## 1.1 Company Profile

**Pineapple Innovative Solutions Pvt Ltd.**

Pineapple Innovative Solutions Pvt. Ltd. was started in 2009 by four people willing to provide the "next generation" solutions in the field of Business Intelligence and Knowledge Management. High quality analytics and the knowledge for making business critical decisions have become the need for the day in almost all the industry segments across the globe. Possessing the expertise to provide these services we are focused to make every bit of information much more valuable. With a major focus on these upcoming domains, we also provide solutions like Custom Application Development and Web Marketing to help our client capture and share the information they would want their customers to know.

Apart from the Indian markets, we are targeting upcoming markets like South Africa, Brazil, Middle East, Australia and New Zealand. Not only these, we are ready to take up any assignment across the globe and have the ability to deliver the solution on time. Since inception, the Pineapple Group has been consistently growing larger and stronger providing Business Intelligence solutions in varied domains in various situations.

Pineapple Innovative Solutions Pvt. Ltd. defines, designs and delivers technology-enabled solutions. With a strong technical team backed by a team of domain experts and consultants with varied industry experience, we have designed a unique delivery module guided by our commitment towards the client. Enhanced project collaboration tools and our well-codified, company-wide processes assure consistent, well-planned, measurable and reliable delivery. We have the expertise to deliver solutions that are fast and cost effective, with large scope and visibility.

We at Pineapple Group believe in complete dedication towards client and wish to build a long lasting strategic partnership which will help our client's business grow multifold. We strongly believe in innovation and business excellence. Our team constantly strives to build the best in the industry solutions at a most competitive price. We aim to deliver maximum value to our clients. The core aim of Pineapple is to deliver breakthrough products and services so that our clients enjoy the most needed competitive edge. We deliver the excellence through innovation in thoughts, ideas, business processes and a long lasting partnership with our esteemed clients.

**Our Mission**

"To Become Strategic Client Partner in offering Custom Solutions in Business Intelligence and Knowledge Management areas."

At Pineapple Innovative Solutions Pvt. Ltd., we believe in five core values which are the base of every relationship that we establish with all our stake holders. These are absolutely necessary on the way to achieve our mission and be amongst the most trusted brands in the industry.

- Integrity - We believe that we must conduct the business in complete fairness.We should always be honest and completely transparent. We must be able to stand the test both in good and bad times.

- Excellence - We will always provide best of the breed solutions with highest possible standards and quality considerations. Our service level will always be optimal.

- Responsibility - We strongly believe that we should be fully responsible for our actions and be sensitive to the laws of the land wherever we operate. We aspire to be a complete global organization with excellent employee care and satisfaction. We also believe that the contributions towards humanitarian needs should continue from Pineapple whatever the situation may be.

- Completeness - We have a strong sense of complete client partnership. We believe that the solutions must always satisfy the said and unsaid needs of the clients and make the clients 100% happy. Anything less than complete customer happiness is not acceptable at Pineapple.

- Commitment - We believe in living up to all our propositions and deliver the solutions within the schedule. Building trust by living upto commitments is one of the main practices at Pineapple. We also believe strongly in preserving the nature for generations to come.

We aspire to be the leader in green technologies and providing solutions to help keep the earth beautiful.

With these values in mind our value proposition to all our customers would include.

## 1.2 Existing System

- This system is entirely new system built as per client requirement. This application will be used for internal purpose only.
- In case of paper based exam overheads associated with verification of answers and result processing are huge and prone to errors. Online test series application can easily generate the result of the test within seconds.
- In case of traditional exam, management of examination includes classroom infrastructure, question paper, answer sheets etc. but because of test series application any one can attend the test with the help of internet and electronic devices like desktop or laptop.
- The main goal of this test series application is to provide the practice question papers for the students to improve there academic performance and to avoid the paper and pen work

and work faster as compare to the traditional lengthy process of examination.

- Logistic cost is minimum for online test series as compare to the physical or traditional examination system.
- Traditional examination system is very outdated and time consuming process to conduct because of the paper work activity.
- The admin user of this system can set the question paper as per the student need of practice. Paper setting process for particular student is very user-friendly and available with free test and paid test option.
- Online Test Series Application is more featured and more advance system as compare to the traditional examination management system,because of that positive reason online test series application came into the picture.

## 1.3 Scope of work

**"Test Series Application"** is a web application which is developed for the students for online exams to improve their academic performance. This application will be used for internal purpose only. This application will be tested on Google Chrome and Mozilla Firefox web browsers only.

Followings are the modules and the sub-modules of the application.

1. **User Registration Management –**

This module is available for any visitor of the system.

- Any visitor of the system can get registered to the system via user registration form.

To get register with this system the visitor should require valid e-mail address.

**i.** Log In –

Login is the sub-module of the user registration management. Login module is used to check whether the user is an authorized person to use the system or not.

This way email id entered at the time of registration will be verified and authenticated

-At the time of first login to the system after registration, user will be asked to change his password.

**ii.** Password Retrieval Management –

- This module is available for all the basic users of the system.
- In case user does not remember his password, he can regenerate the password by going to Forgot Password wizard.

- User needs to provide his email id i.e. username, if the email-id exists in registered user list then an automated email will be sent to that email id by the system containing temporary password.
- User can then login using this temporary password and change the same later at his convenience.

The different types of users are –

- **Admin**- A person having full access of the application.
- **Visitor/Basic User**- A person who registered to the system to apply for the online test examination.

## Testing Scope

- User interface of login page (Look & feel)
- Text field's edit ability ( if its accepting text)
- User name : field should accept valid characters (valid/invalid data)
- Password : field should be confidential should show bullets for entered character
- Login Button: should validate entered credentials from database & display appropriate message for invalid entry of credentials.
- Cancel Button: should clear the fields and shift cursor to username text field.
- Forgot Password Link : (in case user forgot password )
- Request response time after login button is clicked.
- To check that after supplying valid credentials login works fine and welcome screen displays.

i) After login to this system correct user name should be display on the welcome screen.

## 2. Test Module

This module is available for basic user and also for admin user.

Test module helps to attend the test to the basic user

Basic user can see the timeline of free and paid tests.

### i) Test Configuration Management

This sub-module is available for Admin User.

- Admin will be able to create and manage the test configurations for the users. This configuration is based on Exam Type + Test Type + Difficulty Level.
- E.g. Yellow Belt + Pre Test + Easy, Green Belt + Post Test + Hard, etc.

- This configuration can be modified at any point of time by Admin.
- It is mandatory that Admin is supposed to select configuration of the test while uploading any test.

ii) Test Schedule Management

This sub-module is available for Admin User.

- Admin will be able to create and manage a test schedule for all the tests.
- While creating a test schedule following information is to be provided:
    - Test name
    - Test configuration name (there can be multiple tests for the same configuration)
    - Start date-time and end date-time
    - Total no. of questions in the test

## Testing Scope

- User Interface for Test module as well as user interface of test configuration management and test schedule management
- Input validations with valid and invalid inputs
- Upload file functionality for PDF file formats
- Date fields – date validations
- Functionality and integration testing of testing module and its sub-modules

## 3. Dashboard Management

- This module is available for Admin User and Basic User Also

- Admin can set information about the test for basic users on dashboard screen- Basic User can get the information after the log in to the test series application on his home screen I .e dashboard.

### Testing scope

- User Interface of the dashboard.
- Functionality of dashboard screen buttons.
- Functionality of Log out button.

## 4. Report Management

- This module is available for Admin User.

- Admin can see the test report as per the user information details , test details ,marks,grades and current situations .

Testing Scope

- UI testing of the report screen
- Select button functionality testing

## 5. Settings

- This module is available for the basic user and for admin user also.

-Basic user can edit the profile information from this module.

- Basic user also can change the valid email id and password with the help of this module.

- Admin user can also change the password with the help of this module.

### Scope of Testing

- User interface
- Password: this field should shows bullets for entered characters.
- Password field should accept the new value when user wants to set new password.

## 1.4 Operating Environment

### Hardware & Software

To run “Test Series Application System” web application, following operational environment is needed.

1. **Server Machine Configuration :**

Hardware Requirement –

Processor: Minimum Dual Core

RAM: 3GB

Hard Disk: 320GB or above

Software Requirement

Windows Server

Database: SQL Server 2008

Other requirement of software: ASP.net,Boost-rap.

## 2. Client Machine Configuration :

**Hardware Requirement:**

Processor: Minimum Dual Core

RAM: 2GB

Hard Disk: 320GB or above

Software Requirement :

Operating System: Windows XP, 7,8

Browsers:Mozilla, Chrome,

Other Application Software: PDF reader, MS-office 2007

Internet/Intranet should be available and both the machines should be configured.

## 2.1 Objectives of the System

i) System will be a web application which user will be able to access from remote location.

ii) The main goal of this system is to provide online questions to the students to improve the performance in academics.

iii) This system provides online test series for any visitor or registered user

iv) The system provides both timelines i.e. paid test series and free test series for the basic users.

v) System is very prompt to show the result of attended test.

vi) Dashboard of system can show the details of test. Dashboard will help to the basic user to see the test schedule date and admin user can update the dashboard for the basic user for test schedule information.

vii) Basic user can register first for the test series application after registration,basic user should go for login screen to get the test series information which provides on dashboard. In test module user can see the free and paid time line of test series to apply for the test.

viii) After applying for the test user can see the instruction page of the test then he can apply for the actual question paper.

ix) After attending the test user can submit the test and get the result with summary on the time line screen of test module.

x) User can apply for the test as per the subject like English Mathematics etc.

