**Use Cases**

**Version 1.0 approved**

**Prepared by Iced Milo**

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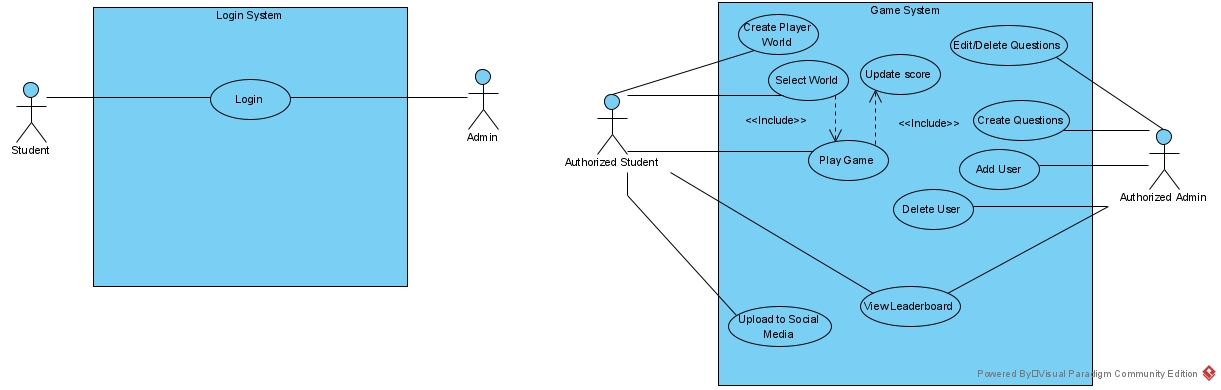
**Revision History**

| **Name** | **Date** | **Reason For Changes** | **Version** |
| --- | --- | --- | --- |
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**Use Case List**

| ***Use Case ID*** | ***Primary Actor*** | ***Use Cases*** | ***Page*** |
| --- | --- | --- | --- |
| 1 | Student/Admin | Login | 3 |
| 2 | Student | Play Game | 5 |
| 3 | Admin | Add User | 7 |
| 4 | Admin | Create Question | 9 |

Use Case Diagram



Use Case Descriptions

| Use Case ID: | 1 | | |
| --- | --- | --- | --- |
| Use Case Name: | Login | | |
| Created By: | Benjamin Tan | Last Updated By: |  |
| Date Created: | 3/9/2022 | Date Last Updated: |  |

| Actors: | Student/Admin |
| --- | --- |
| Description: | Users are able to authenticate themselves by inputting their corresponding username and password |
| Trigger: | 1. User starts the game. |
| Preconditions: | 1. User is not authenticated |
| Postconditions: | 1. User is authenticated and is considered authorized. 2. The system displays the World Selection Scene |
| Normal Flow: | 1. User clicks on the Login button. 2. System displays 2 fillable forms, prompting for the username and password, as well as a new login button. 3. User fills both forms with their username and password 4. User clicks on the Login button. 5. System sends an authentication request to the user database API. 6. System receives a successful authentication. 7. System displays the World Selection Scene |
| Alternative Flows: | AF-6.1: The use case diverges at Step 6  The username or password is not valid.   1. System receives a failed authentication. 2. System displays the prompt “Please enter valid username and password.”   The use case restarts from Step 3.  AF-6.2: The use case diverges at Step 7  User is an admin.   1. System displays the Administrative Scene |
| Exceptions: |  |
| Includes: |  |
| Priority: | High |
| Frequency of Use: | High (Required for other use cases) |
| Business Rules: |  |
| Special Requirements: |  |
| Assumptions: | User’s application has a working network connection |
| Notes and Issues: |  |

| Use Case ID: | 2 | | |
| --- | --- | --- | --- |
| Use Case Name: | Play Game | | |
| Created By: | Benjamin Tan | Last Updated By: |  |
| Date Created: | 4/09/2022 | Date Last Updated: |  |

