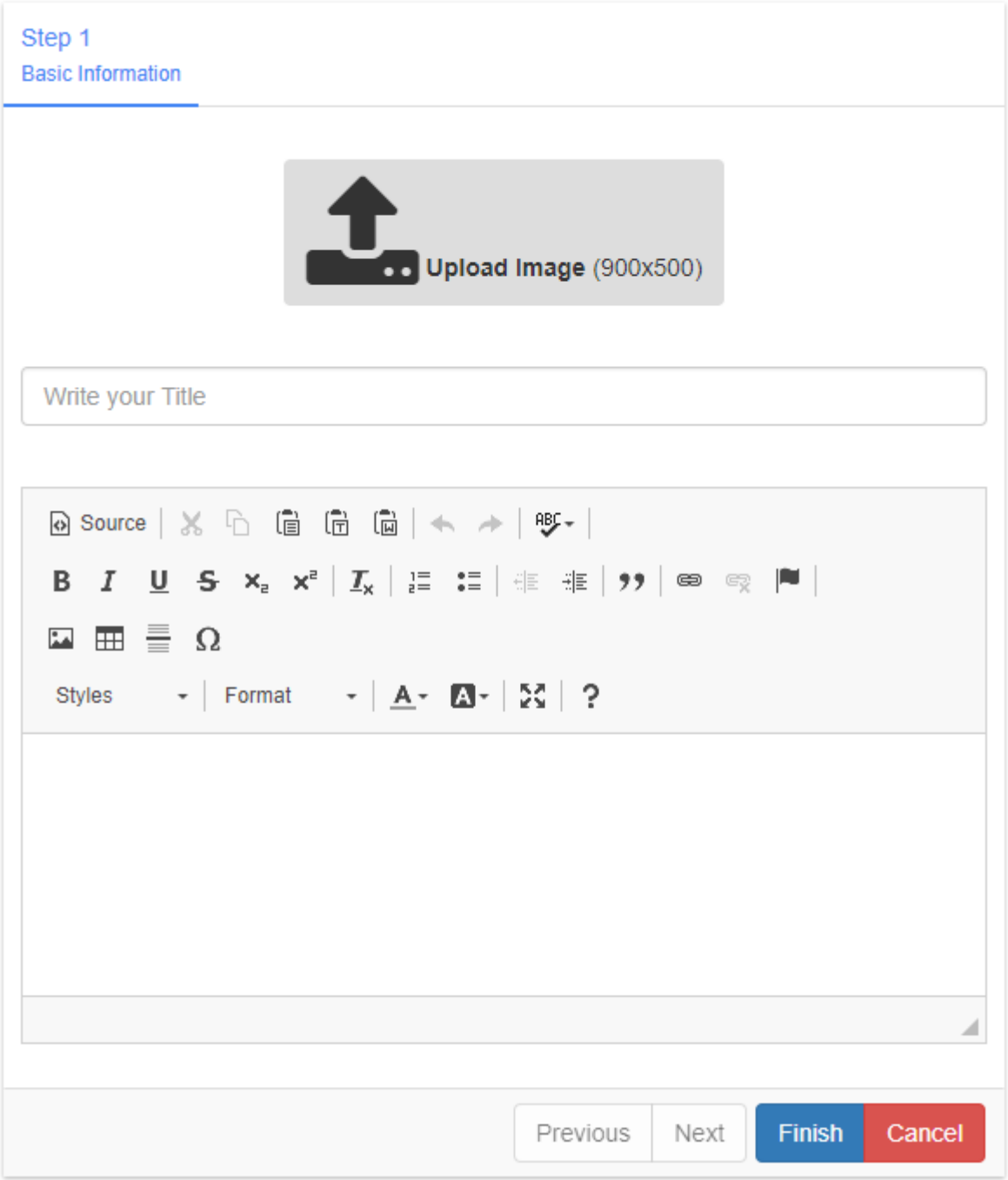


Figure C. 16 Add Blog

Manage Student Online Application

After a student made an online application for a course in a center relevant center admin should view the application and approve or Reject until the application status will remain pending. Figure C.17 illustrates UI of Student Online Application

(Path: Application-> View Application)

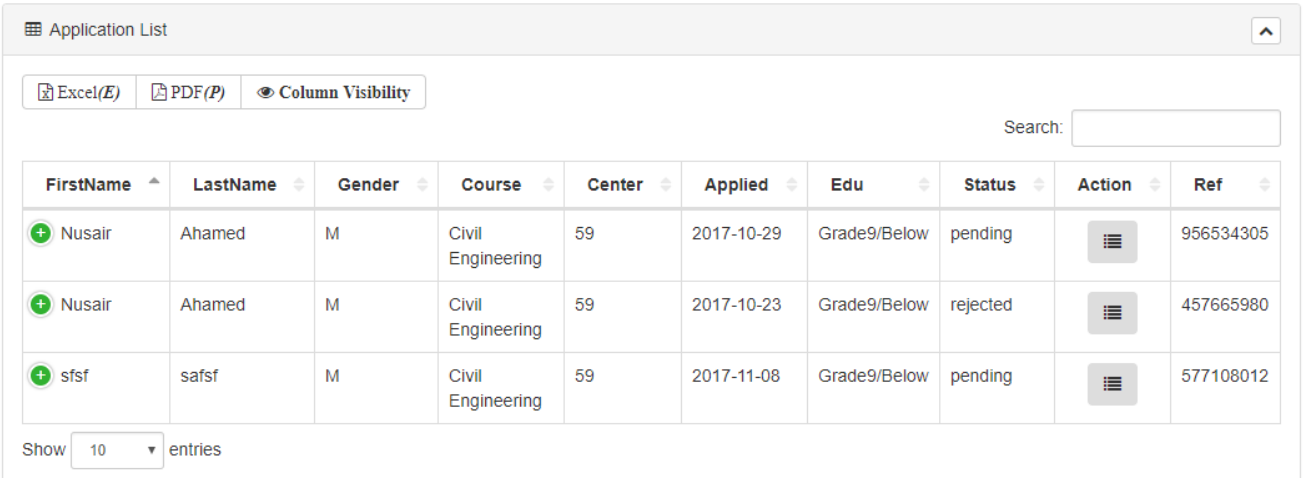


Figure C. 17 Application List

After clicking the button in action column relevant student application will show in modal Figure C.18. Then after viewing the application full details admin have to decide to approve the application or reject the application

