



# AdventureLearn Game Application Use Case Model

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## Revision History

| <b>Name</b>   | <b>Date</b> | <b>Reason for Change</b>                | <b>Version</b> |
|---------------|-------------|---|----------------|
| Yuen Kim Hwee | 09/02/2020  | Initial Use Case Model                  | 1.0            |
| Benedict      | 15/03/2020  | Use Case Model Update                   | 1.1            |
| Yuen Kim Hwee | 20/04/2020  | Finalised Use Case Model for Submission | 1.2            |
|               |             |   |                |

## Page 4



## 2. Use Case Description

### 2.1 Login

|                       |               |                           |               |
|-----------------------|---------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 1             |                           |               |
| <b>Use Case Name:</b> | Login         |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020    | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |  |
|---------------------------|--|
| <b>Actor:</b>             | Student, Teacher   |
| <b>Description:</b>       | Students and Teachers can login to the system through their Facebook or GooglePlay accounts. After logging in successfully, Students and Teachers will be brought to the Student's Main Menu page and Teacher's Main Menu page respectively.                             |
| <b>Preconditions:</b>     | 1. The user must have a Facebook or GooglePlay account.  |
| <b>Postconditions:</b>    | 1. The user logs in to the system successfully.  |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. System displays the Login page.</li> <li>2. If the user clicks on the Facebook login button, the Facebook API will handle the necessary login procedures.</li> <li>3. System saves the user's Email and FacebookID.</li> </ol> |
| <b>Alternative Flows:</b> | AF-S2: If the user clicks on the Google login button. <ol style="list-style-type: none"> <li>1. The GooglePlay API will handle the necessary login procedures.</li> <li>2. System saves the user's Email and GooglePlayID.</li> </ol>                                    |
| <b>Exception:</b>         | N/A  |
| <b>Includes:</b>          | N/A  |
| <b>Extends:</b>           | N/A  |

## Use Case Model

|                          |     |
|--------------------------|-----|
| <b>Assumptions:</b>      | N/A |
| <b>Notes and Issues:</b> | N/A |

## 2.2 ViewProfile

|                       |               |                           |               |
|-----------------------|---------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 2             |                           |               |
| <b>Use Case Name:</b> | ViewProfile   |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020    | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |   |
|---------------------------|---|
| <b>Actor:</b>             | Student   |
| <b>Description:</b>       | Students can view their basic information: name, score, rank, and selected Character.<br>A Profile page contains: Student's basic information, change Character button.   |
| <b>Preconditions:</b>     | 1. The Student has logged in to the system successfully.  |
| <b>Postconditions:</b>    | 1. The Profile page is displayed successfully.  |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. The Student clicks on the "Profile" button on the Main Menu page.</li> <li>2. System redirects to the Profile page.</li> <li>3. If the Student clicks on the change Character button, the extended use case SelectCharacter is used.</li> </ol> |
| <b>Alternative Flows:</b> | N/A   |
| <b>Exception:</b>         | N/A   |
| <b>Includes:</b>          | N/A   |
| <b>Extends:</b>           | SelectCharacter   |
| <b>Assumptions:</b>       | N/A   |
| <b>Notes and Issues:</b>  | N/A   |

## 2.3 SelectCharacter

|                       |                 |                           |               |
|-----------------------|-----------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 3               |                           |               |
| <b>Use Case Name:</b> | SelectCharacter |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee   | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020      | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |  |
|---------------------------|--|
| <b>Actor:</b>             | N/A  |
| <b>Description:</b>       | There are 4 different Characters for the user to choose from on the Character Selection page. Each Character has a unique ability.   |
| <b>Preconditions:</b>     | <ol style="list-style-type: none"> <li>1. The Student has logged in to the system successfully.</li> <li>2. The Student has clicked on the change Character button on the Profile page.</li> </ol>   |
| <b>Postconditions:</b>    | <ol style="list-style-type: none"> <li>1. The Student's selected Character is updated to his/her latest Character choice.</li> </ol>   |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. System redirects to the Character Selection page.</li> <li>2. The Student clicks on one of the available Characters.</li> <li>3. System redirects to the Profile page.</li> <li>4. The Profile page now displays the latest selected Character.</li> </ol> |
| <b>Alternative Flows:</b> | N/A  |
| <b>Exception:</b>         | N/A  |
| <b>Includes:</b>          | N/A  |
| <b>Extends:</b>           | N/A  |
| <b>Assumptions:</b>       | N/A  |
| <b>Notes and Issues:</b>  | N/A  |