| Actors: | Student (Initiating actor) |
| --- | --- |
| Description: | Students are able to play the game and answer questions.. |
| Trigger: | 1. Student selects a world on the World Selection Screen. |
| Preconditions: | 1. Student is logged in and user credentials verified. |
| Postconditions: |  |
| Normal Flow: | 1. The system retrieves a list of questions from the question database based on the world selected and their difficulty. 2. The system displays each question in order of difficulty. 3. The student answers a question, and the system displays the next question. 4. Step 3 repeats until all the questions have been answered, or the student’s number of tries runs out. 5. The system ends the game and updates the student’s score. |
| Alternative Flows: |  |
| Exceptions: |  |
| Includes: |  |
| Priority: | High |
| Frequency of Use: | High (Main usage for the software) |
| Business Rules: |  |
| Special Requirements: |  |
| Assumptions: | User’s application has a working network connection |
| Notes and Issues: |  |

| Use Case ID: | 3 | | |
| --- | --- | --- | --- |
| Use Case Name: | Add User | | |
| Created By: | Benjamin Tan | Last Updated By: |  |
| Date Created: | 4/09/2022 | Date Last Updated: |  |

| Actors: | Admin (Initiating actor) |
| --- | --- |
| Description: | Admin are able to create and add users. |
| Trigger: | 1. Admin clicks on the “Add User” button. |
| Preconditions: | 1. Admin is logged in and user credentials verified. |
| Postconditions: | 1. New user credentials are added to the user database. |
| Normal Flow: | 1. Admin clicks on the “Add User” button. 2. System displays two fillable forms for the new user’s username and password, as well as a “Confirm” button. 3. Admin fills the two forms and clicks on the “Confirm” button. 4. System verifies that the username or password is not blank. 5. System sends an user add request to the user database API. 6. User is added to the database, and the API returns a successful call to the system. 7. System displays a “Success” prompt to the admin. |
| Alternative Flows: |  |
| Exceptions: | EX-1.0.E.1: User aborts user creation process at any step.   1. System returns to Administrative Scene.   EX-4.0.E.1: Username or password is blank, exception occurs at step 4.   1. System fails to verify that username or password is not blank, and raises an exception. 2. System displays the prompt “Please fill in the username/password”.   Return to Step 3. |
| Includes: |  |
| Priority: | High |
| Frequency of Use: | Low |
| Business Rules: | Admin must fill in the required field(s). |
| Special Requirements: |  |
| Assumptions: | User’s application has a working network connection |
| Notes and Issues: |  |

| Use Case ID: | 4 | | |
| --- | --- | --- | --- |
| Use Case Name: | Create Question | | |
| Created By: | Benjamin Tan | Last Updated By: |  |
| Date Created: | 4/09/2022 | Date Last Updated: |  |

| Actors: | Admin |
| --- | --- |
| Description: | Admin creates a question and adds it to the question database. |
| Trigger: | 1. Admin clicks on the “Create Question” button. |
| Preconditions: | 1. Admin is logged in and user credentials verified. |
| Postconditions: | 1. Question is created and added to the question Database. |
| Normal Flow: | 1. Admin clicks on the “Create Question” button. 2. System displays several fillable forms, which correspond to “Question Number”, “Description”, “Four Options” and “Explanation”, as well as a “Confirm” button. 3. User fills in the forms and clicks on the “Confirm” button. 4. System sends a question add request to the question database API. 5. Question is added to the database, and the API returns a successful call to the system. 6. System displays a “Success” prompt to the admin. |
| Alternative Flows: |  |
| Exceptions: | EX-1.0.E.1: User aborts user creation process at any step.   1. System returns to Administrative Scene. |
| Includes: |  |
| Priority: | High |
| Frequency of Use: | Medium |
| Business Rules: |  |
| Special Requirements: |  |
| Assumptions: | User’s application has a working network connection |
| Notes and Issues: |  |

|  |  | | |
| --- | --- | --- | --- |
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|  |  |  |  |

**Appendix 1: Data Dictionary**

| **Keywords** | **Explanation** |
| --- | --- |
| User | Refers to any person that uses the software, irrespective of whether it is student or admin |
| World | Refers to a “stage” where a student must answer multiple questions |
| Student | Refers to users who have only low-level access to the software. |
| Admin | Refers to users with high-level access to the software. |

# Guidance for Use Case Template

Document each use case using the template shown in the Appendix. This section provides a description of each section in the use case template.