## 2.2 User Requirements

- The web application will have a login screen.
- The web based application for online test series examination
- The web application will have page tabs(menus)

  On home page as –

    - Dashboard
    - Test Module
        i) Test Configuration Management
        ii) Test Schedule Management
    - Settings
    - Report

- Dashboard–

  The system will show all the information related to the test series to the basic user it's like a home screen of this application.

  Admin user can see how many users are registered and how many tests are given by them on admin dashboard.

- Test Module –

  With the help of test module basic user can apply for the test

  After submitting the test the user should get the result faster

i) Test Configuration Management –

   Admin can configure the test with the help of this sub-module

   Admin should configure the day,date,time,marks,questions,solution for the particular test.

ii) Test Schedule Management –

Admin can also schedule the test for the users as per the requirements. Like for 4th standard English test or 7th standard mathematics test.

- Settings

  Settings for change password and edit profile information for the basic user and admin user .

- Report

  Report module helps to know the status of the basic users who registered on the system.

  How many users are attended the test

  How many users are not attended the test

  Which users are weak in particular test.

  This kind of information can get in this report module for the admin user.

## 2.3 Detail Description of Technology Used

### .Net Framework 4.0

- The .NET Framework is Microsoft's comprehensive and consistent programming model for building applications that have visually stunning user experiences, seamless and secure communication, and the ability to model a range of business processes.

  The .NET Framework 4 works side by side with older Framework versions. Applications that are based on earlier versions of the Framework will continue to run on the version targeted by default.

  The Microsoft .NET Framework 4 provides the following new features and improvements:

- Improvements in Common Language Runtime (CLR) and Base Class Library (BCL)
    - Performance improvement including better multicore support, background garbage collection, and profiler attach on server.
    - New memory mapped file and numeric types.
    - Easier debugging including dump debugging, Watson Mini-dumps, mixed mode debugging for 64 bit and code contracts.
    - For a comprehensive list of enhancements to CLR and BCL go here.

- Innovations in the Visual Basic and C# languages, for example statement lambdas, implicit line continuations, dynamic dispatch, and named/optional parameters.
- Improvements in Data Access and Modeling
    - The Entity Framework enables developers to program against relational databases using .NET objects and Language Integrated Query (LINQ). It has many new features, including persistence ignorance and POCO support, foreign key associations, lazy loading, test-driven development support, functions in the model, and new LINQ operators. Additional features include better n-tier support with self-tracking entities, customizable code generation using T4

templates, model first development, an improved designer experience, better performance, and pluralisation of entity sets. For more information gohere.

- WCF Data Services is a component of the .NET Framework that enables you to create REST-based services and applications that use the Open Data Protocol (O-Data) to expose and consume data over the Web. WCF Data Services has many new features, including enhanced BLOB support, data binding, row count, feed customization, projections, and request pipeline improvements. Built-in integration with Microsoft Office 2010 now makes it possible to expose Microsoft Office

SharePoint Server data as an O-Data feed and access that data feed by using the WCF Data Services client library. For more information go here.

- Enhancements to ASP.NET
  - More control over HTML, element IDs and custom CSS that make it much easier to create standards-compliant and SEO-friendly web forms.
  - New dynamic data features including new query filters, entity templates, richer support for Entity Framework 4, and validation and templeting features that can be easily applied to existing web forms.

- Web forms support for new AJAX library improvements including built-in support for content delivery networks (CDNs).
- For a comprehensive list of enhancements to ASP.NET go here.

- Added support for Windows 7 multi-touch, ribbon controls, and taskbar extensibility features.
- Added support for Surface 2.0 SDK.
- New line-of-business controls including charting control, smart edit, data grid, and others that improve the experience for developers who build data centric applications.
- Improvements in performance and scalability.

- Visual improvements in text clarity, layout pixel snapping, localization, and interoperability.
- For a comprehensive list of enhancements to WPF go here.

- Improvements to Windows Workflow (WF) that enable developers to better host and interact with workflows. These include an improved activity programming model, an improved designer experience, a new flowchart modeling style, an expanded activity palette, workflow-rules integration, and new message correlation features. The .NET Framework 4 also offers significant performance gains for WF-based workflows. For a comprehensive list of enhancements to WF go here.

- Improvements to Windows Communication Foundation (WCF) such as support for WCF Workflow Services enabling workflow programs with messaging activities, correlation support. Additionally, .NET Framework 4 provides new WCF features such as service discovery, routing service, REST support, diagnostics, and performance. For a comprehensive list of enhancements to WCF go here.

- Innovative new parallel-programming features such as parallel loop support, Task Parallel Library (TPL), Parallel LINQ (PLINQ), and coordination data structures which let developers harness the power of multi-core processors.

## IIS Server

Internet Information Services (IIS, formerly Internet Information Server) is an extensible web server created by Microsoft for use with Windows NT family.[2] IIS
supports HTTP,HTTPS, FTP, FTPS, SMTP and NNTP. It has been an integral part of the Windows NT family since Windows NT 4.0, though it may be absent from some editions (e.g. Windows XP Home edition). IIS is not turned on by default when Windows is installed. The IIS Manager is accessed through the Microsoft Management Console or Administrative Tools in the Control Panel IIS(Internet Information Server) is a group of Internet servers (including a Web or Hypertext Transfer Protocol server and a File Transfer Protocol server) with additional capabilities for

Microsoft's Windows NT and Windows 2000 Server operating systems. IIS is Microsoft's entry to compete in the Internet server market that is also addressed by Apache, Sun Microsystems, O'Reilly, and others. With IIS, Microsoft includes a set of programs for building and administering Web sites, a search engine, and support for writing Web-based applications that access databases. Microsoft points out that IIS is tightly integrated with the Windows NT and 2000 Servers in a number of ways, resulting in faster Web page serving.

**SQL Server 2008**

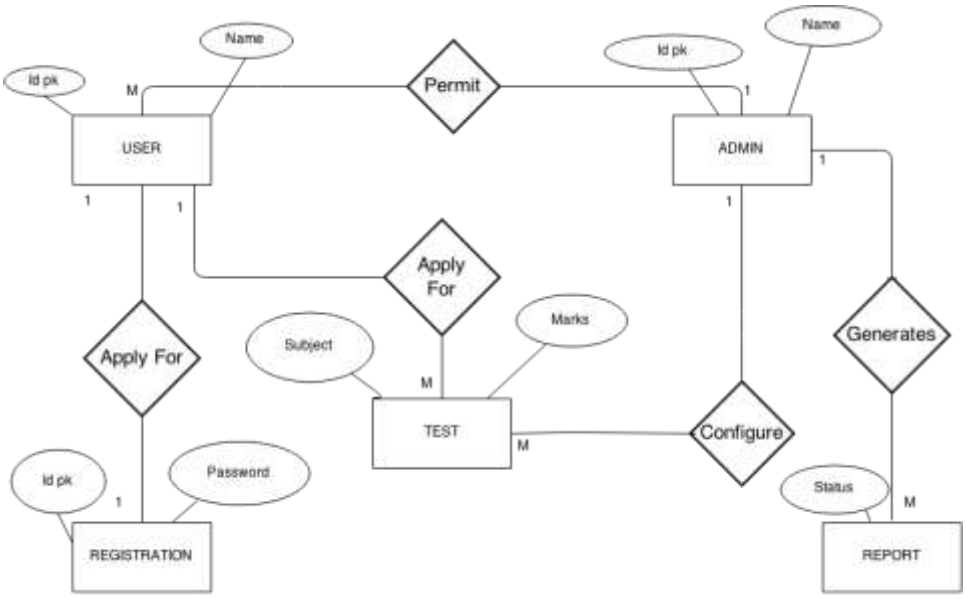
Microsoft SQL Server 2008 Express is a powerful and reliable data management system that delivers a rich set of features, data protection, and performance for embedded application clients, light Web applications, and local data stores. Designed for easy deployment and rapid prototyping, SQL Server 2008 Express is available at no cost, and you are free to redistribute it with

applications. It is designed to integrate seamlessly with your other server infrastructure investments. For more information about SQL Server Express, including other versions and downloadable components now available,