## 2.4 ViewCustomLevels

|                       |                  |                           |               |
|-----------------------|------------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 4                |                           |               |
| <b>Use Case Name:</b> | ViewCustomLevels |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee    | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020       | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |   |
|---------------------------|---|
| <b>Actor:</b>             | Student   |
| <b>Description:</b>       | Students can play other Custom Levels.<br>The Custom Levels page consists of a list of Custom Levels created by Students, a “View Created Levels” button, a “Create Level” button. Beside each Custom Level is an “Play” button.  |
| <b>Preconditions:</b>     | 1. The Student has logged in to the system successfully.  |
| <b>Postconditions:</b>    | 1. The Custom Levels page is displayed successfully.  |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. The Student clicks on the “Custom Levels” button on the Main Menu page.</li> <li>2. System redirects to the Custom Levels page.</li> <li>3. If the Student clicks on the “Play” button of one of the Custom Levels in the list, the PlayLevel use case is used.</li> <li>4. If the Student clicks on the “View Created Levels” button, the ViewYourCreatedLevels use case is used.</li> <li>5. If the Student clicks on the “Create Level” button, the CreateLevel use case is used.</li> </ol> |
| <b>Alternative Flows:</b> | N/A   |
| <b>Exception:</b>         | N/A   |
| <b>Includes:</b>          | N/A   |
| <b>Extends:</b>           | ViewYourCreatedLevels, CreateLevel, PlayLevel   |
| <b>Assumptions:</b>       | N/A   |

|                          |     |
|--------------------------|-----|
| <b>Notes and Issues:</b> | N/A |
|--------------------------|-----|

## 2.5 ViewYourCreatedLevels

|                       |                       |                           |               |
|-----------------------|-----------------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 5                     |                           |               |
| <b>Use Case Name:</b> | ViewYourCreatedLevels |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee         | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020            | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |  |
|---------------------------|--|
| <b>Actor:</b>             | N/A  |
| <b>Description:</b>       | <p>Students can view/edit/delete the Custom Levels created by himself/herself.</p> <p>The View Created Levels page consists of a list of Custom Levels created by the Student himself/herself. Beside every Custom Level is an edit button and a delete button.</p>                |
| <b>Preconditions:</b>     | <ol style="list-style-type: none"> <li>1. The Student has logged in to the system successfully.</li> <li>2. The Student has clicked on one of the “View Created Levels” buttons on the Custom Levels page</li> </ol>   |
| <b>Postconditions:</b>    | <ol style="list-style-type: none"> <li>1. The View Created Levels page is displayed successfully.</li> </ol>   |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. System displays the View Created Levels page.</li> <li>2. If the Student clicks on the edit button, the EditLevel use case is used.</li> <li>3. If the Student clicks on the delete button, the DeleteLevel use case is used.</li> </ol> |
| <b>Alternative Flows:</b> | N/A  |
| <b>Exception:</b>         | N/A  |
| <b>Includes:</b>          | N/A  |
| <b>Extends:</b>           | EditLevel, DeleteLevel   |
| <b>Assumptions:</b>       | N/A  |
| <b>Notes and Issues:</b>  | N/A  |



## 2.6 CreateLevel

|                       |               |                           |               |
|-----------------------|---------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 6             |                           |               |
| <b>Use Case Name:</b> | CreateLevel   |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020    | <b>Date Last Updated:</b> | 07/02/2020    |

