Software Requirements Specification for

Cyber Security Awareness Management System

Version 2.0 approved.

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13/05/2021

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Revision History

Name	Date	Reason for Changes	Version
Khalid	08/05/2021		

1. Introduction

1.1 Purpose

The main purpose of this SRS document is analyzing and collect all the information and requirements which defines the system properly to the admin, database manager and the end users. All the ideas to develop the "CSAMS" is combined to predict any sort of information which can be used to gain the better understanding of the application and concepts which can be developed later, all the ideas will be consider developing the application. This SRS document provides the requirements of "CSAMS" in detail to the developers to develop this system.

1.2 Document Conventions

The document conventions are as follows:

Font style and Size

- o Headings: Times New Roman (18).

- o Sub-headings: Times New Roman (14).

- o Text: Times New Roman (12).

- o Line Spacing   1.5

1.3 Intended Audience and Reading Suggestions

This document is intended for the developers and designers which will develop the "CSAMS" as per the requirements specified in the document. This document includes the scope of this system. That why we need this system? What is the purpose is to develop this product? In this document, we mention the features of this product, functional and non-functional requirements also mention different use cases, interfaces, our objectives which have to be achieved after the completion of this project, challenges we face in order to complete our product. The project manager will control the entire project including his all partners working on this product.

1.4 Project Scope

 "CSAMS" application is to develop a cyber-security awareness management system to comprehensively evaluate the organization's level of security awareness and then make the necessary awareness through it. "CSAMS" will use and gather assessment results to identify and develop suitable learning and training programs for cyber security awareness. It will integrate with other systems to increase compliance with cyber-security policies. "CSAMS" offers diverse learning material contents, which allow us to scale training as needed, and be accessible at any time. It also has reports that reveal how well-aware its employees are, making it valuable in determining significant security projects.

1.5 References

- IEEE Template for System Requirement Specification Documents: https://goo.gl/nsUFwy.
- Project problem domain document. (Task1)
- Project technical solution. (Task2)

2. Overall Description

In this portion, system perspective, system features, operating environment, design constraints, assumptions and dependencies will be explained in detail. This document contains the problem statement that the current system is facing which is hampering the growth opportunities of the company. It further contains a list of the stakeholders and users of the proposed solution. It also illustrates the needs and wants of the stakeholders that were identified in the brainstorming exercise as part of the requirements workshop. It further lists and briefly describes the major features and a brief description of each of the proposed system.

The following SRS contains the detail system perspective from different stakeholders and developers. It provides the detail product functions of **"CSAMS"** with user characteristics permitted constraints, assumptions and dependencies and requirements subsets.

2.1 Product Perspective

This system is not dependent on any other outside system.

- o   High-definition graphic display

2.2 Product Function

The **"CSAMS"**is a cyber-security awareness management system to comprehensively evaluate the organization's level of security awareness and then make the necessary awareness through it.

"CSAMS"application contains multiple portals as mentioned:

- Cyber Security Manager (GRC department) portal

- Employee portal

- Admin portal

2.2.1 Cyber security department portal (admin)

➢ **Test Management**
- Create Test
- Show Test
- Make a Test.
- Edit Test
- Delete Test

➢ **Materiel Management**
- Create Materiel
- Show a Materiel.
- Edit Materiel
- Delete Materiel
-

➢ **Categorization Management**
- Create Catalogue
- Show Catalogue
- Edit Catalogue
- Delete Catalogue

➢ **User Management**
- Register User
- User Login
- Register User
- User Login
- Edit User Roles
- Create Department
- Edit Department

➢ **Score Management**
- Add score.
- Show score for each EPM.
- Show scores for all EPM.
- Show score based on DEP.
- Show score based on Catalogue.

2.2.2 Employee portal

➢ **Test Management**
  - Show Test
  - Make a Test.
➢ **Materiel Management**
  - Show a Materiel.
➢ **Categorization Management**
  - Show Catalogue

➢ **User Management**
  - Register User
  - User Login
➢ **Score Management**
  - Show score for each EPM

2.3 User Classes and Characteristics

This system has three types of users who, depending on their roles can access application services. The First, employee who works in the cyber security department has all functions in CSD. Secondly, employee has all the functions in the employee portal. Finally, Admin: has access to all functions and assists in the addition of data to the database for the system to function. However, this data will be integrated with other systems in the real project.

2.4 Operating Environment

The end product will be web-based system and it will require operating environment for a client and server GUI. The system will be operated with personal computers, laptops and mobile phones.