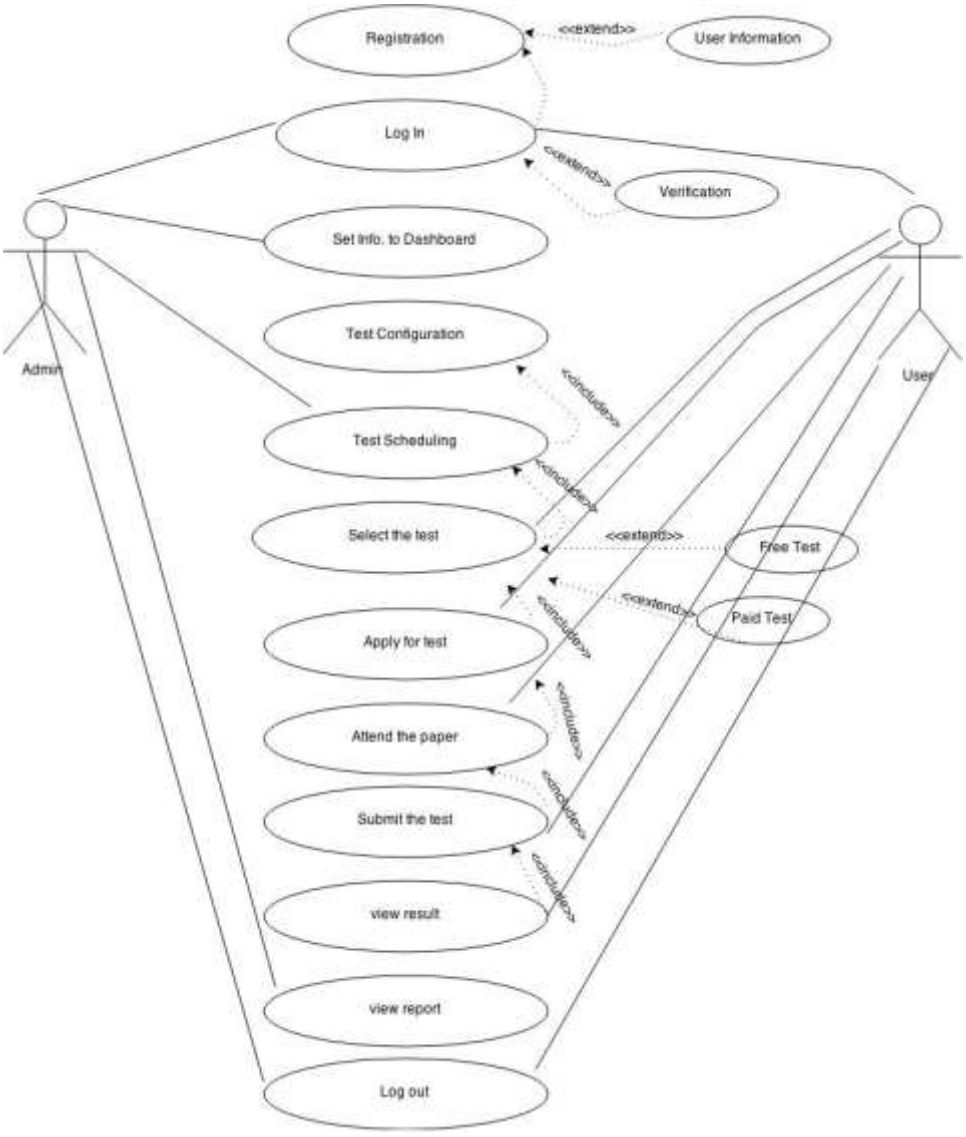
## HTML and CSS

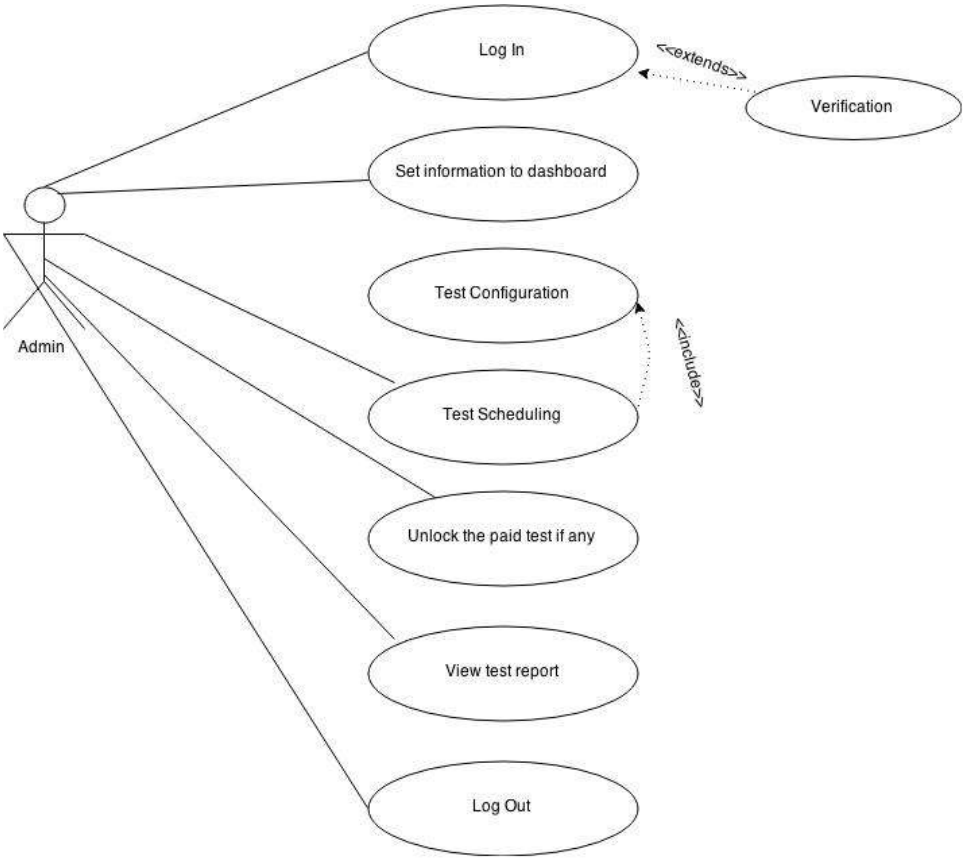
CSS is independent of HTML and can be used with any XML-based markup language. The separation of HTML from CSSmakes it easier to maintain sites, share style sheets across pages, and tailor pages to different environments. This is referred to as the separation of structure (or: content) from presentation.