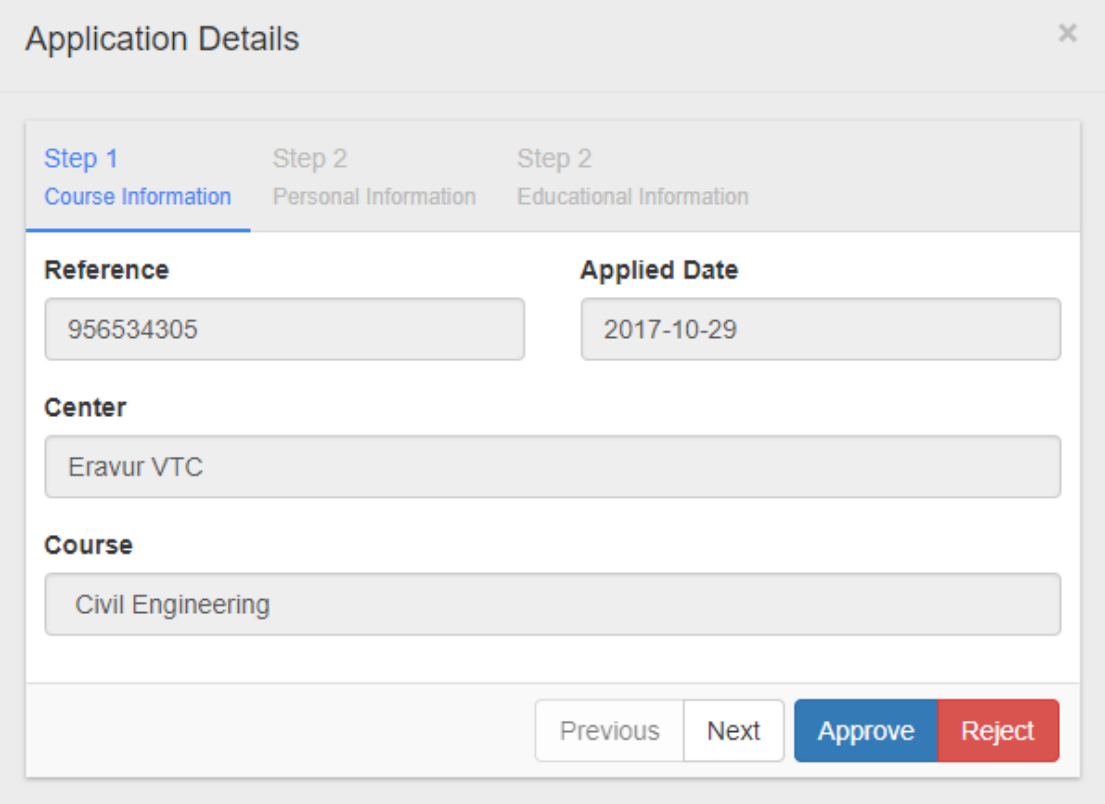


Figure C. 18 Approve or Reject Application

Appendix D-Management Reports

Management Reports are the important things for organization in order to take decision upon any kind of situation whether to improve the Organization management process.

Proposed System could make various kind of reports could exported into PDF also excel file by using data table plugins.

The reports are fully customizable you can filter and sort records also you can even change the column order by dragging columns also you can hide some columns.

Admin Information Report

- all Admin List with all details in pdf

Admin List

Name	Center	Email	Phone	UserType	Status
abc	Kattankudy VTC	nus.ahamed@gmail.com	111111111111111	Center-Admin	active
fasf	Vavunatheevu VTC	abc@gmail.com	123456	Super-Admin	pending
Hajary	Eravur VTC	hajary@gmail.com	0776568280	Center-Admin	block
Nusai	Eravur VTC	nus.ahamed@gmail.coma	0776568280	Super-Admin	active
nusair	Vantharumoolai NVTI	nus.ahamed@yahoo.com	0752659623	Center-Admin	active

Figure D. 1 Admin List

- all Admin List with all details in pdf (after ordering column by custom)

Admin List

Name	UserType	Status	Center	Phone	Email
abc	Center-Admin	active	Kattankudy VTC	111111111111111	nus.ahamed@gmail.com
fasf	Super-Admin	pending	Vavunatheevu VTC	123456	abc@gmail.com
Hajary	Center-Admin	block	Eravur VTC	0776568280	hajary@gmail.com
Nusai	Super-Admin	active	Eravur VTC	0776568280	nus.ahamed@gmail.coma
nusair	Center-Admin	active	Vantharumoolai NVTI	0752659623	nus.ahamed@yahoo.com

Figure D. 2 Admin List after custom column order

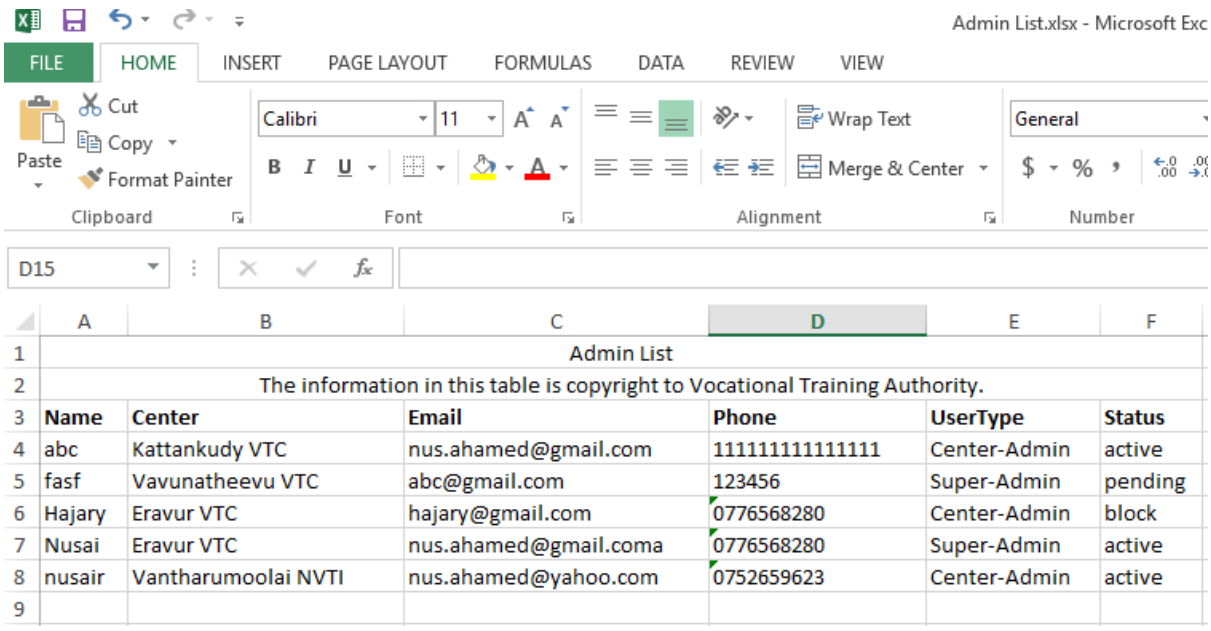
- all Admin List with all details in pdf (after custom sort) (Blocked Admins)

Admin List

Name	Center	Email	Phone	UserType	Status
Hajary	Eravur VTC	hajary@gmail.com	0776568280	Center-Admin	block