2.5 Design and Implementation Constraints

The *"CSAMS"* is constrained by the interface to the device of the user. Since there are multiple system and multiple devices manufacturers, the interface will most likely not be the same for every one of them and the system design UI/UX should adapt and adjust on all type of devices.

The Internet connection is also a constraint for the system. Since the application fetches data from the database over the internet to get the user's details, it is crucial that there is an internet connection for the application to function.

2.6 User Documentation

Provides users all necessary documentations for Activities onboarding new user to the user guide of system usage, tutorials, and all the guidelines for using the system in different user levels.

2.7 Assumptions and Dependencies

- Each employee has a predefined username and password already identified by either Domain or HR system. "Now we put this on our system because we do not have any others system".

- All contents of different types will be available to upload and update on the system.

- The Cyber security department should have an admin account on our system to take all permissions.

- All relevant stakeholders (Employee, Mangers and Cyber-security department) will get reports about the result of assessment for employees.

- Cyber security departments should have all the required skills to write the tests.

- All of the materials are up to date.

- All employees can decide which exams they will be doing through a specific period depending on their choice.

- The system will contain different forms for the same test.

3. System Features / Function Requirements

In this section, we will describe the overall functionality, use cases which can occur in our case, and also how user interacts with our software.

3.1 Functionality

This subsection contains the requirements for the *"CSAMS"*. These requirements are organized by the features discussed in the vision document. Features from vision documents are then refined into use case diagrams to best capture the functional requirements of the system.

3.1.1 Interactive and Responsive GUI

- Simple and interactive graphical user interface.

- Task completion with minimal clicks.

- Creation of icons and widgets which are displayed to the users and organize them inside a screen window.

- Define functions that will process user and application events.

- Association of specific user events with specific functions.

- Start an infinite event-loop that processes user events. When a user event happens, the event-loop calls the function associated with that event.

3.1.2 Design and implementation of Cyber security department functionalities

- The cyber security department will be able to take all permissions through admin account.

- Cyber security department will be able to upload the training materials for cyber security awareness presentations, PDFs, videos and etc. so that employees can obtain them.

- The cyber security department will be able to create new material, add description and upload the training materials for cyber security awareness presentations, PDFs, videos etc. so that employees can obtain them.

- The cyber security department will be able to set a catalog of all contents available so that they can organize it based on subjects of security awareness to serve either managers or group of staff who have weaknesses in a particular area of cyber-security.

- The cyber security department will be able to create a test to include in a video or others materials so that employees can take several tests to ensure that they understand awareness materials.

- The cyber security department will be able to see the results for each employee and averages for the department, so they can identify their level of security awareness.

3.1.3 Design and implementation of employee functionalities

- The employee will be able to get login on the system.

- The employee will be able to view a catalog of all contents available.

- The employee will be able to view a detailed page about all content so that they can learn all about it.

- The employee will be able to view "viewed" as complete when all has been viewed, so that they can identify which courses we have already learned.

- The employee will be able to take a test so that they can tell how well they have understood the content from previous videos or others materials.

- The employee will be able to view which test we have passed, not passed, or not yet taken when viewing the so they can review which sections of a courses content to pass in cyber-security awareness required.

3.2 System Feature

3.2.1 Front End

- The front end of *"CSAMS"* must be developed in HTML, CSS, JavaScript and Bootstrap.

- Use EJS: Embedded-JavaScript, simple templating language/engine that generate HTML with plain JavaScript. The backend of "CSAMS".