|                        |  |
|------------------------|--|
| <b>Actor:</b>          | N/A  |
| <b>Description:</b>    | <p>The Level Creation page allows Students and Teachers to create a Custom Level or an Assignment respectively.</p> <p>A template is used to help users create a Custom Level or an Assignment. The template consists of 2 phases:<br/>Set-Level-Parameters and Set-Questions.</p> <p>In the Set-Level-Parameters phase, the user enters the Custom Level/Assignment name, Monster, and time limit.</p> <p>In the Set-Questions phase, the user enters the question and 4 options into the fields provided for each question. Each option field has a checkbox. Checking the checkbox indicates that the corresponding option is the correct option for the question. Only 1 option can be selected as the correct answer.</p> |
| <b>Preconditions:</b>  | <ol style="list-style-type: none"> <li>1. The user has logged in to the system successfully.</li> <li>2. The [Student has clicked on the “Create Level” button on the Custom Levels page] or [Teacher has clicked on the “Create Assignment” on the Teacher’s Assignments page].</li> </ol>  |
| <b>Postconditions:</b> | <ol style="list-style-type: none"> <li>1. The Custom Level or Assignment is created successfully.</li> </ol>   |
| <b>Flow of Events:</b> | <ol style="list-style-type: none"> <li>1. System displays the Level Creation page.</li> <li>2. System displays the Set-Level-Parameters phase of the template.</li> </ol>  |

|                           |   |
|---------------------------|---|
|                           | <ol style="list-style-type: none"> <li>3. The user enters the question and options in respective fields provided.</li> <li>4. The user sets the correct option.</li> <li>5. The user clicks on the next question.</li> <li>6. The user repeats steps 2 to 5 until all 5 questions have been instantiated.</li> <li>7. The user clicks on the “Create” button.</li> <li>8. The user is redirected to the Main Menu page.</li> <li>9. System displays the message “Created successfully!” for 2 seconds.</li> </ol>   |
| <b>Alternative Flows:</b> | N/A   |
| <b>Exception:</b>         | <p>EX1: If there are missing user input in any fields.</p> <ol style="list-style-type: none"> <li>1. System directs the user to the location of the error.</li> <li>2. System displays the error message “Question <math>x</math> has missing fields!”, where <math>x</math> is a question number.</li> </ol> <p>EX2: If there are duplication options for the same question.</p> <ol style="list-style-type: none"> <li>1. System directs the user to the location of the error.</li> <li>2. System displays the error message “Question <math>x</math> has duplicate options!”, where <math>x</math> is a question number.</li> </ol> |
| <b>Includes:</b>          | N/A   |
| <b>Extends:</b>           | N/A   |
| <b>Assumptions:</b>       | N/A   |
| <b>Notes and Issues:</b>  | N/A   |

## 2.7 PlayLevel

|                       |               |                           |               |
|-----------------------|---------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 7             |                           |               |
| <b>Use Case Name:</b> | PlayLevel     |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020    | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |   |
|---------------------------|---|
| <b>Actor:</b>             | N/A   |
| <b>Description:</b>       | Students can play Campaign Levels, Custom Levels made by Students, and Assignments made by Teachers.  |
| <b>Preconditions:</b>     | <ol style="list-style-type: none"> <li>1. The Student has logged in to the system successfully.</li> <li>2. The Student has clicked on [one of the unlocked Levels in the Campaign Section/Level Selection page] or [one of the “Play” buttons on the Custom Levels page or Student’s Assignments page].</li> </ol>   |
| <b>Postconditions:</b>    | <ol style="list-style-type: none"> <li>1. The Student wins/fails the Level.</li> </ol>  |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. System displays a question from the selected Campaign Level/Custom Level/Assignment.</li> <li>2. The Student selects one of the 4 options for the displayed question.</li> <li>3. If the Student’s answer is correct, the Student’s Character will launch an attack at the monster.</li> <li>4. Repeat steps 1 to 3 until all questions have been answered.</li> <li>5. System will compute the score and stars based on the remaining time left.</li> <li>6. A popup menu will be displayed to show the Students how many stars they have gotten when the Level ends.</li> </ol> |
| <b>Alternative Flows:</b> | <p>AF-S3: If the Student’s answer is incorrect.</p> <ol style="list-style-type: none"> <li>1. The monster will launch an attack at the Student’s Character.</li> </ol>  |

|                          |   |
|--------------------------|---|
|                          | <ol style="list-style-type: none"> <li>2. System deducts 10 seconds from the remaining time.</li> <li>3. Go back to step 2 in Flow of Events.</li> </ol>  |
| <b>Exception:</b>        | <p>EX1: The remaining time reaches 0.</p> <ol style="list-style-type: none"> <li>1. The Student fails the challenge.</li> <li>2. The Student receives 0 stars.</li> <li>3. Go back to step 6 in Flow of Events</li> </ol> |
| <b>Includes:</b>         | N/A   |
| <b>Extends:</b>          | N/A   |
| <b>Assumptions:</b>      | N/A   |
| <b>Notes and Issues:</b> | N/A   |