Figure D. 3 Admin List after Custom Sort

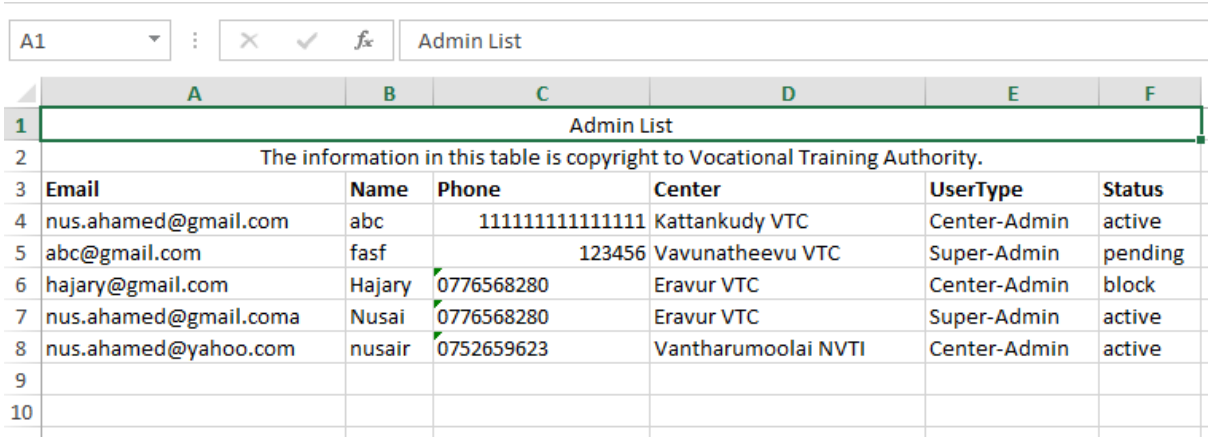
- all Admin List with all details in Excel



	A	B	C	D	E	F
1	Admin List					
2	The information in this table is copyright to Vocational Training Authority.					
3	**Name**	**Center**	**Email**	**Phone**	**UserType**	**Status**
4	abc	Kattankudy VTC	nus.ahamed@gmail.com	111111111111111	Center-Admin	active
5	fasf	Vavunatheevu VTC	abc@gmail.com	123456	Super-Admin	pending
6	Hajary	Eravur VTC	hajary@gmail.com	0776568280	Center-Admin	block
7	Nusai	Eravur VTC	nus.ahamed@gmail.coma	0776568280	Super-Admin	active
8	nusair	Vantharumoolai NVTI	nus.ahamed@yahoo.com	0752659623	Center-Admin	active
9						

Figure D. 4 Admin List with all details

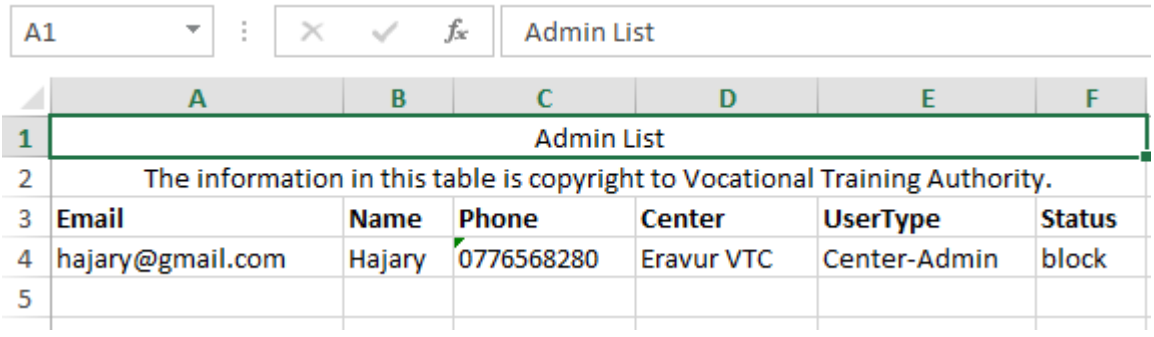
- all Admin List with all details in Excel (after ordering column by custom)



	A	B	C	D	E	F
1	Admin List					
2	The information in this table is copyright to Vocational Training Authority.					
3	**Email**	**Name**	**Phone**	**Center**	**UserType**	**Status**
4	nus.ahamed@gmail.com	abc	111111111111111	Kattankudy VTC	Center-Admin	active
5	abc@gmail.com	fasf	123456	Vavunatheevu VTC	Super-Admin	pending
6	hajary@gmail.com	Hajary	0776568280	Eravur VTC	Center-Admin	block
7	nus.ahamed@gmail.coma	Nusai	0776568280	Eravur VTC	Super-Admin	active
8	nus.ahamed@yahoo.com	nusair	0752659623	Vantharumoolai NVTI	Center-Admin	active
9						
10						

Figure D. 5 Admin List after Custom Column Order

- all Admin List with all details in pdf (after custom sort) (Blocked Admins)



	A	B	C	D	E	F
1	Admin List					
2	The information in this table is copyright to Vocational Training Authority.					
3	**Email**	**Name**	**Phone**	**Center**	**UserType**	**Status**
4	hajary@gmail.com	Hajary	0776568280	Eravur VTC	Center-Admin	block
5						