3.2.2 Backend End and database

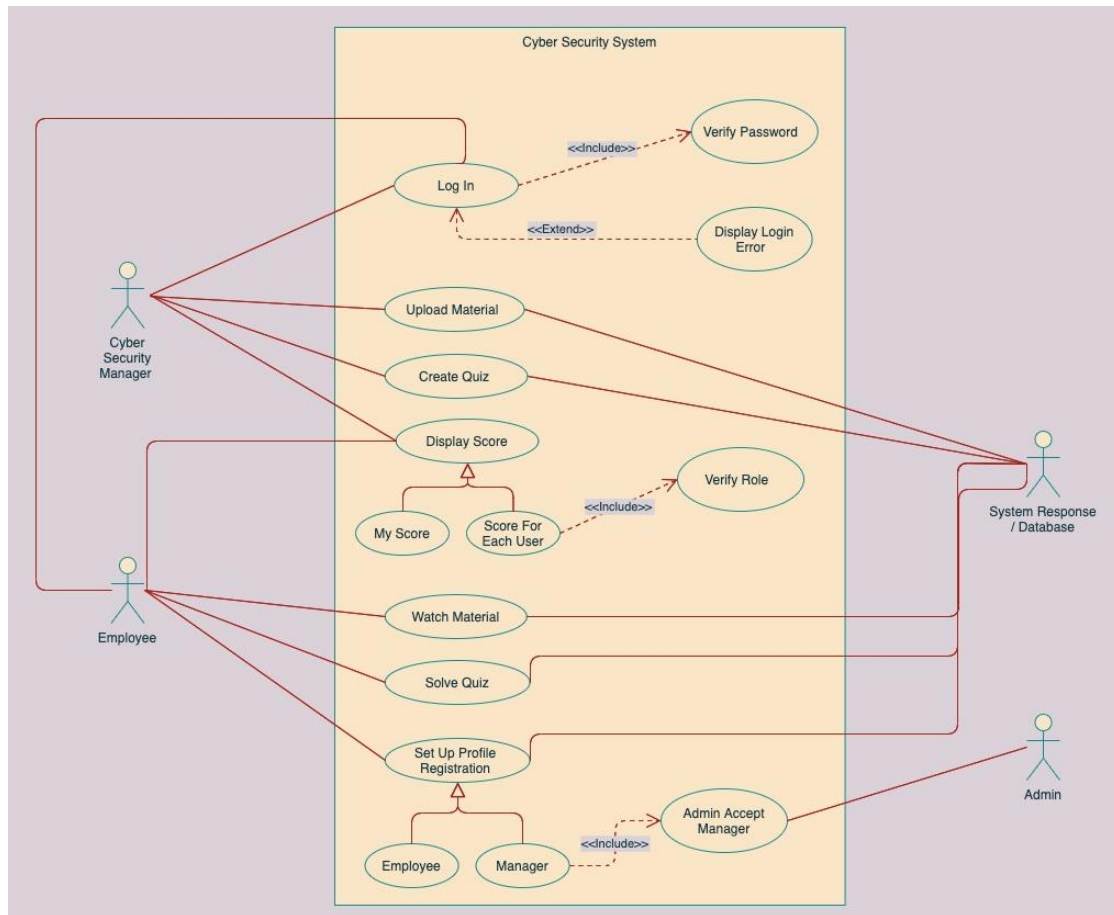- The backend of *"CSAMS"* must be developed in Nodejs and MongoDB Atlas.