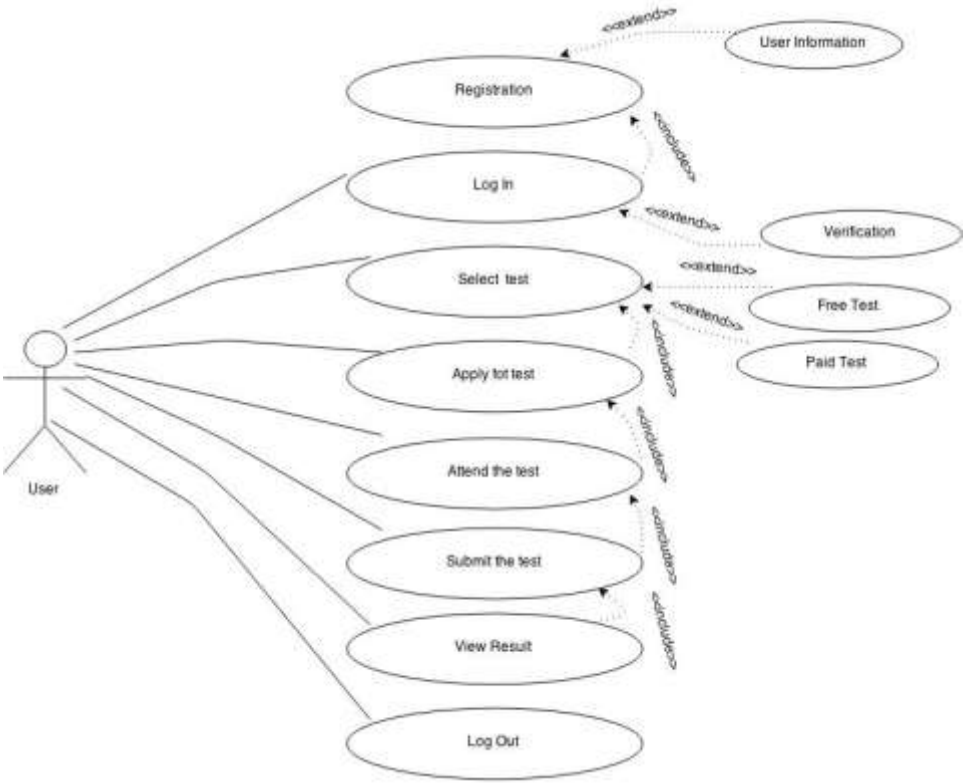
## 3.1 Entity Relationship Diagram



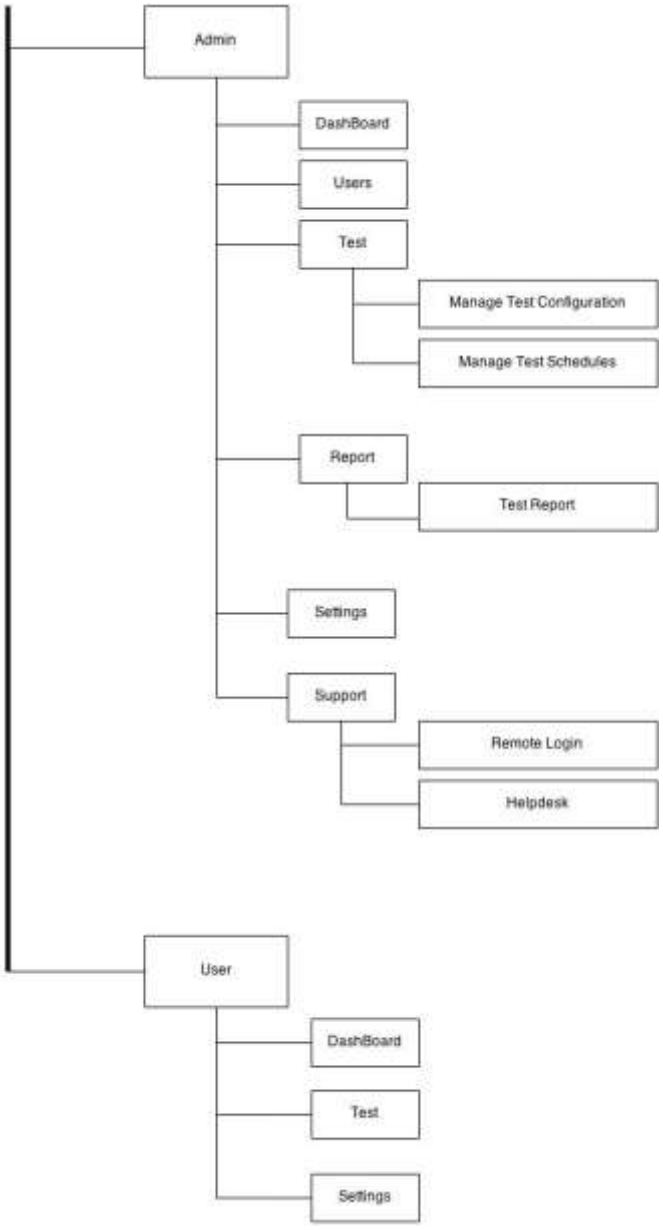
## 3.4 Use Case Diagrams



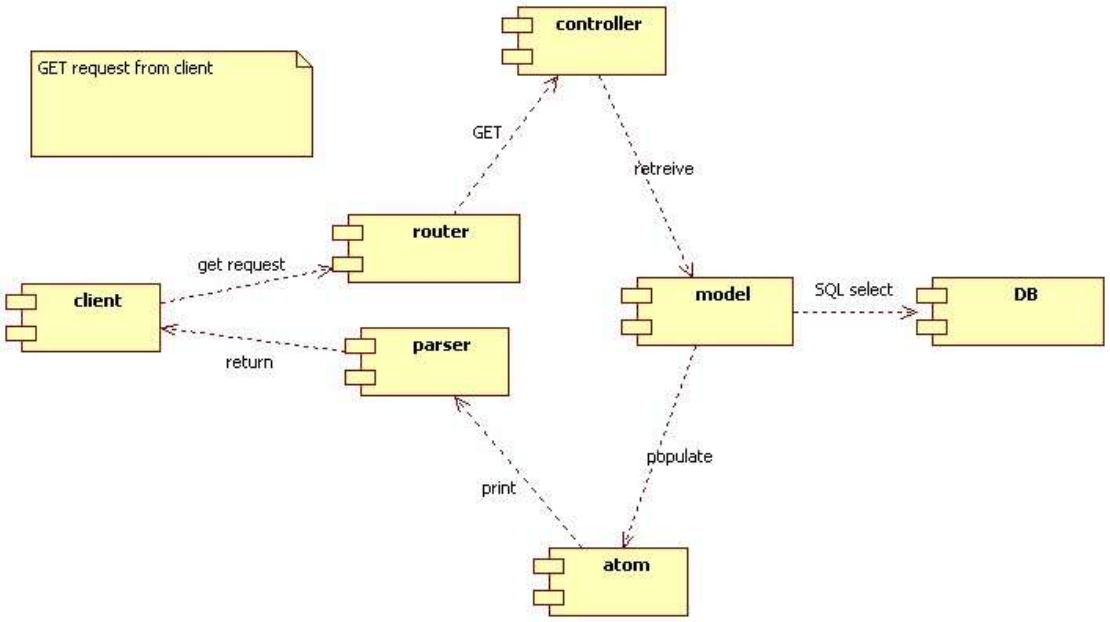

Log In
<<extends>>
Verification
Set information to dashboard
Test Configuration
<<include>>
Admin
Test Scheduling
Unlock the paid test if any
View test report
Log Out


User Information
Registration
Log In
Verification
Select test
Free Test
Paid Test
Apply tot test
Attend the test
Submit the test
View Result
Log Out
User

## 3.5 Module Hierarchy Diagram



## 3.6 Component Diagram



## 3.7Testing Strategies and Test Plan

(I) Validation and Verification

(II) Defect Lifecycle for project

**Test Series Application**

### A. Introduction

- Test Series Application is entirely new system built as per client requirement. This application will be used for internal purpose only. In case of paper based exam overheads associated with verification of answers and result processing are huge and prone to errors. Online test series application can easily generate the result of the test within seconds. The main goal of this test series application is to provide the practice question papers for the students to improve their academic performance and to avoid the paper and pen work.

Following modules are integrated into Test Series Application system:

| | |
|---|---|
| **Core Functionalities** | Test Series Application |
| | - To Configure the test |
| | - To Schedule the test |
| | - To Attend the test |
| | |
| **Reporting and Notification** | Reporting |
| | - User Registration Notification |
| | - Password Retrieval Notification |
| | - Test Report |
| | - Helpdesk Notification |
| | |
| **Other Functionality** | - Settings |
| | To edit the password and personal information. |

**Objective of Testing**

The Goal of testing IFMS is to validate the core functionalities and other functionalities such as reporting, notifications, search etc. The main objective of testing is to find defects in the developed system in order to gain quality in the system

This document mentions the strategy and approach to test the IFMS system. All the modules need to be tested thoroughly for the respective functional requirements mentioned in the section below.

**B. Features to be tested**

Functional UI testing for Core functionalities Registration Management Module, Login Module, Test module, Report Module and Settings.

| Functional Requirement | Functionality Details | Comments |
|---|---|---|
| 1.Registration Management | 1.1 Registration to attempt the test for visitor or new user | For Basic User Only |
| 2. Login | 2.1 View Test Information<br>2.2 Apply For Test | |
| 3.Test<br>i) Test Configuration Management<br><br>ii) Test Schedule Management | 3.1 Create Test<br>3.2 Schedule Test | For Admin Only |
| 4.Report Management | 4.1 View Test Report | For Admin Only |
| 5. Settings | 5.1 Edit Personal Information<br><br>5.2 Edit Password<br><br>5.3 Edit Email ID | |

## C. Feature not to be tested

Testing non-functional characteristics

[Performance/Load/Stress] of the system is out of scope

Other features to be fill in after checking with development team about out the features they have not included in the development.

## D. Assumptions

a] Requirement is Signed off

b] Functional requirement document is Signed off

c] Designed document is prepared and signed off

d] Latest build of the code is deployed into testing environment

## E. Risk Analysis

| Risk Id | Risk | Impact | Mitigation Plan | Contingency Plan |
|---|---|---|---|---|
| RSK_1 | Change requests during late phases of | Schedule slippage | Thorough review of requirement documents | Risk Based Testing approach to cover most |

| | | | | |
|---|---|---|---|---|
| | project | | during requirement phase & sign off by client on the same | important functionalities |
| RSK_2 | Unit testing not done | System testing effort will be more than estimation due to defects from code error | Unit testing completion condition included in Entry Criteria of System Testing | System testing timeline to be increased to accommodate testing of defects [program level] leaked from dev to testing phase |
| RSK_3 | Delay in code deployment in testing environment | There will be schedule slippage due to timeline not followed by developer | Daily checkpoint placed to measure the progress of development Appropriate control action in place to handle the delay | Testing will start in phases for the completed modules instead of one single build. |

Think of any other risks and write in the above table.

## F. Test Strategy & Approach

1. There will be three levels of testing, unit testing, Integration testing and system testing

    - **Unit Testing**

      Not applicable for this project testing scope

    - **Integration Testing**

      After the modules were ready and tested they were interconnected according to
their functionality. A bottom up approach for integrating the various modules was followed. Care was taken for the following things:

- The compatibility of the modules in their input parameters and return values.

- The correctness of the overall system architecture being realized
    - Any manipulation of the data in the interfaces
    - The effectiveness of the combined modules.

- **System test**

  The system tests will focus on the behavior of this system.

  A Black Box approach will be used to test the system.

  The test cases covering the user requirementswill be executed through the system to observe its behavior.

    - All the testing will happen manually
    - Defects will be tracked till closure
    - Defect tracking will be done using excel worksheet.

## G. Entry / Exit Criteria

Entry Criteria:

1. Test cases written and are signed off by Team Leader
2. Test data created
3. Code deployed into testing environment
4. Unit testing completed and defects are fixed

Exit Criteria:

1. 100% Functional testing coverage for all the above listed requirement
2. No sev1 defect open  in the testing environment

## H. Test Deliverables

1. Test Plan document
2. Test Condition, Test cases document
3. Test Data identification and document
4. Test results document
5. Test case Execution Log document
6. Defect  Metrics
7. Root causing analysis
8. Defect trends

## I. Roles & Responsibilities

| Role | Tasks Assigned | Backup | Status | Comment |
|---|---|---|---|---|
| Project Manager | - Project kick off meeting<br>- Project staffing<br>- Estimation<br>- Team formation<br>- Development Monitoring | PL | | |
| Test Manager | - Estimation for testing efforts<br>- Test team formation<br>- Test Plan preparation<br>- Reviews<br>- Ownership for testing deliveries | TL | | |
| Client Manager | - Requirement documents<br>- Queries resolution<br>- Follow-up on sow signoff<br>- Requirement freeze<br>- Acceptance test planning<br>- Final Sign off on testing | Product Manager from client side | | |
| Project Lead | - Assist project manager<br>- Reviews | developer | | |

| | | | | |
|---|---|---|---|---|
| | - Preparation of unit test plan<br>- Build deployment in testing environment<br>- Defect tracking<br>- Sign off on Unit & Integration testing | | | |
| Developer | - Design document preparation<br>- Coding<br>- Code review<br>- Debugging<br>- Unit testing | PL | | |
| Tester | - Requirement gathering<br>- Test cases preparation<br>- Test execution<br>- Reviews<br>- Defect logging<br>- Retesting<br>- Regression testing | TL | | |
| Test Lead | - Contribute in test plan preparation<br>- Reviews<br>- Testing task allocation among test team<br>- Defects review | Tester | | |

| | | | | |
|---|---|---|---|---|
| | - Test result review<br>- Sign off on testing | | | |

## J. Test Environment

The following elements are required to support the overall testing effort at all levels within the PMS project:

A. Access to both the development and production systems for development, data acquisition and testing.

B. A communications line to the mailbox facility.

C. An installed and functional copy of all the Test Series Application modules

D. Google Chrome, Mozilla Firefox browser installed on machines.

E. Access to the master control tables (data bases) for controlling the production/testing environment on both production and development systems.

Need couple of more points here….