## 2.8 EditLevel

|                       |               |                           |               |
|-----------------------|---------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 8             |                           |               |
| <b>Use Case Name:</b> | EditLevel     |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020    | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |  |
|---------------------------|--|
| <b>Actor:</b>             | N/A  |
| <b>Description:</b>       | <p>The Edit Level page allows Students and Teachers to edit a Custom Level or Assignment respectively.</p> <p>The Edit Level page is identical to the Level Creation page but the template is instantiated with the selected Custom Level or Assignment.</p>   |
| <b>Preconditions:</b>     | <ol style="list-style-type: none"> <li>1. The user has logged in to the system successfully.</li> <li>2. The [Student has clicked on one of the edit buttons on the View Created Levels page] or [Teacher has clicked on one of the edit buttons on the Teacher's Assignments page].</li> </ol>  |
| <b>Postconditions:</b>    | <ol style="list-style-type: none"> <li>1. The selected Custom Level or Assignment is edited successfully.</li> </ol>   |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. System displays the Edit Level page.</li> <li>2. The user selects a question to edit.</li> <li>3. The user edits the question and options.</li> <li>4. The user repeats steps 2 to 3 until he/she has finished all the desired edits.</li> <li>5. The user clicks on the "Update" button.</li> <li>6. The user is redirected to the Main Menu page.</li> <li>7. System displays the message "Edited successfully!" for 2 seconds.</li> </ol> |
| <b>Alternative Flows:</b> | N/A  |

|                          |   |
|--------------------------|---|
| <b>Exception:</b>        | <p>EX1: If there are missing user input in any fields.</p> <ol style="list-style-type: none"> <li>1. System directs the user to the location of the error.</li> <li>2. System displays the error message “Question <math>x</math> has missing fields!”, where <math>x</math> is a question number.</li> </ol> <p>EX2: If there are duplication options for the same question.</p> <ol style="list-style-type: none"> <li>1. System directs the user to the location of the error.</li> <li>2. System displays the error message “Question <math>x</math> has duplicate options!”, where <math>x</math> is a question number.</li> </ol> |
| <b>Includes:</b>         | N/A   |
| <b>Extends:</b>          | N/A   |
| <b>Assumptions:</b>      | N/A   |
| <b>Notes and Issues:</b> | N/A   |

## 2.9 ViewAssignments

|                       |                 |                           |               |
|-----------------------|-----------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 9               |                           |               |
| <b>Use Case Name:</b> | ViewAssignments |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee   | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020      | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |  |
|---------------------------|--|
| <b>Actor:</b>             | Teacher  |
| <b>Description:</b>       | Teachers can view/create/edit/delete/publish Assignments. The Teacher's Assignments page consists of a list of Assignments created by the Teacher himself/herself, a "Create Assignment" button, and a "Publish Assignment" button. Beside every Assignment is an edit button, and a delete button.  |
| <b>Preconditions:</b>     | 1. The Teacher has logged in to the system successfully.   |
| <b>Postconditions:</b>    | 1. The Teacher's Assignments page is displayed successfully.   |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. The Teacher clicks on the "Assignments" button on the Main Menu page.</li> <li>2. System redirects to the Teacher's Assignments page.</li> <li>3. If the Teacher clicks on the "Create Assignment" button, the extended use case CreateLevel is used.</li> <li>4. If the Teacher clicks on the "Publish Assignment" button, the extended use case Publish is used.</li> <li>5. If the Teacher clicks on the edit button, the extended use case EditLevel is used.</li> <li>6. If the Teacher clicks on the delete button, the DeleteLevel use case is used.</li> </ol> |
| <b>Alternative Flows:</b> | N/A  |
| <b>Exception:</b>         | N/A  |
| <b>Includes:</b>          | N/A  |