3.2.3 Architecture diagram
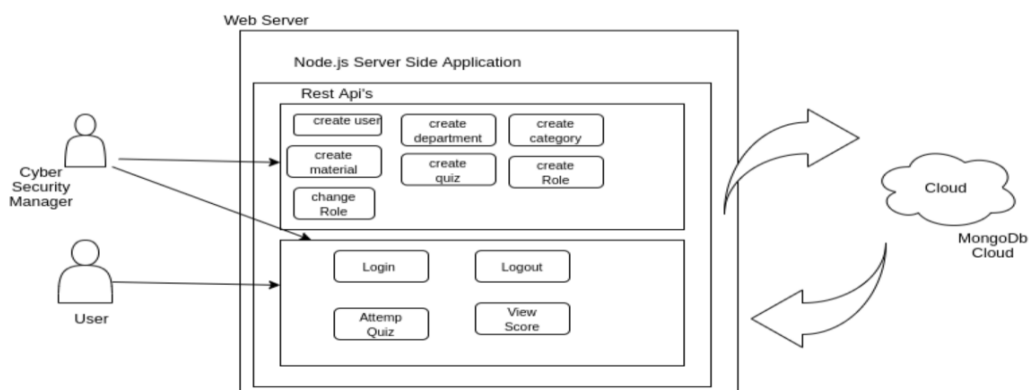
3.2.4 Business model diagram
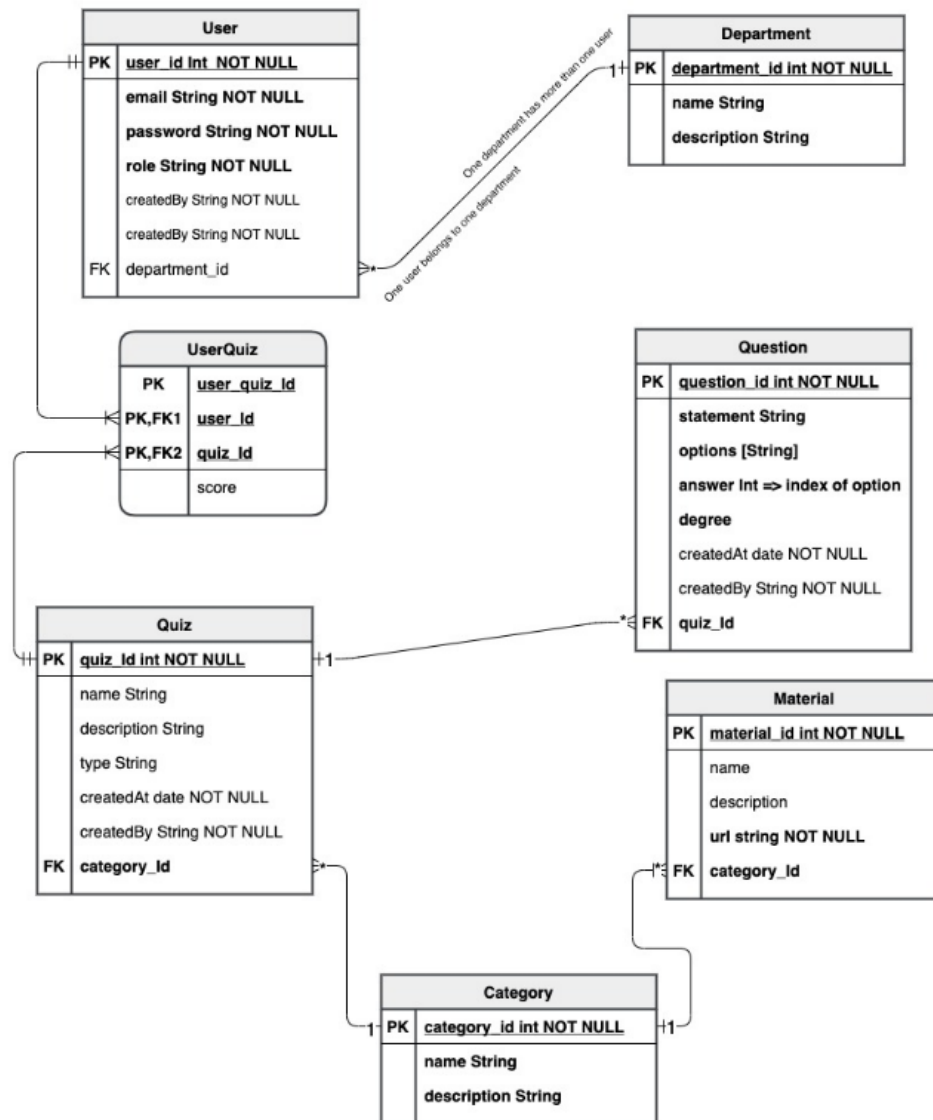
3.2.5 Use Case diagram

System Cyder security

Login:

Use-Case Name:	Login
Use-Case ID:	CSAMS-001
Description:	This use-case will be used by the employee so that they can get login.
Primary Actor:	User
Preconditions:	Employee will have valid login detail.
Postconditions:	Employee will login.
Main Success Scenario:	User land home page. User clicks login button User is redirected to login form An email is sent to the user to validate. User will have valid login detail or display login error. User will click on login button. The system will allow employee to get login based on his roles will redirect to suitable page (Cyber security page or Employee page).
Frequency of Use:	Moderate depends on each function
Alternate Courses:	System is unable to allow employee to login
Priority:	High

Material:

Use-Case Name:	Add Material
Use-Case ID:	CSAMS-002
Description:	This use-case will be used by CSD so that they can upload the training material and put description of each material.
Primary Actor:	User
Preconditions:	Employee must login with cyber security Manager account
Postconditions:	CSD user will ADD training material.
Main Success Scenario:	User land home page. user will click on ADD training material button User is redirected to material form. User will have valid material detail. The system will allow CSD user to ADD training material. The system will allow employee to get material based on his roles will redirect to suitable page (Cyber security page or Employee page).
Frequency of Use:	Moderate depends on each function
Alternate Courses:	System is unable to allow CSD user to ADD training material.
Priority:	High

Quiz:

Use-Case Name:	Create a quiz
Use-Case ID:	CSAMS-003
Description:	This use-case will be used by the CSD so that they can create a quiz.
Primary Actor:	User& Manager
Preconditions:	CSD user will create a test.
Postconditions:	CSD must login with admin account.
Main Success Scenario:	User land home page. user will click on create a quiz button. User is redirected to quiz form User will have valid quiz detail. user will click on create a test button. The system will allow employee to get quiz based on his roles will redirect to suitable page (Cyber security page or Employee page).
Frequency of Use:	Moderate depends on each function
Alternate Courses:	System is unable to allow CSD user to create a test.
Priority:	High

solve quiz:

Use-Case Name:	Take a quiz
Use-Case ID:	CSAMS-004
Description:	This use-case will be used by the employee so that they can take a test.
Primary Actor:	User Employee
Preconditions:	Employee must be logged in.
Postconditions:	Employee will take a test.
Main Success Scenario:	User land home page. user will click on see the quiz button. User is redirected to quiz form user will click on view quiz button. Employee will click on view quiz. user will click on view his score The system will see score for each user The system will verify based are role will redirect for it . The system will allow employee to get quiz based on his roles will redirect to suitable page (Cyber security page or Employee page).
Frequency of Use:	Moderate depends on each department
Alternate Courses:	System is unable to allow employee to take a test.
Priority:	High

Training material:

Use-Case Name:	Training material
Use-Case ID:	CSAMS-005
Description:	This use-case will be used by CSD so that they can upload the training material and description of each materials.
Primary Actor:	All user
Preconditions:	Employee must be logged in.
Postconditions:	Employee will take a material.
Main Success Scenario:	User land home page. user will click training material button. User is redirected to material form. user will click on watch training material button. The system will allow employee to get the materials will redirect to suitable page (Cyber security page or Employee page).
Frequency of Use:	Moderate depends on each department
Alternate Courses:	System is unable to allow CSD user to see the materials.
Priority:	High

Result:

| Use-Case Name:	Result
Use-Case ID:	CSAMS-006
Description:	This use-case will be used by the use so that they can see the result.
Primary Actor:	All user
Preconditions:	User must login with his account
Postconditions:	User will see the result.
Main Success Scenario:	User land home page. User will click on see the result button. User is redirected to result from. Manager user will click on view result button. User will click on view result button. The system will allow manager to view result of all employees. The system will allow employee to get result based on his roles will redirect to suitable page (Cyber security page or Employee page).
Frequency of Use:	Moderate depends on each department
Alternate Courses:	System is unable to allow CSD user to see the result.
Priority:	High

Profile Registration:

Use-Case Name:	Profile Registration
Use-Case ID:	CSAMS-007
Description:	This use-case will be used by the CSD so that they can sit up profile registration.
Primary Actor:	All user
Preconditions:	User must registration with his account
Postconditions:	User will be registration.
Main Success Scenario:	User land home page. CSD user will click on set a profile registration button. User will click on the profile registration. The system will allow CSD user to a profile registration. The system will allow employee to get registration based on his roles will redirect to suitable page (Cyber security page or Employee page).
Frequency of Use:	Moderate depends on each department
Alternate Courses:	System is unable to allow CSD user to set up profile registration.
Priority:	High