Figure D. 6 Admin List after filter

VTA Centers Report

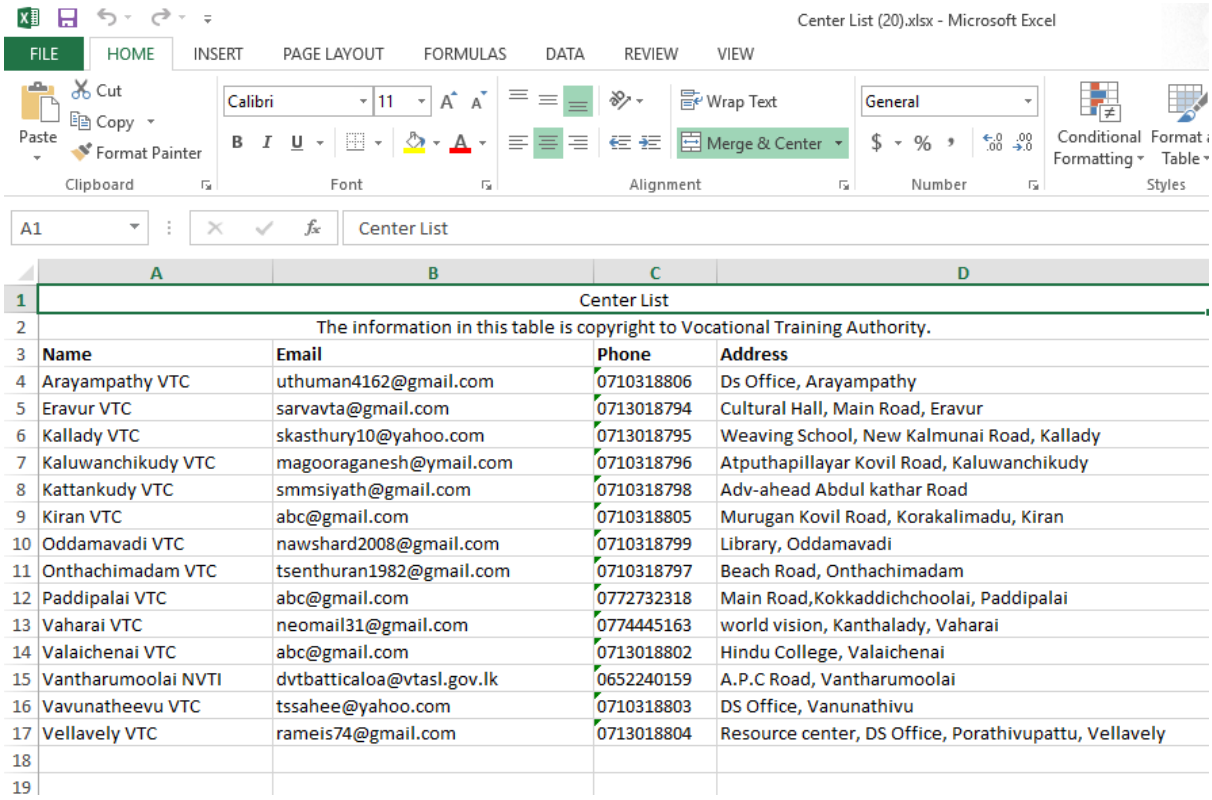
- all Centers Contact list in PDF

Center List

Name	Email	Phone	Address
Arayampathy VTC	uthuman4162@gmail.com	0710318806	Ds Office, Arayampathy
Eravur VTC	sarvavta@gmail.com	0713018794	Cultural Hall, Main Road, Eravur
Kallady VTC	skasthury10@yahoo.com	0713018795	Weaving School, New Kalmunai Road, Kallady
Kaluwanchikudy VTC	magooraganesh@ymail.com	0710318796	Atputhapillayar Kovil Road, Kaluwanchikudy
Kattankudy VTC	smmsiyath@gmail.com	0710318798	Adv-ahead Abdul kathar Road
Kiran VTC	abc@gmail.com	0710318805	Murugan Kovil Road, Korakalimadu, Kiran
Oddamavadi VTC	nawshard2008@gmail.com	0710318799	Library, Oddamavadi
Onthachimadam VTC	tsenthuran1982@gmail.com	0710318797	Beach Road, Onthachimadam
Paddipalai VTC	abc@gmail.com	0772732318	Main Road,Kokkaddichchoolai, Paddipalai
Vaharai VTC	neomail31@gmail.com	0774445163	world vision, Kanthalady, Vaharai
Valaichenai VTC	abc@gmail.com	0713018802	Hindu College, Valaichenai
Vantharumoolai NVTI	dvtbatticaloa@vtasl.gov.lk	0652240159	A.P.C Road, Vantharumoolai
Vavunatheevu VTC	tssahee@yahoo.com	0710318803	DS Office, Vanunathivu
Vellavely VTC	rameis74@gmail.com	0713018804	Resource center, DS Office, Porathivupattu, Vellavely

Figure D. 7 Centers List

- all Centers Contact list in Excel

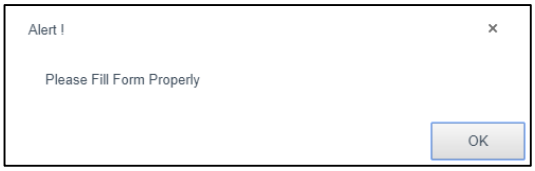
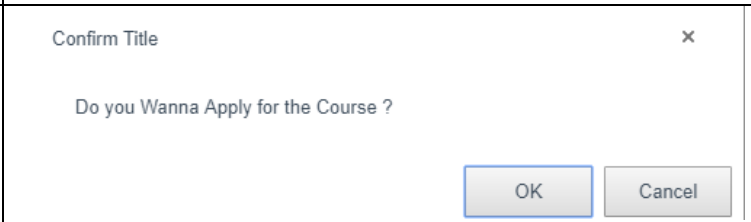
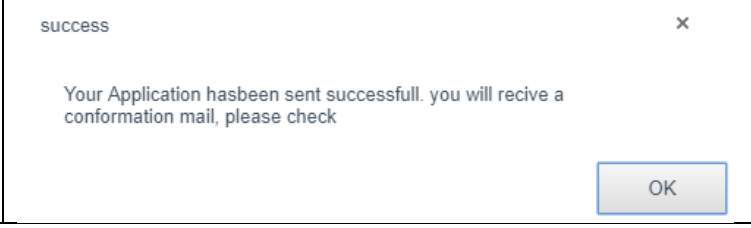


	A	B	C	D
1	Center List			
2	The information in this table is copyright to Vocational Training Authority.			
3	**Name**	**Email**	**Phone**	**Address**
4	Arayampathy VTC	uthuman4162@gmail.com	0710318806	Ds Office, Arayampathy
5	Eravur VTC	sarvavta@gmail.com	0713018794	Cultural Hall, Main Road, Eravur
6	Kallady VTC	skasthury10@yahoo.com	0713018795	Weaving School, New Kalmunai Road, Kallady
7	Kaluwanchikudy VTC	magooraganesh@ymail.com	0710318796	Atputhapillayar Kovil Road, Kaluwanchikudy
8	Kattankudy VTC	smmsiyath@gmail.com	0710318798	Adv-ahead Abdul kathar Road
9	Kiran VTC	abc@gmail.com	0710318805	Murugan Kovil Road, Korakalimadu, Kiran
10	Oddamavadi VTC	nawshard2008@gmail.com	0710318799	Library, Oddamavadi
11	Onthachimadam VTC	tsenthuran1982@gmail.com	0710318797	Beach Road, Onthachimadam
12	Paddipalai VTC	abc@gmail.com	0772732318	Main Road,Kokkaddichchoolai, Paddipalai
13	Vaharai VTC	neomail31@gmail.com	0774445163	world vision, Kanthalady, Vaharai
14	Valaichenai VTC	abc@gmail.com	0713018802	Hindu College, Valaichenai
15	Vantharumoolai NVTI	dvtbatticaloa@vtasl.gov.lk	0652240159	A.P.C Road, Vantharumoolai
16	Vavunatheevu VTC	tssahee@yahoo.com	0710318803	DS Office, Vanunathivu
17	Vellavely VTC	rameis74@gmail.com	0713018804	Resource center, DS Office, Porathivupattu, Vellavely
18				
19				

Figure D. 8 All Centers List in Excel

Appendix E-Test Results

Test Results for online student application

Test Number	Steps to Test	Expected Result	Status
1	Any inputs not Fill in form except mobile number		Pass
2	Input alphabetic Characters		Pass
3	Enter correct NIC		Pass
4	Input characters except 0-9 to NIC		Pass
5	Input less than 10 digits number to Mobile		Pass
6	Input greater than 10 digits number to Mobile	System should prevent to input more than 10 digits	Pass
7	Input all correct data and Submit		Pass
8	Input all correct data and Submit and Clicked yes		Pass