# Use Case Identification

## Use Case ID

Give each use case a unique integer sequence number identifier. Alternatively, use a hierarchical form: X.Y. Related use cases can be grouped in the hierarchy.

## Use Case Name

State a concise, results-oriented name for the use case. These reflect the tasks the user needs to be able to accomplish using the application. Include an action verb and a noun. Some examples:

* View part number information.
* Manually mark hypertext source and establish link to target.
* Place an order for a CD with the updated software version.

## Use Case History

### Created By

Supply the name of the person who initially documented this use case.

### Date Created

Enter the date on which the use case was initially documented.

### Last Updated By

Supply the name of the person who performed the most recent update to the use case description.

### Date Last Updated

Enter the date on which the use case was most recently updated.

# Use Case Definition

## Actors

An actor is a person or other entity external to the software application being specified who interacts with the application and performs use cases to accomplish tasks. Different actors often correspond to different user classes, or roles, identified from the customer community that will use the product. Name the actor that will be initiating this use case and any other actors who will participate in completing the use case.

## Trigger

Identify the event that initiates the use case. This could be an external business event or application event that causes the use case to begin, or it could be the first step in the normal flow.

## Description

Provide a brief description of the reason for and outcome of this use case, or a high-level description of the sequence of actions and the outcome of executing the use case.

## Preconditions

List any activities that must take place, or any conditions that must be true, before the use case can be started. Number each precondition. Examples:

1. User’s identity has been authenticated.
2. User’s computer has sufficient free memory available to launch task.

## Postconditions

Describe the state of the application at the conclusion of the use case execution. Number each postcondition. Examples:

1. Document contains only valid SGML tags.
2. Price of item in database has been updated with new value.

## Normal Flow

Provide a detailed description of the user actions and application responses that will take place during execution of the use case under normal, expected conditions. This dialog sequence will ultimately lead to accomplishing the goal stated in the use case name and description. This description may be written as an answer to the hypothetical question, “How do I <accomplish the task stated in the use case name>?” This is best done as a numbered list of actions performed by the actor, alternating with responses provided by the system. The normal flow is numbered “X.0”, where “X” is the Use Case ID.

## Alternative Flows

Document other, legitimate usage scenarios that can take place within this use case separately in this section. State the alternative flow, and describe any differences in the sequence of steps that take place. Number each alternative flow in the form “X.Y”, where “X” is the Use Case ID and Y is a sequence number for the alternative flow. For example, “5.3” would indicate the third alternative flow for use case number 5. (*follow SE format AF-5.3 or something*)

## Exceptions

Describe any anticipated error conditions that could occur during execution of the use case, and define how the system is to respond to those conditions. Also, describe how the system is to respond if the use case execution fails for some unanticipated reason. If the use case results in a durable state change in a database or the outside world, state whether the change is rolled back, completed correctly, partially completed with a known state, or left in an undetermined state as a result of the exception. Number each alternative flow in the form “X.Y.E.Z”, where “X” is the Use Case ID, Y indicates the normal (0) or alternative (>0) flow during which this exception could take place, “E” indicates an exception, and “Z” is a sequence number for the exceptions. For example “5.0.E.2” would indicate the second exception for the normal flow for use case number 5.

## Includes

List any other use cases that are included (“called”) by this use case. Common functionality that appears in multiple use cases can be split out into a separate use case that is included by the ones that need that common functionality.

## Priority

Indicate the relative priority of implementing the functionality required to allow this use case to be executed. The priority scheme used must be the same as that used in the software requirements specification.

## Frequency of Use

Estimate the number of times this use case will be performed by the actors per some appropriate unit of time.

## Business Rules

List any business rules that influence this use case.

## Special Requirements

Identify any additional requirements, such as nonfunctional requirements, for the use case that may need to be addressed during design or implementation. These may include performance requirements or other quality attributes.

## Assumptions

List any assumptions that were made in the analysis that led to accepting this use case into the product description and writing the use case description.

## Notes and Issues

List any additional comments about this use case or any remaining open issues or TBDs (To Be Determineds) that must be resolved. Identify who will resolve each issue, the due date, and what the resolution ultimately is.