## K. Communication Approach

- The test team will meet once every two days to evaluate progress to date and to identify error trends and problems as early as possible. The test team leader will meet with development and the project manager once every two days as well. These two meetings will be scheduled on different days. Additional meetings can be called as required for emergency situations.
- Measures and Metrics
    - The following information will be collected by the Development team during the Unit testing process. This information will be provided to the test team at program turnover as well as be provided to the project team on a biweekly basis.
        - Defects by module and severity.
        - Defect Origin (Requirement, Design, Code)

    - Time spent on defect resolution by defect, for Critical & Major only. All Minor defects can be totaled together.
- The following information will be collected by the test team during all testing phases. This information will be provided on a alternate day basis to the test manager and to the project team.
    - Defects by module and severity.
    - Defect Origin (Requirement, Design, Code)
    - Time spent on defect investigation by defect, for Critical & Major only. All Minor defects can be totaled together.
    - Number of times a program submitted to test team as ready for test.

- Defects located at higher levels that should have been caught at lower levels of testing.

**L. Test Tools**

Not applicable for this project testing scope

**M. Signoff /Approval**

Signature : _____

Name : _____

Designation : _____

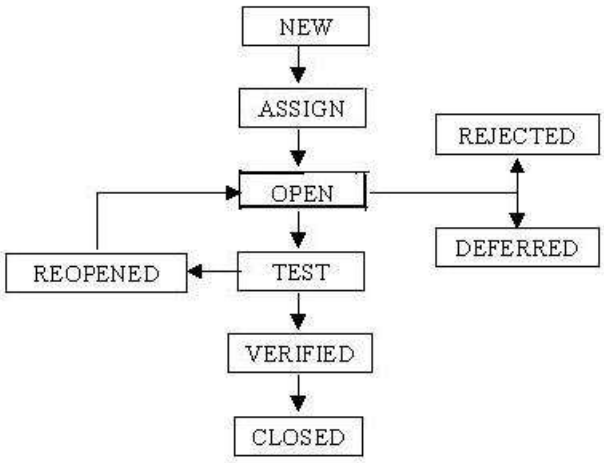
Date: _____

Place: _____

## 3.7 (II) Defect Lifecycle for project

Defect life cycle is a cycle which a defect goes through during its lifetime. It starts when defect is found and ends when a defect is closed, after ensuring its not reproduced. Defect life cycle is related to the bug found during testing.

The bug has different states in the Life Cycle. The Life Cycle of the bug can be shown diagrammatically as follow:



Bug or defect life cycle includes following steps or status:

1. **New** – When the bug is identified and logged in bug tracking tool for the first time, its state will be " New"

2. **Open/Closed -** After a QA has posted a bug, the QA lead validates the bug. If bug is valid then he changes the state as "open" and if the bug is invalid then the lead changes its state to "closed"

3. **Assign -** After QA lead changes the state as "open", he assigns the bug to corresponding developer or developer team lead and the bug status changed to "assign"

4. **Rejected** – If the developer feels that the bug is not valid or it has some technical limitations and cannot be fixed he rejects the bug . He changes the state of the bug to "rejected"

5. **Deferred** – If the development team lead decides to fix the bug in next release due to lack of time or the priority of the bug is low then he changes the state of bug to “deferred”

6. **In test** – Once the developer fixes the bug, he assigns the bug to the testing team for the next round of testing. Before that he changes the state bug to “in test”. It specifies that the bug has been fixed and is released to testing team.

7. **Verified** – Once the bug is fixed and the status is changed to “in test”, the tester tests the bug. If the bug is not reproducible in the software, he changes the status to “verified”

8. **Responded** - Once the bug is fixed and the status is changed to “in test”, the tester tests the bug. If the bug

is reproducible in the software, he changes the status to “responded”.

9. **Closed** - After the bug status is changed to “rejected” or “verified” the QA lead verifies the comments added by the development or testing team. When he is satisfied with the comments he changes the state to “closed”.

**In Test Series Application System –**

An Excel file as a Bug Sheet is shared via Google drive via Gmail, which can be visible to Developer, Tester, Test Lead and Project Lead.

Defect Life Cycle used for Test Series Application is as follows –

1) New – Tester reports bugs in the shared bug sheet with severity.

2) Test Lead verifies that defects & changes its status to OPEN if it is a bug or NOT a BUG then MI or DUPLICATE if it is previously reported or DEFFERRED in case of not considered in this build.

3) Developer has access of bug sheet, so developer starts to resolve the reported open bugs as per the assigned severities and priorities. When developer fixes any issues, the status was changed to RESOLVED & the corresponding bug row made colored in high Gray color, so that tester will come to know which bugs are resolved and need retesting.

4) Tester will retest & regress for the resolved issue & changes status as

   CLOSED – If issue is successfully resolved with no impact on other functionality.

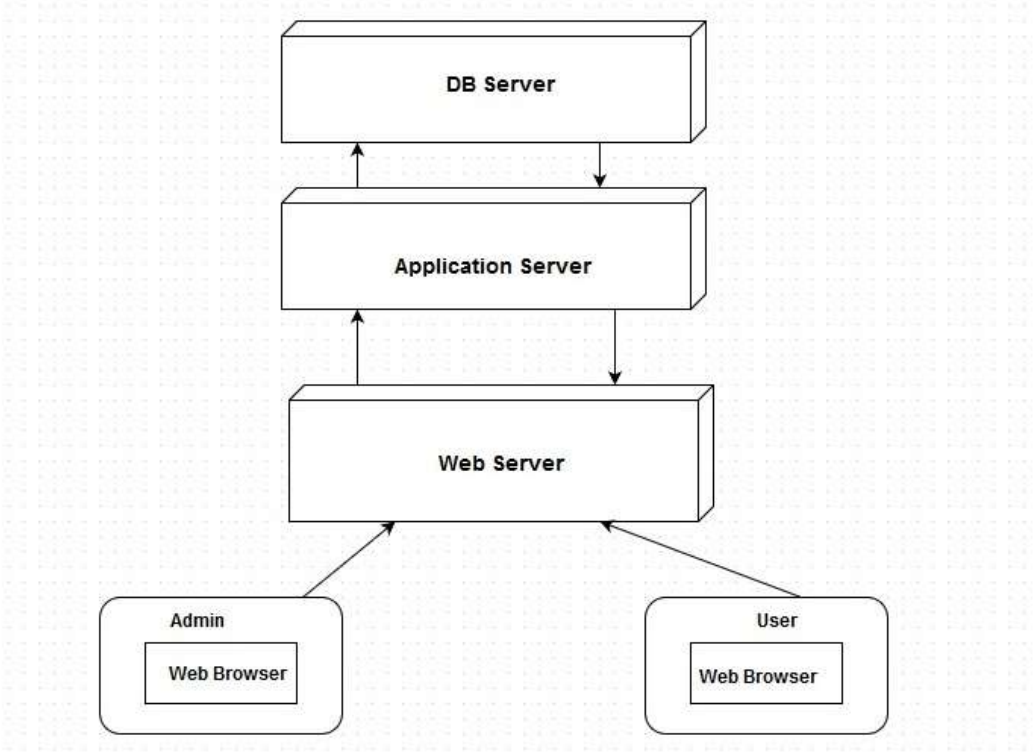
RESPONDED – If issue is not resolved properly or changes caused for bugs in other modules.

5) When status becomes CLOSED – Defect life cycle stops there & the defects is made colored as Green.

6) When status is updated as RESPONDED then step 2 onwards followed and the defects is made colored as Orange.

7) At the end, all bugs will be retested to verify that there is no major bugs are remain.

## 3.8 Deployment Diagram



## 3.9 Module Specification

**"Test Series Application"** is a web application which is developed for the students for online exams to improve their academic performance. This application will be used for internal purpose only. This application will be tested on Google Chrome and Mozilla Firefox web browsers only.

Followings are the modules and the sub-modules of the application.

1. **User Registration Management –**

This module is available for any visitor of the system.

- Any visitor of the system can get registered to the system via user registration form.

To get register with this system the visitor should require valid e-mail address.

i) Log In –

Login is the sub-module of the user registration management. Login module is used to check whether the user is an authorized person to use the system or not.

This way email id entered at the time of registration will be verified and authenticated.

-At the time of first login to the system after registration, user will be asked to change his password.

ii) Password Retrieval Management –

- This module is available for all the basic users of the system.

- In case user does not remember his password, he can regenerate the password bygoing to Forgot Password wizard.

- User needs to provide his email id i.e. username, if the email id exists in registered

User list then an automated email will be sent to that email id by the system containing a temporary password.

- User can then login using this temporary password and change the same later at his convenience.

The different types of users are –

- Admin - A person having full access of the application.
- Visitor/Basic User - A person who registered to the system to apply for the online test examination.

Testing Scope

- User interface of login page (Look & feel)
- Text field's edit ability ( if its accepting text)
- User name : field should accept valid characters (valid/invalid data)
- Password : field should be confidential should show bullets for entered character

- Login Button: should validate entered credentials from database & display appropriate message for invalid entry of credentials.
- Cancel Button : should clear the fields and shift cursor to User name text field
- Forgot Password Link : (in case user forgot password )
- Request response time after login button is clicked.
- To check that after supplying valid credentials login works fine and welcome screen displays
- After login to this system correct user name should be display on the welcome screen.

## 2. Test Module

This module is available for basic user and also for admin user.Test module helps to attend the test to the basic user Basic user can see the timeline of free and paid tests.

i) Test Configuration Management

This sub-module is available for Admin User.

- Admin will be able to create and manage the test configurations for the users. This configuration is based on Exam Type + Test Type + Difficulty Level.
- E.g. Yellow Belt + Pre Test + Easy, Green Belt + Post Test + Hard, etc.
- This configuration can be modified at any point of time by Admin.
- It is mandatory that Admin is supposed to select configuration of the test whileuploading any test.

ii) Test Schedule Management

This sub-module is available for Admin User.