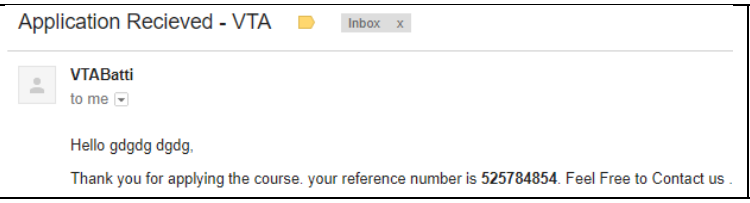
9	Check if Email Received		Pass

Table E. 1: Student Application Test Result

Test Results for User Authentication

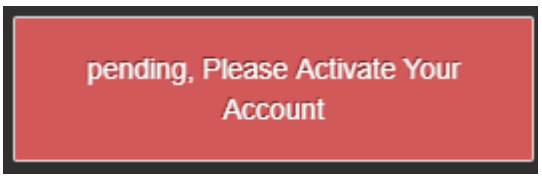
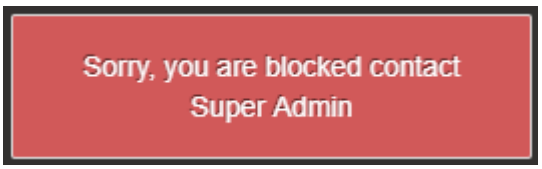
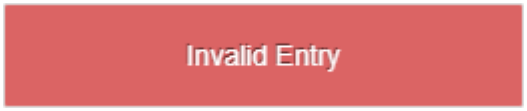
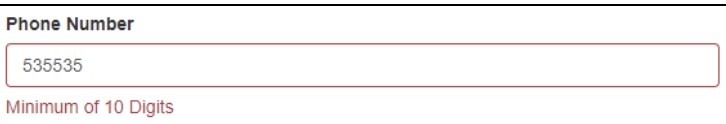
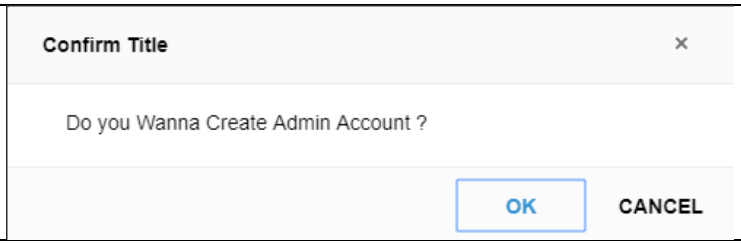
Test Number	Steps to Test	Expected Result	Status
1	Enter correct username Enter incorrect password		PASS
2	Enter incorrect username Enter correct password		PASS
3	Enter both username and password incorrectly		PASS
4	Enter correct username Enter correct password Status pending		PASS
5	Enter correct username Enter correct password Status block		PASS
6	Enter correct username Enter correct password Status active	Successfully Log into the system	PASS

Table E. 2: Student Application Test Result

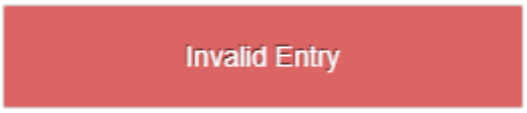
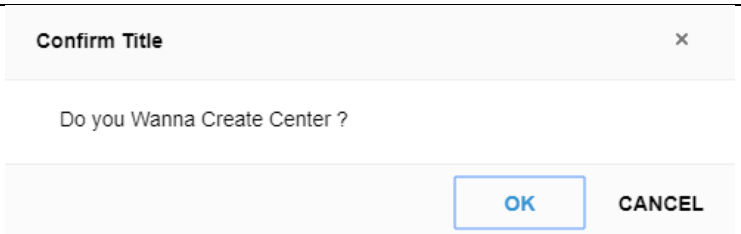
Test Results for User Management Module

Test Number	Steps to Test	Expected Result	Status
1	Any inputs not Fill in form		PASS
2	Enter Taken Email	Sorry, there's already an account from this email !	PASS
3	Input characters except 0-9 in mobile		PASS
4	Input less than 10 digits number		PASS
5	Input greater than 10 digits number	System should prevent to input more than 10 digits	PASS
6	Enter already taken username	User Name Taken!	PASS
7	Enter Correct Username	User Name Available	PASS
8	Enter less than 6 digits number	Please match the requested format.	PASS
9	Enter Incorrect Password	Passwords do not match!	PASS
10	Enter Correct Password	Passwords Matched!	PASS
11	Click to Next Finish Unselect User type	Please select an item in the list.	PASS
12	Input all correct data and Submit		PASS
13	Input all correct data and Submit and Clicked yes		PASS

14	Click the delete button		PASS
16	Search Admin list by their details	Sort out the admin list by the requirement	PASS
17	Select the wanted columns	Sort out the column by the requirement	PASS

Table E. 3: User Management Module Test Result

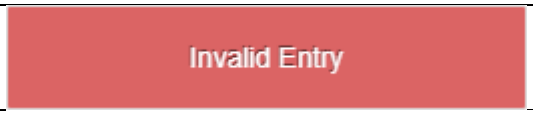
Test Result for Center Management Module

Test Number	Steps to Test	Expected Result	Status
1	Any inputs not Fill in form		PASS
2	Input characters except 0-9 mobile number		PASS
3	Input less than 10 digits number in mobile number		PASS
4	Input greater than 10 digits number	System should prevent to input more than 10 digits	PASS
5	Input all correct data and Submit		PASS
			PASS

6	Input all correct data and Submit and Clicked yes		
7	Click the delete button		PASS
8	Search Center list by their details	Sort out the Center list by the requirement	PASS
9	Select the wanted columns	Sort out the column by the requirement	PASS

Table E. 4: Center Management Module Test Result

Test Result for Student Registration

Test Number	Steps to Test	Expected Result	Status
1	Any inputs not Fill in form		PASS
2	Select input Center	Select Center details from Database	PASS
3	Select input Course	Select Course Details from Database	PASS
4	Enter Already input MIS	MIS Taken!	PASS
5	Enter new MIS	MIS Available	PASS
6	Input alphabetic Characters		PASS
8	Enter correct NIC		PASS

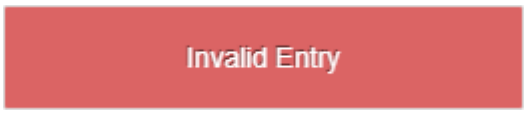
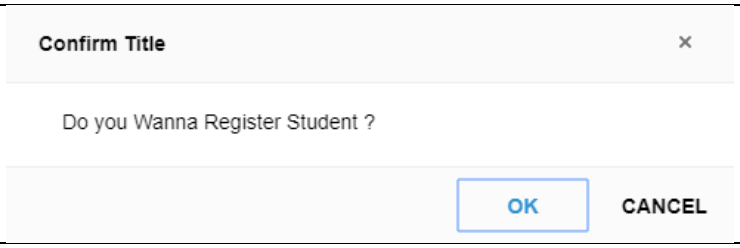
9	Input characters except 0-9		PASS
10	Input all correct data and Submit		PASS
11	Input all correct data and Submit and Clicked yes		PASS
12	Search Student list by their details	Sort out the Student list by the requirement	PASS
13	Select the wanted columns	Sort out the column by the requirement	PASS