4. External Interface Requirements

4.1 User Interfaces

The system interface must be user friendly and conform to consistent and standardized colors and fonts. The system must meet accessibility standards. Several user interfaces must be available for all users.
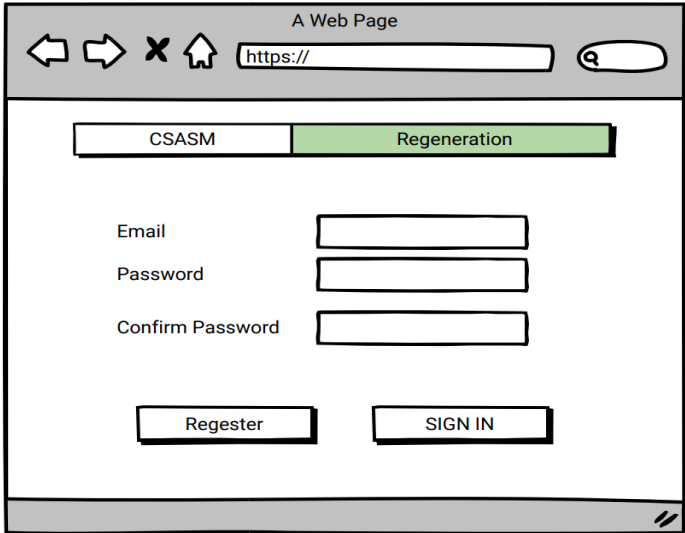
4.1.1 **Home page** is the default home page is the page that all users are directed to when the program is started for the first time.
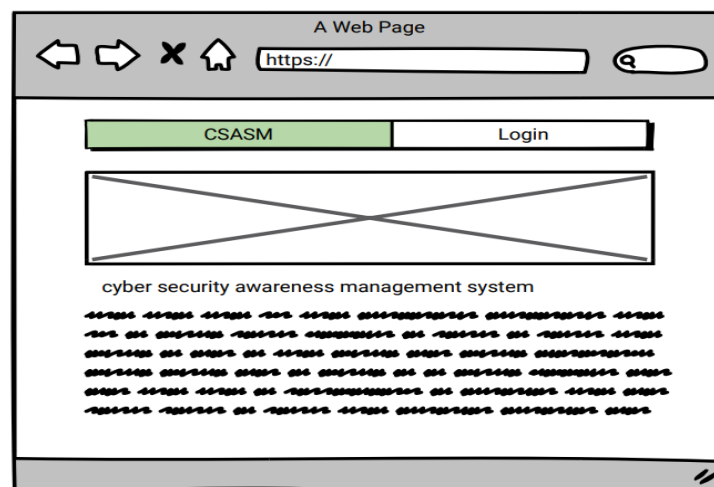
4.1.2 **Login page** → After registering, the user can sign in to the system by clicking on the sign in button and entering their user credentials.
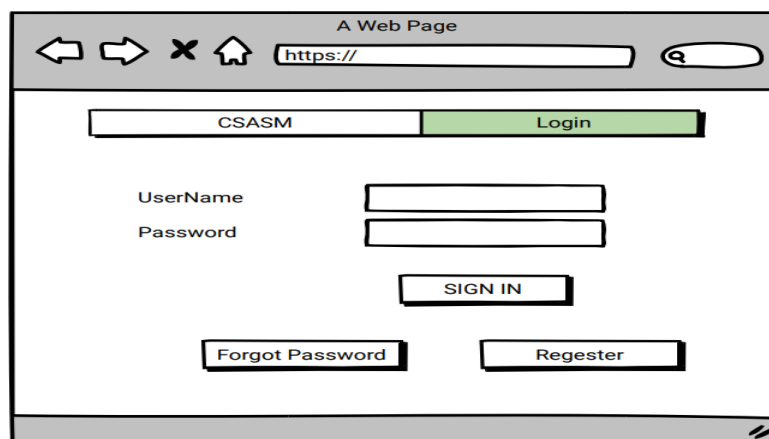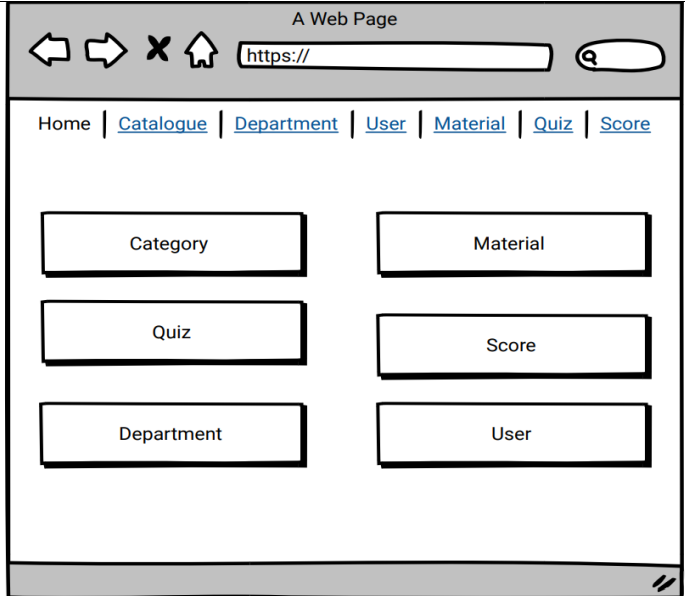
4.1.3 **Registration page:** After filling out the form with this data and clicking on the registration button, the user will register, and after clicking on the login button, the user will be directed to the login page.

4.1.4 **Cyber Security (Admin)** is the default home page is the page that manger users are directed to after he is logged in.