- Admin will be able to create and manage a test schedule for all the tests.

- While creating a test schedule following information is to be provided:

- Test name
- Test configuration name (there can be multiple tests for the same configuration)
- Start date-time and end date-time
- Total no. of questions in the test

Testing Scope

- User Interface for Test module as well as user interface of test configuration management and test schedule management

- Input validations with valid and invalid inputs
- Upload file functionality for PDF file formats
- Date fields – date validations
- Functionality and integration testing of testing module and its sub-modules

3. **Dashboard Management**

- This module is available for Admin User and Basic User Also

- Admin can set information about the test for basic users on dashboard screen

- Basic User can get the information after the log in to the test series application on his home screen I .e dashboard.

Testing scope

- User Interface of the Dashboard.
- Functionality of buttons available on the Dashboard.

**4. Report Management**

- This module is available for Admin User.

- Admin can see the test report as per the user information details , test details, marks, grades and current situations .

Testing Scope

- User Interface of the screen (alignment etc.)
- Functionality of drop down box
- Functionality of search box

**5. Settings**

- This module is available for the basic user and for admin user also.

-Basic user can edit the profile information from this module.

- Basic user also can change the valid email id and password with the help of this module.

- Admin user can also change the password with the help of this module.

Testing Scope

- User interface
- password : this field should shows bullets forentered characters
- Current password : current password field should shows bullets
- New Password: this field should accept the new value.

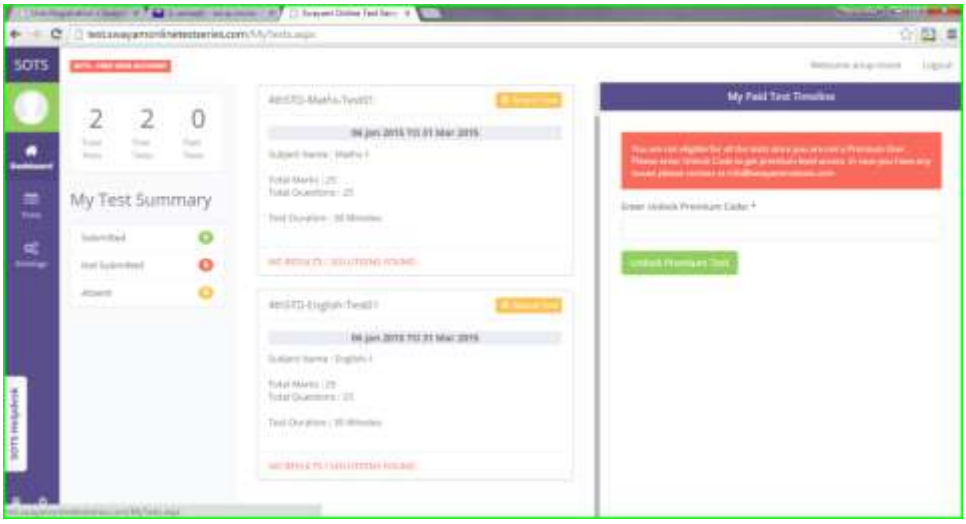
- Re-type password : new password and re-type password field should match
- Save Information Button: This button will accept the new value of password and it will take care of new values of password.