## Use Case Model

|                          |  |
|--------------------------|--|
| <b>Extends:</b>          | CreateLevel, EditLevel, Publish, DeleteLevel |
| <b>Assumptions:</b>      | N/A  |
| <b>Notes and Issues:</b> | N/A  |

## 2.10 Publish

|                       |               |                           |               |
|-----------------------|---------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 10            |                           |               |
| <b>Use Case Name:</b> | Publish       |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020    | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |  |
|---------------------------|--|
| <b>Actor:</b>             | N/A  |
| <b>Description:</b>       | The Publish Assignment page consists of 2 fields, 1 for selecting an Assignment, and the other for selecting Classes.  |
| <b>Preconditions:</b>     | <ol style="list-style-type: none"> <li>1. The Teacher has logged in to the system successfully.</li> <li>2. The Teacher has clicked on the “Publish Assignment” button on the Teacher’s Assignments page.</li> </ol>   |
| <b>Postconditions:</b>    | <ol style="list-style-type: none"> <li>1. The Assignment is published successfully.</li> </ol>   |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. The system redirects to the Publish Assignment page.</li> <li>2. The Teacher selects the Assignment he/she would like to publish.</li> <li>3. The Teacher selects the Classes that he/she would like to publish the Assignment to.</li> <li>4. The Teacher clicks on the “Publish” button.</li> <li>5. System redirects back to the Main Menu page.</li> <li>6. System displays the message “Assignment published successfully!” for 2 seconds.</li> </ol> |
| <b>Alternative Flows:</b> | N/A  |
| <b>Exception:</b>         | N/A  |
| <b>Includes:</b>          | N/A  |
| <b>Extends:</b>           | N/A  |
| <b>Assumptions:</b>       | N/A  |

|                          |     |
|--------------------------|-----|
| <b>Notes and Issues:</b> | N/A |
|--------------------------|-----|

## 2.11 ViewPublishedAssignments

|                       |                          |                           |               |
|-----------------------|--------------------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 11                       |                           |               |
| <b>Use Case Name:</b> | ViewPublishedAssignments |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee            | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020               | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |  |
|---------------------------|--|
| <b>Actor:</b>             | Student  |
| <b>Description:</b>       | Students can view the Assignments created by their Teachers through the Student's Assignments page.  |
| <b>Preconditions:</b>     | 1. The Student has logged in to the system successfully.   |
| <b>Postconditions:</b>    | 1. The Student's Assignments page is displayed successfully.   |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. The Student clicks on the "Assignments" button on the Main Menu page.</li> <li>2. System redirects to the Student's Assignments page where the available Assignments are displayed.</li> <li>3. If the Student clicks on one of the "Play" buttons beside an Assignment, the extended use case PlayLevel is used.</li> </ol> |
| <b>Alternative Flows:</b> | N/A  |
| <b>Exception:</b>         | N/A  |
| <b>Includes:</b>          | N/A  |
| <b>Extends:</b>           | PlayLevel  |
| <b>Assumptions:</b>       | N/A  |
| <b>Notes and Issues:</b>  | N/A  |





## 2.12 ViewLeaderboard

|                       |                 |                           |               |
|-----------------------|-----------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 12              |                           |               |
| <b>Use Case Name:</b> | ViewLeaderboard |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee   | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020      | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |  |
|---------------------------|--|
| <b>Actor:</b>             | Student  |
| <b>Description:</b>       | <p>The Leaderboard displays a list of all the Students arranged by their ranks which are determined by their score.</p> <p>There are 2 types of Leaderboard:</p> <ul style="list-style-type: none"> <li>- Leaderboard that is computed based on the total score across all Worlds.</li> <li>- Leaderboard for individual Worlds.</li> </ul>  |
| <b>Preconditions:</b>     | 1. The Student has logged in to the system successfully.   |
| <b>Postconditions:</b>    | 2. The Leaderboard is displayed successfully.  |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. The Student clicks on the “Leaderboard” button on the Main Menu page.</li> <li>2. System redirects to the Leaderboard page where the Leaderboard that is computed based on the total score across all Worlds is displayed by default.</li> <li>3. To view the other type of Leaderboard, the Student clicks on the dropdown list.</li> <li>4. The dropdown list displays a list of all the available Worlds.</li> <li>5. The Student selects a desired World.</li> <li>6. The Leaderboard display is updated accordingly.</li> </ol> |
| <b>Alternative Flows:</b> | N/A  |