Employee page is the default home page is the page that employee users are directed to after he is logged in.
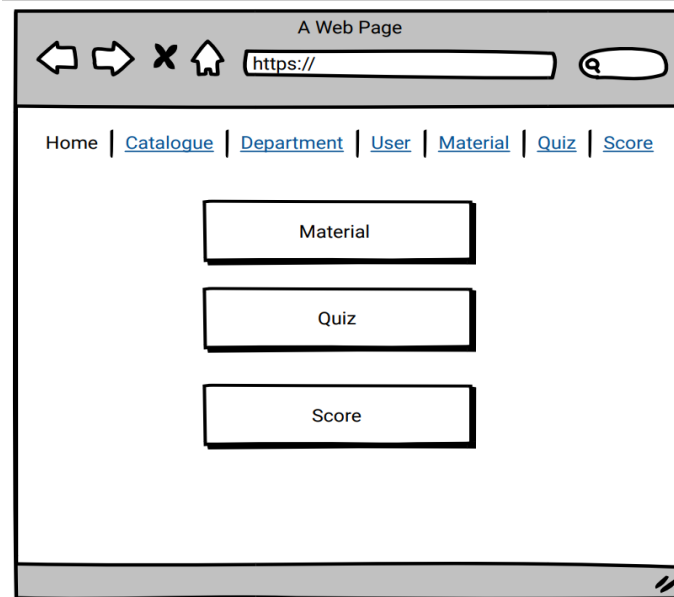
4.1.5 **Category Management page** → Cyber security department will be able to create new Category, add it description.
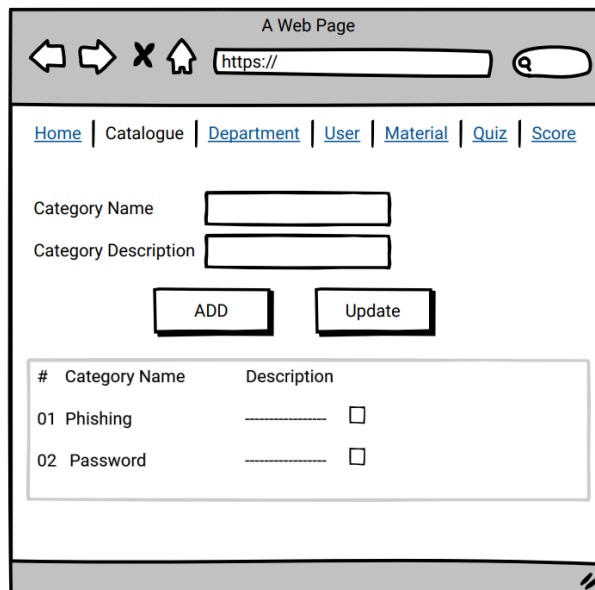
4.1.6 **Department page** → admin for system will be able to create new department.

4.1.7 **User Role page** → admin for system can change the role for user role based on his job. The employee takes default member role when he/she register

4.1.8 **Add Material page** → Cyber security department will be able to create new material, add description and upload the training materials for cyber security awareness presentations, PDFs, videos and etc.

4.1.9 **Add Quiz page** → Cyber security department will be able to create new quiz, add description and add question about cyber security awareness materials.