1. **User Registration Screen**

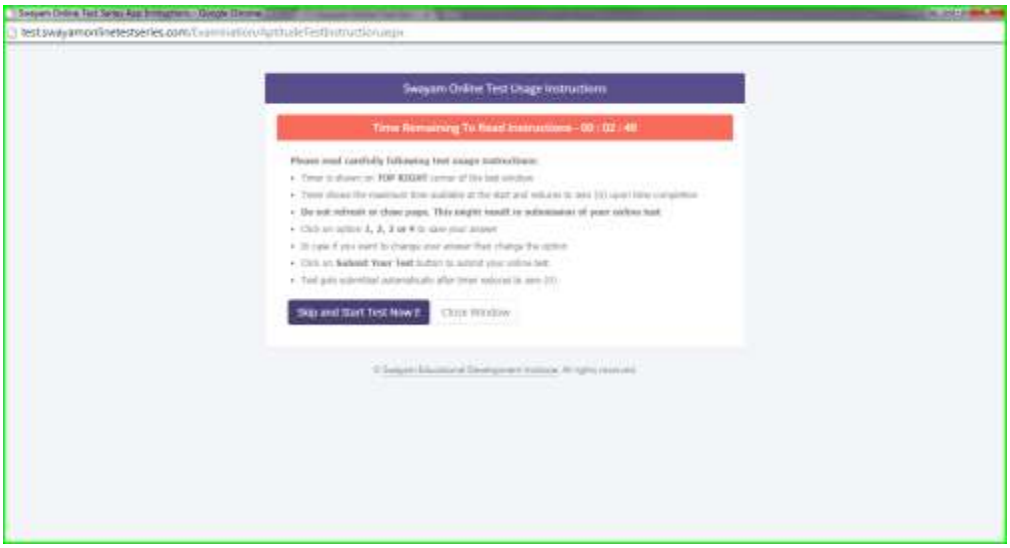

2. **Log In Screen**

## 3. Dashboard Screen (Home Page)

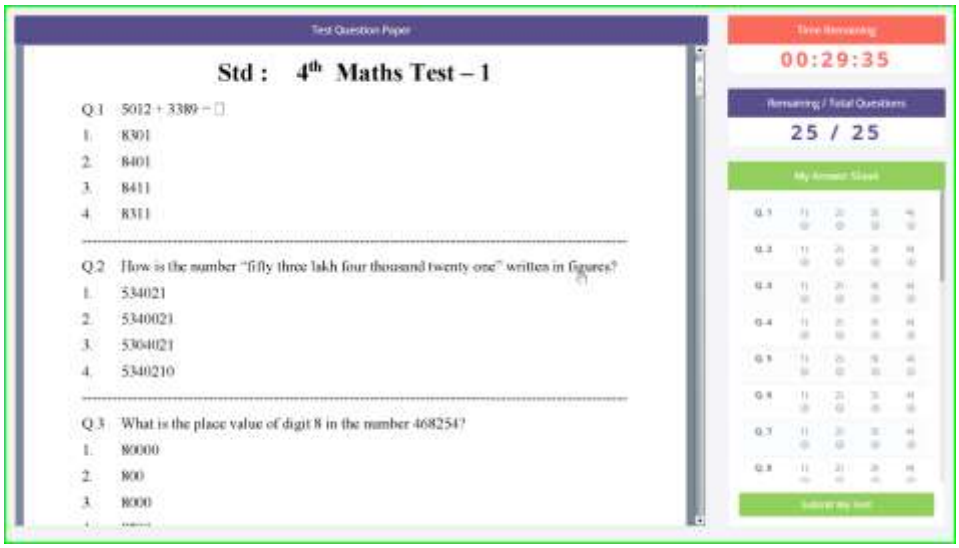

## 4. Test Timeline Screen



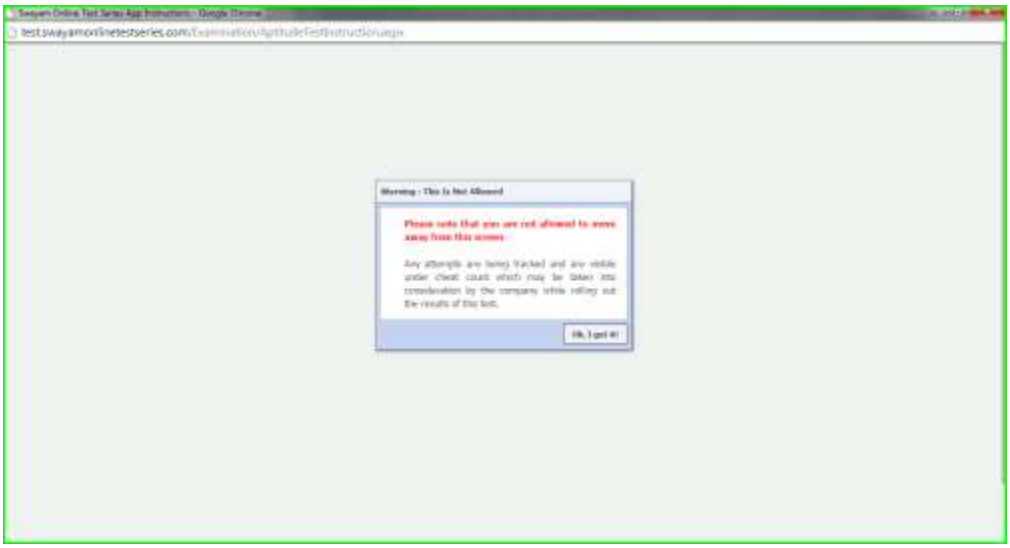
## 5. Test Attend Screen



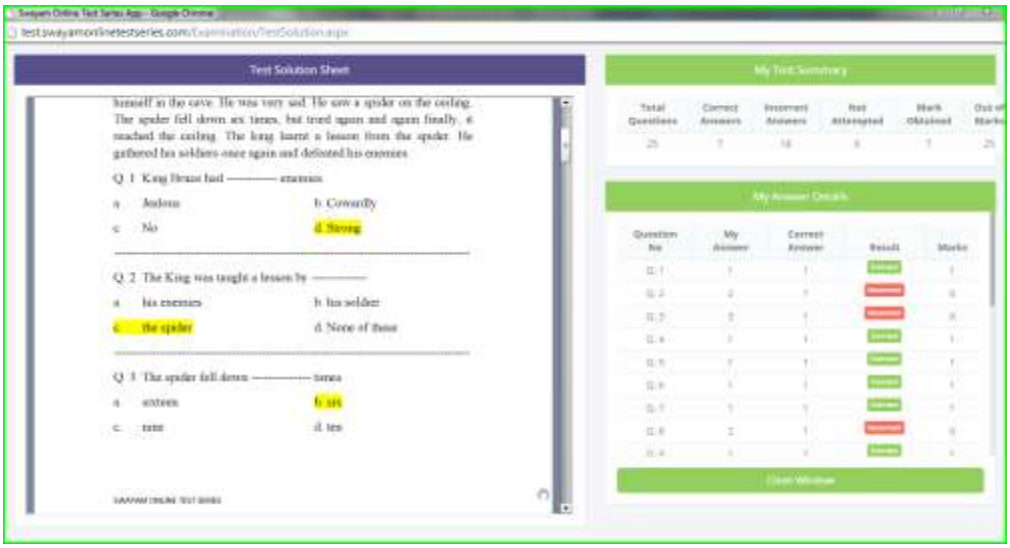

## 6. Test Question Paper Screen



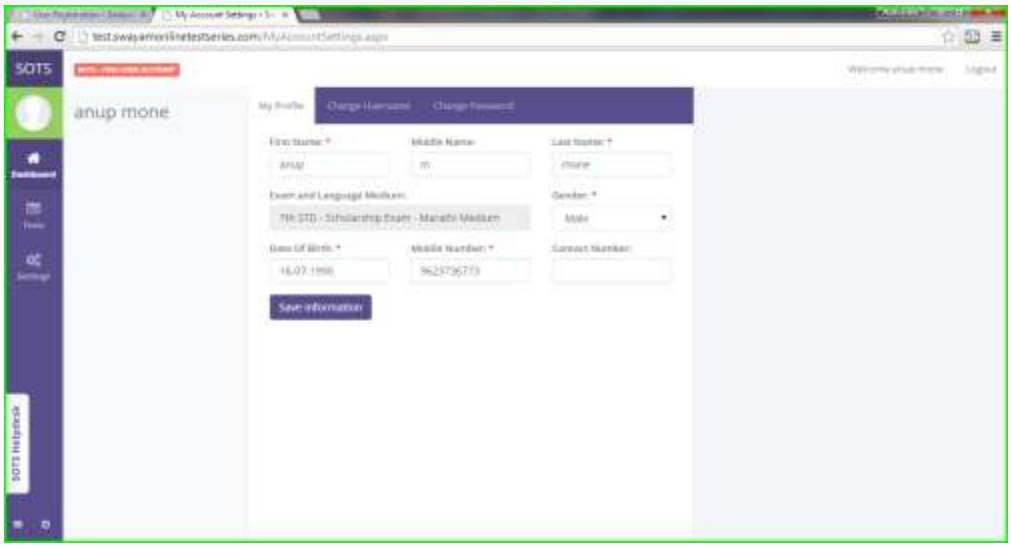
## 7. Warning Screen



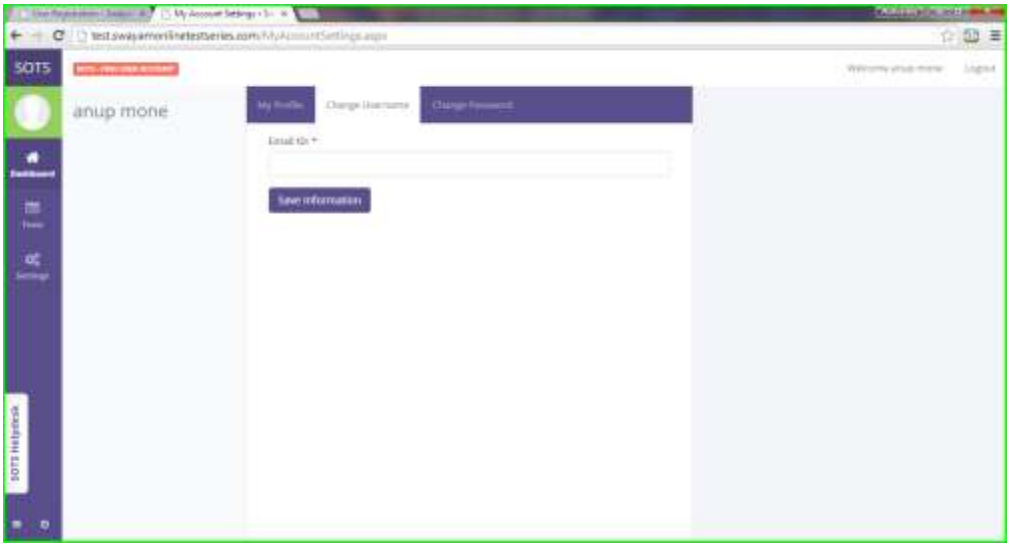
## 8. Test Summary Screen



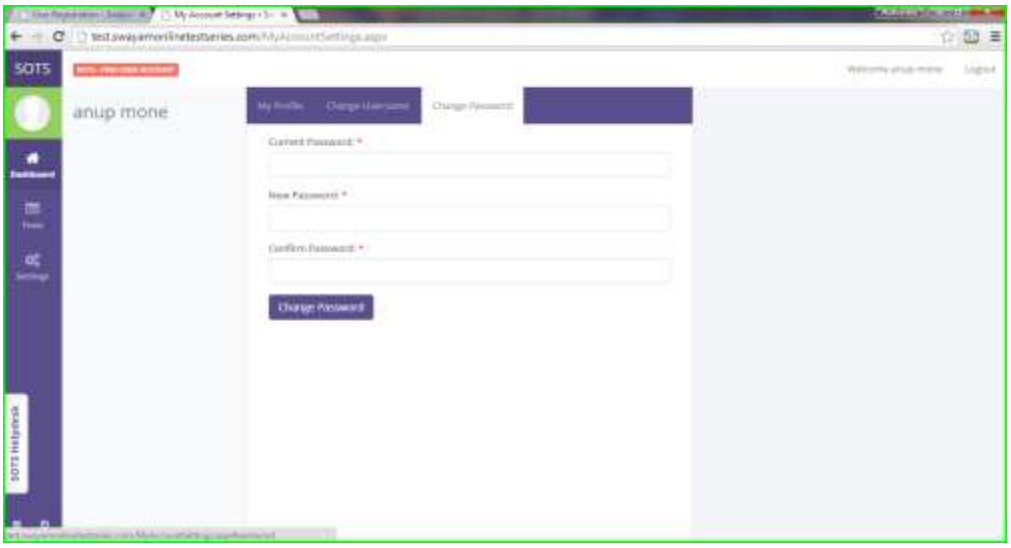
## 9.Settings Screen (For My Profile)



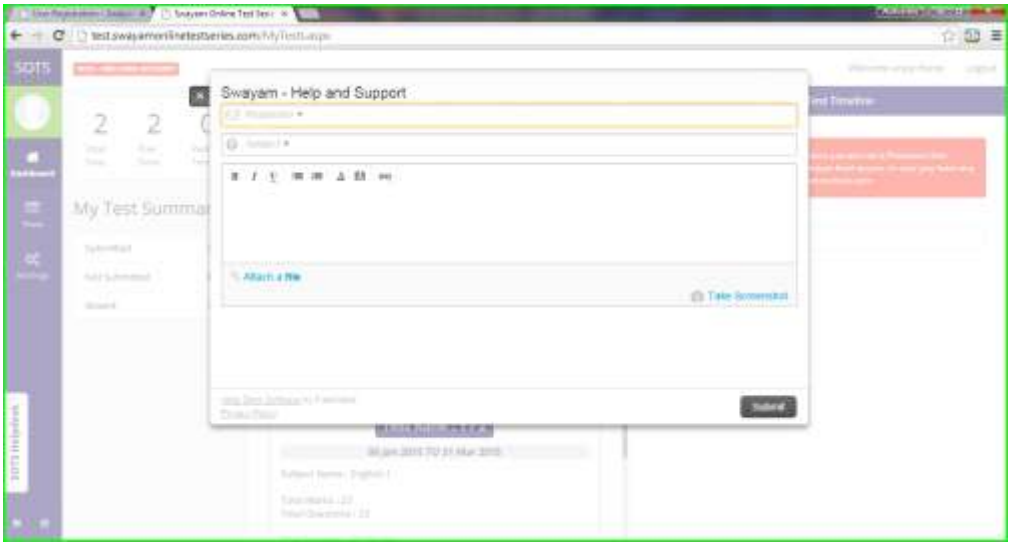

## 10. Setting Screen (For Change Username)



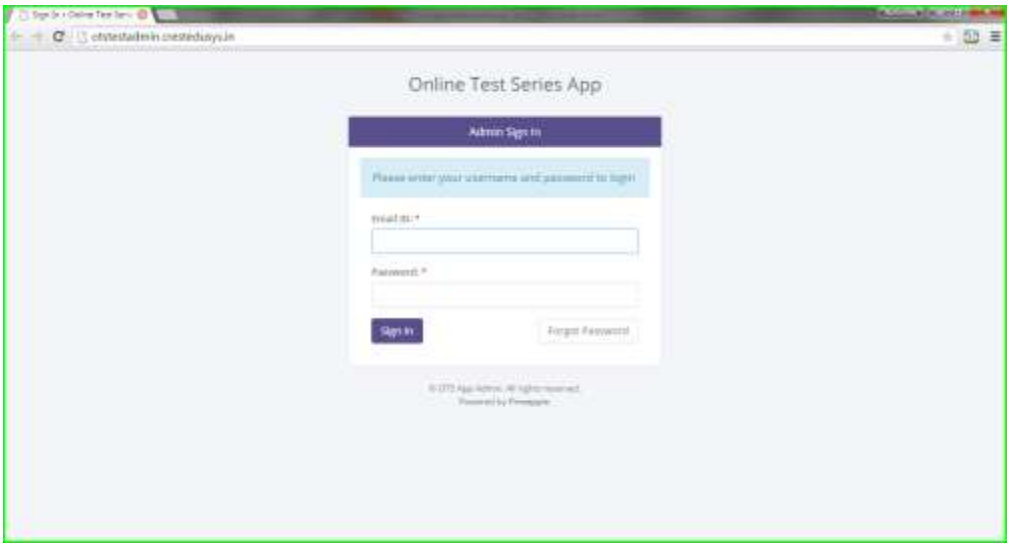
## 11. Setting Screen (Password Change Screen)