## Use Case Model

|                          |     |
|--------------------------|-----|
| <b>Exception:</b>        | N/A |
| <b>Includes:</b>         | N/A |
| <b>Extends:</b>          | N/A |
| <b>Assumptions:</b>      | N/A |
| <b>Notes and Issues:</b> | N/A |

## 2.13 ChallengeCampaign

|                       |                   |                           |               |
|-----------------------|-------------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 13                |                           |               |
| <b>Use Case Name:</b> | ChallengeCampaign |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee     | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020        | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |   |
|---------------------------|---|
| <b>Actor:</b>             | Student   |
| <b>Description:</b>       | Students can challenge the Campaign Levels.   |
| <b>Preconditions:</b>     | 1. The Student has logged in to the system successfully.  |
| <b>Postconditions:</b>    | 1. The available Worlds are displayed successfully.   |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. The Student clicks on the “Campaign” button on the Main Menu page.</li> <li>2. System redirects to the Campaign World Selection page where all the available Worlds are displayed.</li> <li>3. The included use cases: SelectWorld, SelectSection, and SelectLevel are used.</li> </ol> |
| <b>Alternative Flows:</b> | N/A   |
| <b>Exception:</b>         | N/A   |
| <b>Includes:</b>          | SelectWorld, SelectSection, SelectLevel   |
| <b>Extends:</b>           | N/A   |
| <b>Assumptions:</b>       | N/A   |
| <b>Notes and Issues:</b>  | N/A   |

## 2.14 SelectWorld

|                       |               |                           |               |
|-----------------------|---------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 14            |                           |               |
| <b>Use Case Name:</b> | SelectWorld   |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020    | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |   |
|---------------------------|---|
| <b>Actor:</b>             | N/A   |
| <b>Description:</b>       | Students can select one of the several Worlds available through the Campaign World Selection page.  |
| <b>Preconditions:</b>     | <ol style="list-style-type: none"> <li>1. The Student has logged in to the system successfully.</li> <li>2. The Student has clicked on the “Campaign” button on the Main Menu page.</li> </ol>    |
| <b>Postconditions:</b>    | <ol style="list-style-type: none"> <li>1. The first Section of the World selected and its Campaign Levels are displayed.</li> </ol>   |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. System redirects to the Campaign World Selection page where all the available Worlds are displayed.</li> <li>2. The Student selects a World.</li> </ol> |
| <b>Alternative Flows:</b> | N/A   |
| <b>Exception:</b>         | N/A   |
| <b>Includes:</b>          | N/A   |
| <b>Extends:</b>           | N/A   |
| <b>Assumptions:</b>       | N/A   |
| <b>Notes and Issues:</b>  | N/A   |

## 2.15 SelectSection

|                       |               |                           |               |
|-----------------------|---------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 15            |                           |               |
| <b>Use Case Name:</b> | SelectSection |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020    | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |  |
|---------------------------|--|
| <b>Actor:</b>             | N/A  |
| <b>Description:</b>       | On the Campaign Section/Level Selection, Students can select one of the Sections available in the World selected.  |
| <b>Preconditions:</b>     | <ol style="list-style-type: none"> <li>1. The Student has logged in to the system successfully.</li> <li>2. The Student has selected a World on the Campaign World Selection page.</li> </ol>  |
| <b>Postconditions:</b>    | <ol style="list-style-type: none"> <li>1. The corresponding Levels of the Section selected are displayed.</li> </ol>   |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. System displays the Campaign Section/Level Selection page where the first Section of the World selected and its Campaign Levels are displayed.</li> <li>2. The Student selects a Section.</li> </ol> |
| <b>Alternative Flows:</b> | N/A  |
| <b>Exception:</b>         | N/A  |
| <b>Includes:</b>          | N/A  |
| <b>Extends:</b>           | N/A  |
| <b>Assumptions:</b>       | N/A  |
| <b>Notes and Issues:</b>  | N/A  |

