**Question Bank Management System**

**Requirement Analysis Sprint 1 Document**

A picture containing light, laser, night sky

Description automatically generated

**Group:**

Purple-Inverson

**Group Members and Student Numbers:**

Abigail Naicker (2350973)

Akshay Makhan (2366532)

Gabriel Nkole (2377848)

Harshan Pillay (2344696)

James Thackeray (2228361)

Navin Philip (2308402)

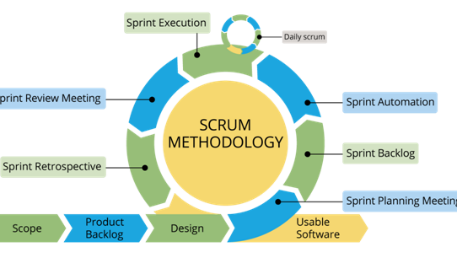
Seshnie Naidoo (2081236)

Tasneem Francisco (2398339)

Que Sera Subramoney (1611459)

**Description**

A question bank management system, is a software system that allows a user to view questions, add questions and add answers as well to questions and these questions are stored for use to users who log in into the system. These questions have different types (multiple choice, essay, Boolean). Users can tag questions and create a quiz or test from these questions according to their content they want to be tested on. Flutter will be used as the framework for building this software system. GitHub will be used as our software configuration management. The use of a scrum methodology process will be used in guiding the team to create the software.





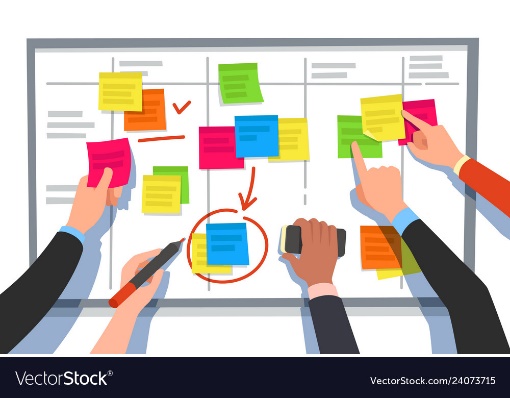
**User Stories and Acceptance Tests**

*The following section has the following format:*

* *User Story*
  + *User Acceptance Test*
* As a logged out user of the system, I want to be directed to a hub/menu upon login to be present with options to create or import questions, or view questions already stored in the system.
  + Given that I am logged out of the system and I am on the Sign-in page, when I enter valid credentials (email address and password) and click the login button, then the system will log me into the system and then shows the menu/hub page.
* As an authorised person (staff member), I want to create new questions to add to the question bank so that they can be stored and then accessed by other users.
  + Given that I am an authorized user, when I create a new question and click the save button, the question will be stored in the system.
* As an authorised person (staff member), I want to create different types of questions (MCQs, essay, etc.) to add variety and complexity to the tests.
  + Given that I am an authorised user, when I open the “create question” page then the system shows me options of question types.
* As an authorised person (staff member), I want to view/access questions in the question bank to create quizzes.
  + Given that I am an authorised user and I am on the menu/hub page, when I open the “Questions” page, then the system shows a list of all questions that have been created/imported into the system.
* As an authorised person (staff member), I want to create quizzes directly in the question bank management system to avoid using external applications to create questions.
  + Given that I am an authorised user, and I am on the “create question” page and I have specified the type of question I want to create, then the system shows an input field related to the specified question type.
* As an authorised person (staff member), I want to download/export questions from the question bank, in a zip file adhering the QTI format, to various other LMS platforms so that I can create exams and quizzes.
  + Given that I am an authorized user and I am on the “Questions” page, when I select the option to export question, then the system enable me to select the destination where I would like to save the zipped QTI formatted file.
* As an authorised person (staff member), I want to import questions of various formats (QTIs, CVSs, docx, etc.) from other LMSs, into the question management system to avoid having to recreate questions that already exist.
  + Given that I am an authorised user, and I am on the “create question” page, when I select the option to import a question, then the system enables me to select a file (QTIs, CVSs, docx, etc.) from my device to import into the system.
* As an authorised person (staff member), I want to attach tags to questions so users can easily find questions by subject/topic type in the Question Bank later.
  + Given that I am an authorised user and I am on the “create question” page, when I have completed filling in all input fields of my specified question type and I click “done”, then the shows shows an input field requiring the “question name” and “tag”; when I select the “tag” section, then the system shows various topics/subjects to select as a tag.
* As an authorised person (staff member), I want to peer review questions on the system to ensure that the questions on the system are of high quality/standard.
  + Given that I am an authorised user and I am on the “Questions” page, when click on a question from the presented list, then the system shows an option to peer review the question, when I select the option to peer review a question, then the system provides an interface to review the select question.
* As an authorised person (staff member), I can track my activity (sessions) on the system to monitor my interaction with the system.
  + Given that I am an authorised user and I am on the “menu/hub” page, when I select the option to view my activity, the system shows a list of my interaction with questions on the system (creation, editing, peer reviewing, etc.).
* As an administrator, I can manage (grant/deny) access to the system to ensure that no unauthorized users gain access to the question bank.
  + Given that I am an administrator, and I am on the “authorised user” page, when I click a user record from the list, then the system prompts whether that user should be deauthorised.

**Tasks for Sprint 1**

* Decide on a Framework and Software configuration management system and download it.
  + We have chosen Flutter has our framework and GitHub has the software configuration management system.
* Decide on a code coverage software and a continuous integrations software.
  + We have chosen Codecov has the code coverage software and integrated it with badge on GitHub. Our continuous integration software will be Jenkins.
* Create user signup and login interface
  + Interface for user to login into the system and interact with the question bank.
* Create user interface for adding a single type of question (multiple choice, Boolean or essay), tagging, viewing, and importing questions.
  + Interface for user, while interacting with the question bank, can add, view, tag or import questions of a single type.
  + Single type of question is only for sprint 1.
* Questions must follow the QTI format
  + Research on the QTI format for the questions.



**Kanboard on GitHub**

A scrum task board is created on GitHub, Kanboard. This will keep track of the product backlog, sprint backlog and tasks in progress and completed.

A screenshot of part of the Kanboard is shown below.

Graphical user interface, text, application, email, website

Description automatically generated

**Technical Requirements for Sprint 1**

* Login System with 1 user type
  + There must be an interface where a user can login with their email and password
* Have Hub/menu
  + Hub that navigates you to either create a question or import a question into the question bank or view a question from the question bank
* Create new Question of a certain type
  + Going from the Hub/menu, user will be able to add a new question
* Import a certain type of question into the question bank
  + Going from the Hub/menu, user will be able to import a certain type of question into the question bank
* View Question Bank
  + Going from the Hub/menu, user will be able to view questions from the question bank.