4.1.10 **Show Materials page** ➔ The employees will be able to view a catalog of all contents available. Then they can be able to view materials for this catalog.
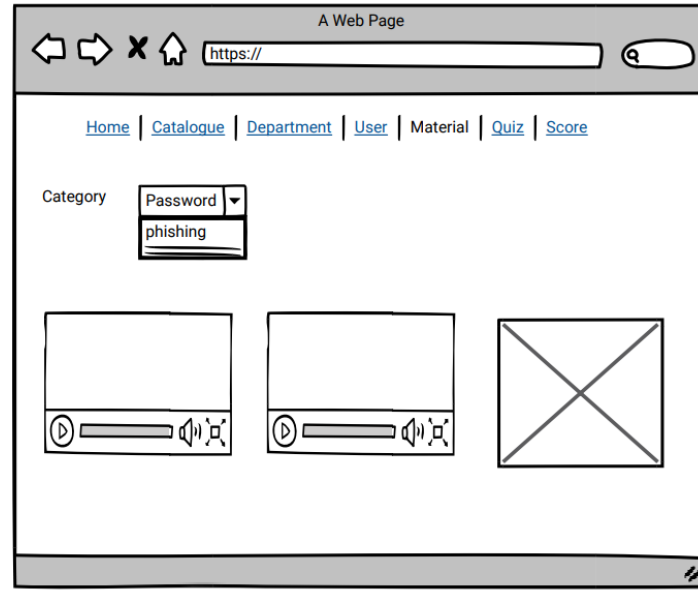
4.1.11 **Take a Quiz**➔ The employee will be able to take a test so that they can tell how well they have understood the content from previous videos or other materials. And also they can view test for each catalog.
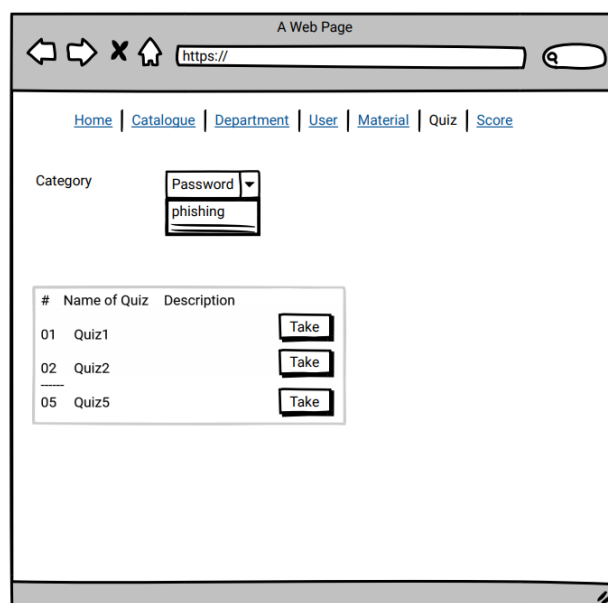
4.1.12 **Show Score** → The employee will be able to see his score for each quiz.
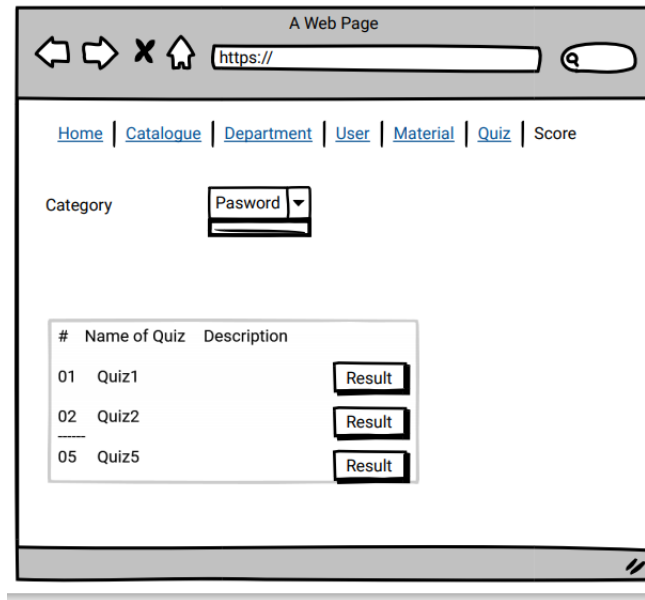
4.1.13 **Dashboard** → The employee will be able to see his scores for grope of quizzes as dashboard based on category. The Manger of cyber security can see the results for each employee and averages for my department.

4.2 Hardware Interfaces

Since the application must run over the internet, all the hardware shall require connecting internet will be hardware interface for the system as for e.g., Modem, WAN-LAN, Ethernet Cross-Cable.

4.3 Software Interfaces

The system shall communicate with the Configuration to identify all the available components to configure the system. The system shall communicate with cloud database system for data management.

4.4 Communications Interfaces

The "CSAMS" shall use the HTTP protocol for communication over the internet and for the intranet communication will be through TCP/IP protocol suite. The system will access files from its own memory. It will also interface with a database or external files from the internet to get the data. Other Nonfunctional Requirements

5. Other nonfunctional Requirements

5.1 Usability

5.1.1 Graphical User Interface

- The system shall provide a uniform look and feel between all the web pages.

- The system shall provide use of icons and toolbars.

5.1.2 Accessibility

- The system shall provide English language support.

5.2 Reliability and Availability

- The system shall provide for replication of databases to off-site storage locations.
- The system shall provide redundant approach in app server and database to make service Available.

5.3 Security

- The system shall use secure encryption in all activities that include any confidential user's information.
- The system's back-end servers shall only be accessible to authenticated administrators.
- The system's back-end database shall be encrypted.

5.4 Interfaces

- The protocol used shall be HTTP.

- The Port number used will be 80.

Appendix A: Glossary

Term	Definition
CSAMS	Cyber Security Awareness Management System
User	who uses the system ()
GUI	Graphical User Interface