## 2.16 SelectLevel

|                       |               |                           |               |
|-----------------------|---------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 16            |                           |               |
| <b>Use Case Name:</b> | SelectLevel   |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020    | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |  |
|---------------------------|--|
| <b>Actor:</b>             | N/A  |
| <b>Description:</b>       | Students can select one of the Levels available in the Section selected.   |
| <b>Preconditions:</b>     | <ol style="list-style-type: none"> <li>1. The Student has logged in to the system successfully.</li> <li>2. The Student has selected a World on the Campaign World Selection page.</li> <li>3. The Student has selected a Section on the Campaign Section/Level Selection page.</li> </ol> |
| <b>Postconditions:</b>    | <ol style="list-style-type: none"> <li>1. The corresponding questions of the Campaign Level selected are displayed.</li> </ol>   |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. If the Student selects a Campaign Level on the Campaign Section/Level Selection page, the included use case PlayLevel is used.</li> </ol>  |
| <b>Alternative Flows:</b> | N/A  |
| <b>Exception:</b>         | N/A  |
| <b>Includes:</b>          | PlayLevel  |
| <b>Extends:</b>           | N/A  |
| <b>Assumptions:</b>       | N/A  |
| <b>Notes and Issues:</b>  | N/A  |

## 2.17 ViewSummaryReport

|                       |                   |                           |               |
|-----------------------|-------------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 17                |                           |               |
| <b>Use Case Name:</b> | ViewSummaryReport |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee     | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020        | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |  |
|---------------------------|--|
| <b>Actor:</b>             | Teacher  |
| <b>Description:</b>       | <p>The Summary Report page consists of the analysis results of the playing history of Students.</p> <p>The analysis results shows:</p> <ul style="list-style-type: none"> <li>- average score for each Level/Section/World</li> <li>- depending on the average score, parts that are well-mastered by the Students are highlighted in green, and parts that are not are highlighted in red.</li> </ul> |
| <b>Preconditions:</b>     | 1. The Teacher has logged in to the system successfully.   |
| <b>Postconditions:</b>    | 1. Summary report of the analysis is displayed successfully.   |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. The Teacher clicks on the “Summary Report” button on the Main Menu page.</li> <li>2. System redirects to the Summary Report page.</li> <li>3. The Teacher can choose to analyse the playing history of all Students or Students of a particular class group or Students of the class groups created by the Teacher.</li> </ol>                               |
| <b>Alternative Flows:</b> | N/A  |
| <b>Exception:</b>         | N/A  |
| <b>Includes:</b>          | N/A  |
| <b>Extends:</b>           | N/A  |
| <b>Assumptions:</b>       | N/A  |

|                          |     |
|--------------------------|-----|
| <b>Notes and Issues:</b> | N/A |
|--------------------------|-----|



## 2.18 ViewSettings

|                       |               |                           |               |
|-----------------------|---------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 18            |                           |               |
| <b>Use Case Name:</b> | ViewSettings  |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020    | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |  |
|---------------------------|--|
| <b>Actor:</b>             | Student  |
| <b>Description:</b>       | Students can change the volume of the background music (BGM) and special effects (SFX).  |
| <b>Preconditions:</b>     | 1. The Student has logged in to the system successfully.   |
| <b>Postconditions:</b>    | 1. The Adjust Volume page is displayed successfully.   |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. The Student clicks on the settings button on the Main Menu page.</li> <li>2. The Adjust Volume page is displayed.</li> <li>3. If the volume of either BGM or SFX has been adjusted, the extended use case AdjustVolume is used.</li> </ol> |
| <b>Alternative Flows:</b> | N/A  |
| <b>Exception:</b>         | N/A  |
| <b>Includes:</b>          | N/A  |
| <b>Extends:</b>           | AdjustVolume   |
| <b>Assumptions:</b>       | N/A  |
| <b>Notes and Issues:</b>  | N/A  |