Table E. 5: Student Registration Test Result

Test Result for Student Dropout

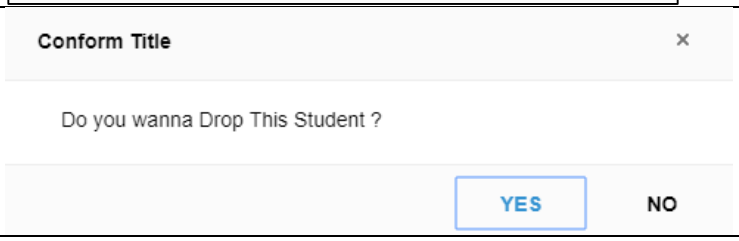
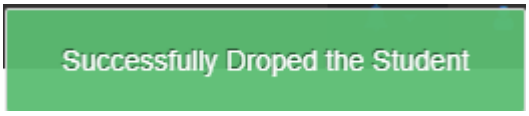
Test Number	Steps to Test	Expected Result	Status
1	Any inputs not Fill in form		PASS
2	Input all correct data and Submit		PASS
3	Input all correct data and Submit and Clicked yes		PASS

Table E. 6: Student Dropout Test Result

Test Result for Add Results

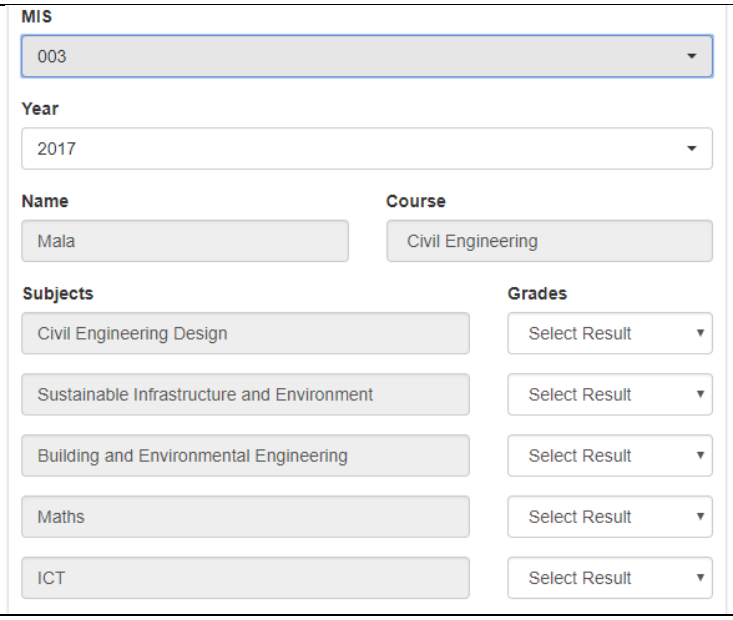
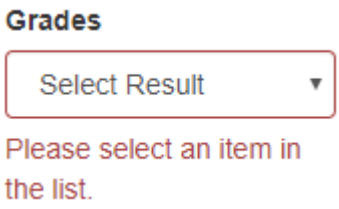
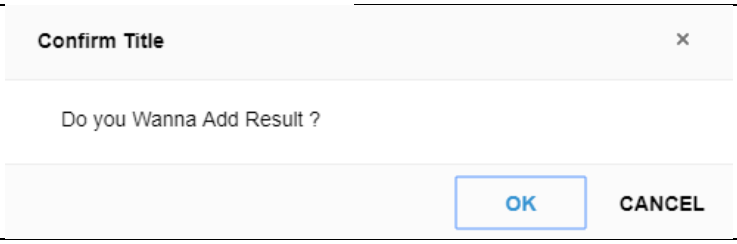
Test Number	Steps to Test	Expected Result	Status
1	Input MIS		PASS
2	Check Year		PASS
3	Leave any grade empty		PASS
4	Input all correct data and Submit		PASS
5	Input all correct data and Submit and Clicked yes		PASS

Table E. 7: Add Result Test Result

Test Result for Gallery

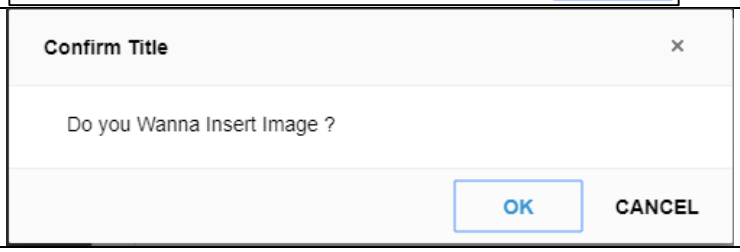
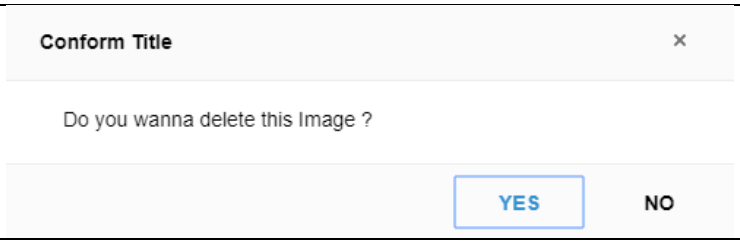
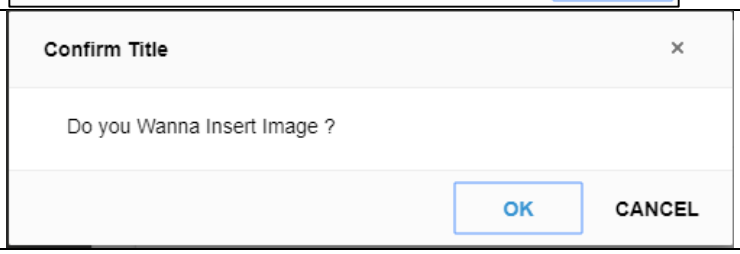
Test Number	Steps to Test	Expected Result	Status
1	Any inputs not Fill in form		PASS
2	Input all correct data and Submit		PASS
3	Input all correct data and Submit and Clicked yes		PASS
4	Click the delete button		PASS

Table E. 8: Gallery Test Result

Test Result for Slideshow

Test Number	Steps to Test	Expected Result	Status
1	Any inputs not Fill in form		PASS
2	Input all correct data and Submit		PASS