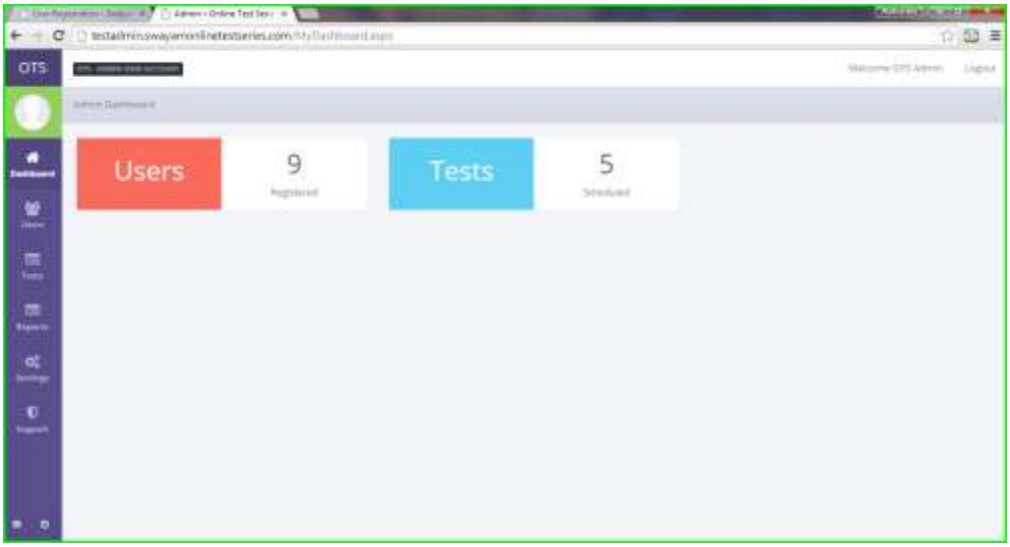

## 12. Helpdesk Screen



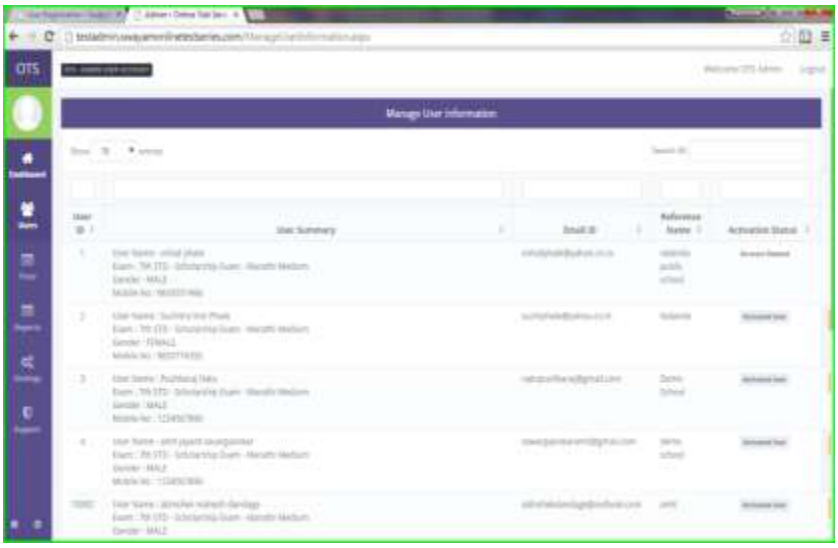
## 13.Admin Login Screen



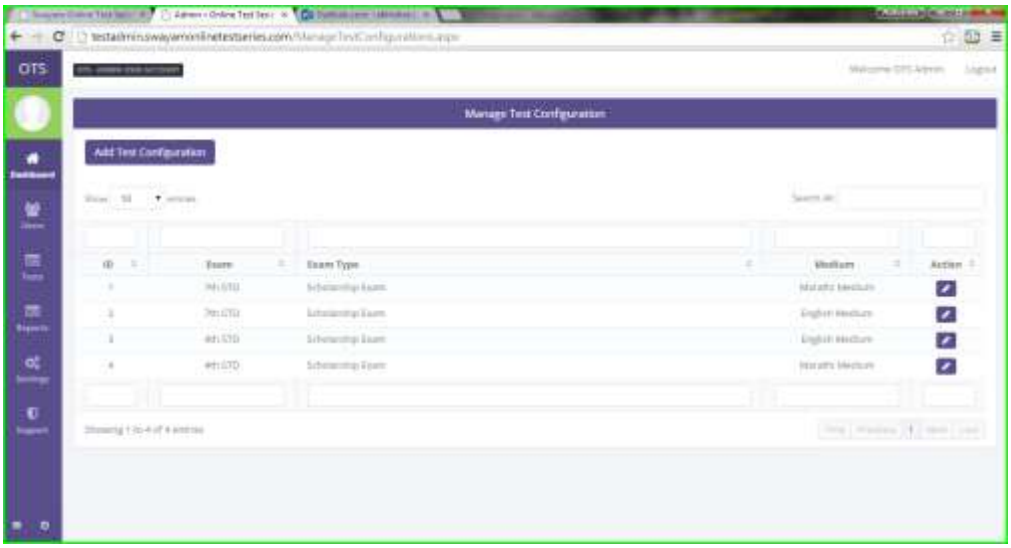

## 14. Admin Dashboard Screen



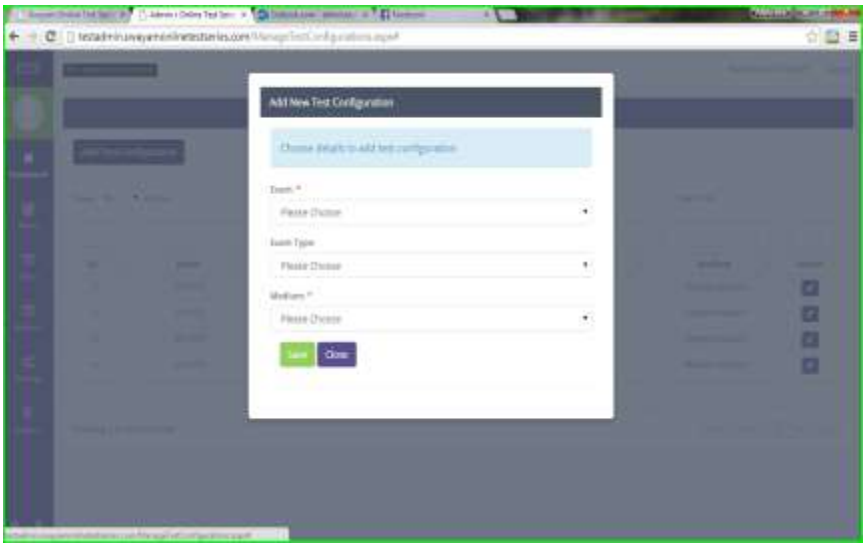
## 15. Manage User Information Screen



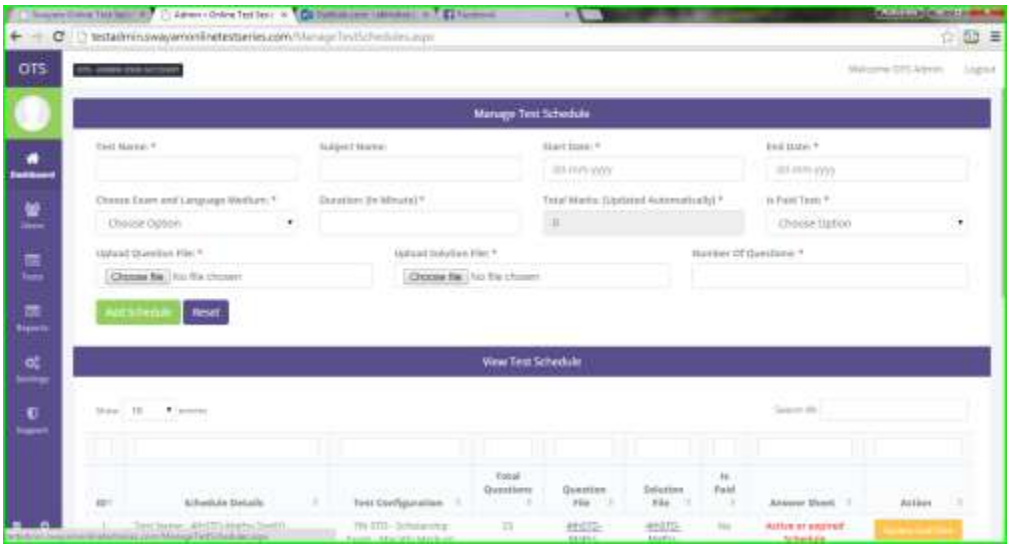

## 16. Manage Test Configuration Screen



## 17. Add Test Configuration Screen




## 18. Manage Test Schedule Screen



## 19. Test Report Screen