## 2.19 AdjustVolume

|                       |               |                           |               |
|-----------------------|---------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 19            |                           |               |
| <b>Use Case Name:</b> | AdjustVolume  |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020    | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |   |
|---------------------------|---|
| <b>Actor:</b>             | N/A   |
| <b>Description:</b>       | Determines the effect of Student dragging the slider to adjust the volume for BGM or SFX.   |
| <b>Preconditions:</b>     | <ol style="list-style-type: none"> <li>1. The Student has logged in to the system successfully.</li> <li>2. The Student is adjusting the volume of BGM or SFX.</li> </ol> |
| <b>Postconditions:</b>    | <ol style="list-style-type: none"> <li>1. The volume of BGM or SFX is adjusted successfully.</li> </ol>   |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. If the Student drags the slider for either the BGM or SFX towards the right, the corresponding volume increases.</li> </ol>     |
| <b>Alternative Flows:</b> | AF1: If the Student drags the slider for either the BGM or SFX towards the left. <ol style="list-style-type: none"> <li>1. The corresponding volume decreases.</li> </ol> |
| <b>Exception:</b>         | N/A   |
| <b>Includes:</b>          | N/A   |
| <b>Extends:</b>           | N/A   |
| <b>Assumptions:</b>       | N/A   |
| <b>Notes and Issues:</b>  | N/A   |

## 2.20 ViewCredits

|                       |               |                           |               |
|-----------------------|---------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 20            |                           |               |
| <b>Use Case Name:</b> | ViewCredits   |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020    | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |   |
|---------------------------|---|
| <b>Actor:</b>             | Student, Teacher  |
| <b>Description:</b>       | Users can view the credits for the assets used in this application.                                       |
| <b>Preconditions:</b>     | 1. The user has logged in to the system successfully.   |
| <b>Postconditions:</b>    | 1. The Credits page is displayed successfully   |
| <b>Flow of Events:</b>    | 1. The Student clicks on the Credits button on the Main Menu.<br>2. The system displays the Credits page. |
| <b>Alternative Flows:</b> | N/A   |
| <b>Exception:</b>         | N/A   |
| <b>Includes:</b>          | N/A   |
| <b>Extends:</b>           | N/A   |
| <b>Assumptions:</b>       | N/A   |
| <b>Notes and Issues:</b>  | N/A   |

## 2.21 DeleteLevel

|                       |               |                           |               |
|-----------------------|---------------|---------------------------|---------------|
| <b>Use Case ID:</b>   | 21            |                           |               |
| <b>Use Case Name:</b> | DeleteLevel   |                           |               |
| <b>Created By:</b>    | Yuen Kim Hwee | <b>Last Updated By:</b>   | Yuen Kim Hwee |
| <b>Date Created:</b>  | 05/02/2020    | <b>Date Last Updated:</b> | 07/02/2020    |

|                           |   |
|---------------------------|---|
| <b>Actor:</b>             | N/A   |
| <b>Description:</b>       | Students and Teachers can delete a Custom Level or Assignment respectively.   |
| <b>Preconditions:</b>     | <ol style="list-style-type: none"> <li>1. The user has logged in to the system successfully.</li> <li>2. The [Student has clicked on one of the delete buttons on the View Created Levels page] or [Teacher has clicked on one of the delete buttons on the Teacher's Assignments page].</li> </ol> |
| <b>Postconditions:</b>    | <ol style="list-style-type: none"> <li>1. If the user clicks yes in the confirmation prompt, the Custom Level or Assignment is deleted successfully.</li> <li>2. If the user clicks no in the confirmation prompt, no changes will occur.</li> </ol>  |
| <b>Flow of Events:</b>    | <ol style="list-style-type: none"> <li>1. The system will prompt for confirmation before deleting the selected Custom Level or Assignment.</li> <li>2. If the user clicks yes, the selected Custom Level or Assignment will be deleted.</li> </ol>  |
| <b>Alternative Flows:</b> | AF2: If the user clicks no. <ol style="list-style-type: none"> <li>1. The selected Custom Level or Assignment will not be deleted.</li> </ol>   |
| <b>Exception:</b>         | N/A   |
| <b>Includes:</b>          | N/A   |
| <b>Extends:</b>           | N/A   |

## Use Case Model

|                          |     |
|--------------------------|-----|
| <b>Assumptions:</b>      | N/A |
| <b>Notes and Issues:</b> | N/A |