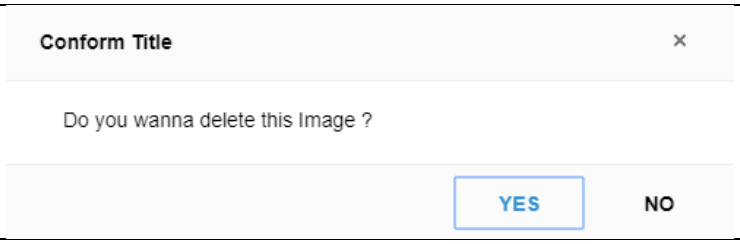
3	Input all correct data and Submit and Clicked yes		PASS
4	Click the delete button		PASS

Table E. 9: Slideshow Test Results

Test Result for User Profile Details Change

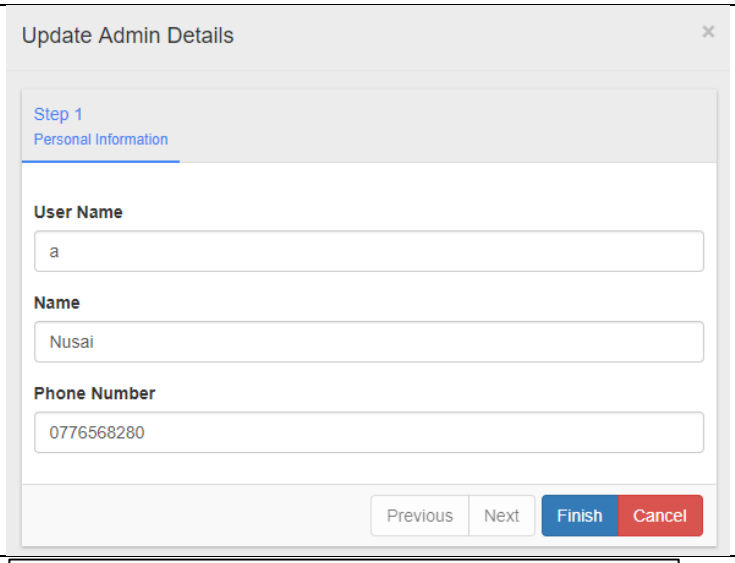
Test Number	Steps to Test	Expected Result	Status
1	Open Model		PASS
2	Leave any foam empty		PASS
3	Enter Existing username	User Name Taken!	PASS

Table E. 10: Add Result Test Result

Test Result for User Profile Details Change

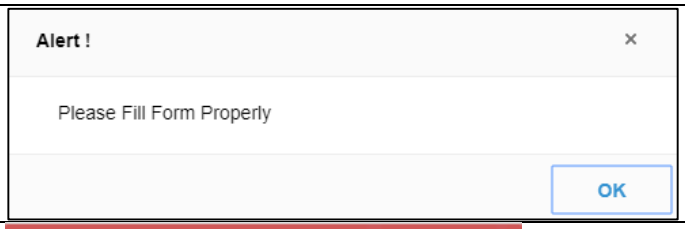
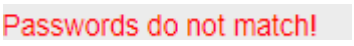
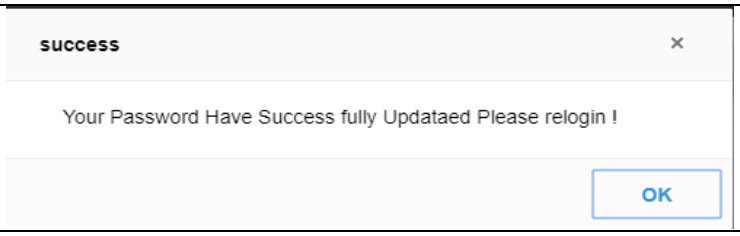
Test Number	Steps to Test	Expected Result	Status
1	Leave any foam empty		PASS
2	Enter wrong old password		PASS
3	Enter less than 10 digits number		PASS
4	Enter Incorrect Password		PASS
5	Enter Correct Password		PASS

Table E. 11: User Profile Password Management Test Result

Test Result for Forgot My Password

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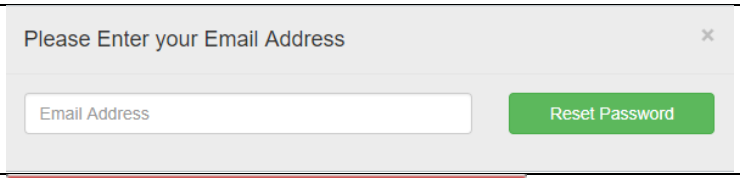
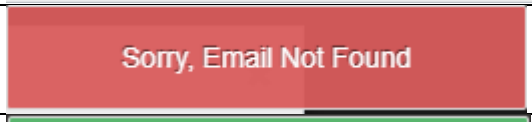
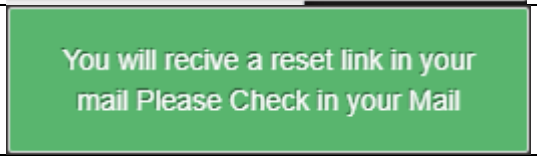
Test Number	Steps to Test	Expected Result	Status
1	Click forgot my password link		PASS
2	Enter wrong old password		PASS
3	Enter Correct Email		PASS

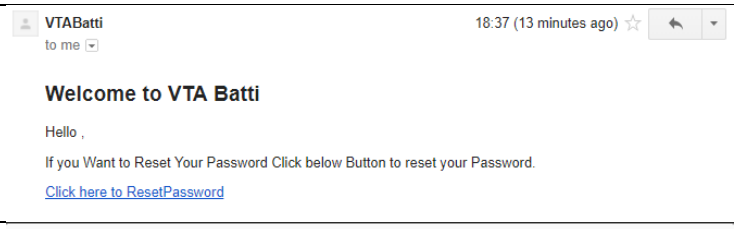
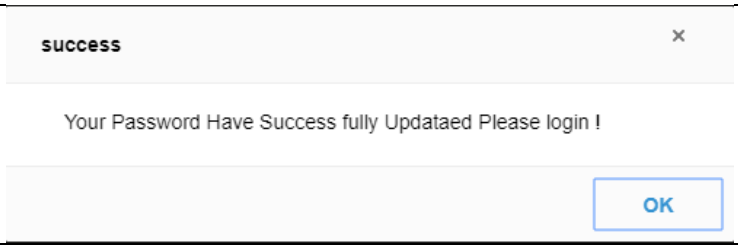
4	Check Mail		PASS
5	Enter New Password		PASS
6	Recheck the same link		PASS

Table E. 12: Password Reset Test Result

Appendix F-Code Listing

Major code fragments for anyone who is interested in referring the functionality of the system are contained in this document. Please refer the CD-ROM for the complete set of codes for all code fragments

Save Centers in the Database

```php
include("../connection.php");


$name=$_POST['inputName'];
$email=$_POST['inputEmail'];
$mobile=$_POST['inputPhone'];
$address=$_POST['inputAddress'];
$latitude=$_POST['inputLatitude'];
$longitude=$_POST['inputLongitude'];

$sql="INSERT INTO xxcenterxx (name,address,email,telephone,latitude,longitude)
values ('$name','$address','$email','$mobile','$latitude','$longitude')";

$result=mysqli_query($con,$sql);


if ($result)
{
    echo "success";
}else{
    echo "fail";
}

```

Figure F. 1 save Centers

Compare Passwords in live

While creating a user account user have to enter their password twice while entering the passwords system automatically compare those passwords matched or mismatched.

```javascript
// Check for Password Match
function checkPasswordMatch(){
    // Assing Textbox values into variable
    var password = $("#inputPassword").val();
    var confirmPassword = $("#inputPassword1").val();

    if (password != "" && confirmPassword != ""){
        // IF 2 Text box password not Empty
       if (password != confirmPassword){
           checkpassword=0;
           $("#divCheckPasswordMatch").html("Passwords do not match!");
           $("#divCheckPasswordMatch").css("color","red");

       }
       else {
           checkpassword=1
           $("#divCheckPasswordMatch").html("Passwords Matched!");
           $("#divCheckPasswordMatch").css("color","green");

       }
    }
    else{
        // IF 2 Text box password Empty clear alert
       checkpassword=0;
       $("#divCheckPasswordMatch").html("");
    }

}
```

Figure F. 2 Compare Passwords

AJAX Function Code Segment

JavaScript and XML illustrate dynamic PHP calling mechanism with numerous functions in this proposed system, all the responses are received into a HTML container.

```
function saverecord(){
    // Wait Message to conform Mail is Sent
    $("#waitCheck").html("Please Wait....");
    var url = $('#myForm').attr('action','saveAdmin.php');
    var data = $('#myForm').serialize();
    console.log(data);

   $.ajax({
        type: 'ajax',
        method: 'POST',
        url: 'saveAdmin.php',
        data: data,
        success: function(Response){

            if (Response.trim()=="success") {
                alertify.success('Successfully Created')
                // Clear All the Values of Form Inputs
                $("#myForm")[0].reset();
                // Clear alert Values
                $("#divCheckUsername").html("");
                $("#divCheckPasswordMatch").html("");
                $("#waitCheck").html("");
            }
            // IF there is no session redirect to login
            else if(Response.trim()=="nosession"){
                location.reload();
            }
            else if(Response.trim()=="msg-not-send"){
                alertify.error('Sorry Email did not Send');
                $("#waitCheck").html("");
            }
            else{
                alertify.error('Sorry Something Gone Wrong');
                $("#waitCheck").html("");
                console.log(Response);
            }
        },
        error: function(){


        }
    });

}
```

Figure F. 3 Ajax Function

Bar Chart Code Segment

Displaying Graphs is really nice way to represent data. Users can easily compared data segment. Graphs is initiated by JavaScript code data of the graphs get from database using PHP.

```php
include '../../connection.php';

  $sql3=" SELECT ce.name,COUNT(sr.mis)
  FROM xxcenterxx ce
  INNER JOIN xxstudentregistrationxx sr
  ON sr.centerid=ce.centerid
  WHERE sr.status='active'
  GROUP BY ce.centerid";

$query3=mysqli_query($con,$sql3);

?>
    <script type="text/javascript">
      Morris.Bar({
        element: 'chart',
        data: [

          <?php
            while ($row=mysqli_fetch_array($query3))
            {
              echo "{ date: '".$row[0]."', value: ".$row[1]." },";
            }
          ?>

        ],
        xkey: 'date',
        resize: true,
        ykeys: ['value'],
        labels: ['Number of Students'],
        grid: true

      });

    </script>

<?php

```

Figure F. 4 bar Chart

Change Password

Users can change their current Password. In order to change their current password they have to type their current password too.

```php
include("../connection.php");
include ('../encry.php');



$id=$_POST['inputId'];
$oldPassword=$_POST['inputOldPassword'];
$password=$_POST['inputPassword'];
$password1=$_POST['inputPassword1'];


// Check IF old password correct
$sql="SELECT password FROM xxadminxx WHERE user_id='$id' ";
$query=mysqli_query($con,$sql);


while ($row=mysqli_fetch_array($query)) {
    // If there a record only one record will shown Because user_id is unique
    $dbpassword=$row[0];
    // Password is Encrpted in  DB so, have to decrypt it,
    $result=mc_decrypt($dbpassword, ENCRYPTION_KEY);

    // Check if Password is Wrong
    if ($result != $oldPassword) {
        echo "wrong-old-password";
    }
    // If old Password is Okay execute Update
    else
    {
        // encrypt new Password
        $encrypted_data = mc_encrypt($password, ENCRYPTION_KEY);

        $sql1="UPDATE xxadminxx SET password='$encrypted_data' WHERE user_id='$id' ";
        $query1=mysqli_query($con,$sql1);

        if ($query)
        {
            echo "success";
        }else{
            echo "fail";
        }

    }
}
```

Figure F. 5 Change old Password

Appendix G-Client Certificate

කුසලතා සංවර්ධන වැඩ හා වෘත්තීය අමාත්‍යාංශය
திறன் அபிவிருத்தி மற்றும் தொழிற்பயிற்சி அமைச்சு
MINISTRY OF SKILLS DEVELOPMNET AND VOCATINOL TRAINING
ශ්‍රී ලංකා වෘත්තීය පුහුණු අධිකාරිය
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ඒ.පී.සී. පාර වන්තාරමූලයි
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06.11.2017

Project Examination Board,

University of Colombo School of Computing (UCSC)

No 221/2A, Dharmapala Mawatha,

Colombo 07

Dear Sir/Madam

LETTER OF CERTIFICATION

This is to certify that Mr. Razik Fareed Nusair Ahamed studied our management operations in our organization and developed a web based management system for us.

I'm glad to say that he created an excellent system. We strongly believe this system will help us to boost our management process.

This certification is issued upon the request of Mr. Razik Fareed Nusair Ahamed.

Thank you,

Yours faithfully,

.....
Training Officer
NVTI
Vantharumoolai

S. A. M. I. Moulana
Training Officer/Officer, In-Charge
National Vocational Training Institute
Vantharamoolai
(Batticaloa District)
Vocational Training Authority

Glossary

AJAX	Stands for Asynchronous JavaScript and XML, Combine collection of Technologies. Running on Client side and helps to develop interactive web applications.
Apache	Secure web server developed by Apache Software foundation
CSS	Stands for Cascading Style Sheets. Use apply styles for Markup languages such as HTML, XML
JavaScript	Use to dynamic web applications. Develop by Netscape
MySQL	One of most popular Database management system can handle big amount of data related to different types
PHP	Stands for PHP is Hypertext Preprocessor. Object oriented supported server side scripting language
RUP	Stands for Rational Unified Process. Iterative software development methodology.
XAMPP	Open Source bundled software package. Include Apache, PHP, MySQL, Perl
JQuery	It is a JavaScript library. It was designed to simplify the client side scripting language.
SQL	Stand for Structured Query Language. Help to retrieve data base details.

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