Cairo University  
Faculty of Computers and Information



**CS251**

**Software Engineering I**

Project Name

Software Requirements Specifications

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# Team

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# Document Purpose and Audience

* This is a Requirements Analysis Document. The document completely describes the system's functional, nonfunctional requirements, scenarios, use-cases and eradicates the conflicts between the client and the developers.
* The audience for this document include the users (Teacher, Student), client, the system developers, Project management team and the system designers.

# Introduction

## Software Purpose :

* Web based educational system target to make easy communication between the teacher and the student for easy and fun way for learning educational fields using games.

## Software Scope :

* The website severs two types of users with different capabilities
  + The teacher can create, delete and edit his\her games also he can create class rooms and play games .
  + The student can play games, enter class rooms of certain teacher, and has his's\her's score and total score in each class room.
* The website offers playing or creating games according to premade templates in three different categories (match picture, multiple choice game, and run code game) for the teacher.

# Requirements :

## Functional Requirements :

1. Two interface
2. Register new account for both teachers and students
3. Login and logout.
4. View and edit profile
5. Play game.
6. Create game.
7. Edit game.
8. Delete game.
9. Rating and commenting on games.

**1 – Two interface:**

**The first:** will have three buttons register as teacher , register as student , login

**The second:** will have toolbar contains four tabs (profile , play game , score , my games).

**2 - Register new account for both teachers and students:**

The user will select to register as teacher or as student in the first interface , then the user will enter the Needed information (name , age , gender , email) , the data will be validated and this email will be authenticated .

**3- Login and logout:**

The user will select Login in the first interface: user will enter his\her email and his\her password and then this data will be validated.

The user will select logout in the second interface: end the current login session.

**4- View and edit profile:**

The user will select my profile from the second interface,The user edit this profile information, play game, show his\her score.

**5- Play Game:**

The user will select play game in the second interface then click the category, then select subject, then chooses the game. And start a game after that provide a game interface and controls according game templates. When the player wins or loses his\her score will be calculated then it will be added to his\her total score.

**6- Create game:**

The teacher will click my games in the second interface, choose create game, then select the game category, he will enter the information (i.e. name, subject, age recommendation…),

And the game information according to the category then click publish game

**7-Edit game:**

The teacher will click my games, select the game he\she wants to edit, and then he\she will be able to change the information of the game.

**8-Delete game**

The teacher will click my games; select the game he\she wants to delete.

**9 - Rating and commenting on games:**

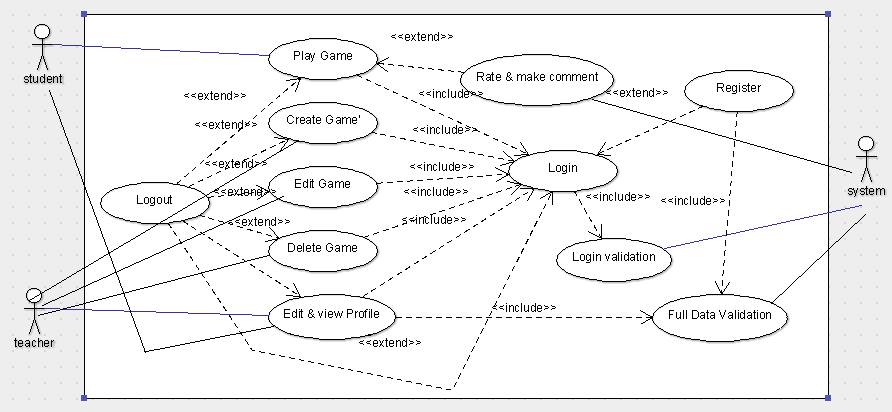
After playing the game the player will be able to rate and comment the game.

## Non Functional Requirements :

|  |  |
| --- | --- |
|  | **Details** |
| **Performance** | * **Fast response time to support interactive playing.** |
| **Security** | * **Users must register by using a valid e-mail address before they can use the website’s functions.** * **All Users’ personal data is secured and encrypted.** |
| **Usability** | * **Friendly user interface: The User interface is easy to use and understand its components; also it consists of eye catching colors and graphics to attract children attention.** * **Easy to play: Games starts with tutorials to get the users to be adapted to game controls and rules.** |
| **Supportability** | * **The website supports different subjects such as Math, Science, Technology, etc…** * **Different difficulty levels which suits all types of users and supports their learning process.** * **The website contains games which suits different cultures and languages to span a wide range of users.** |
| **Interface** | * **The website offers different user interfaces for each type of user (Teacher, Student, Unregistered user) which contains the different functions they need to use the website.** |

# System Models

## Use Case Model :

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## Use Case Tables **:**

|  |  |  |
| --- | --- | --- |
| Use Case ID: | 1 | |
| Use Case Name: | Play Game | |
| Actors: | Teacher , Student | |
| Pre-conditions: | Login | |
| Post-conditions: | View Score of the game | |
| Flow of events: | **User Action** | **System Action** |
| 1- user Select play game tab |  |
|  | 2- system will display the Subjects list . |
| 3 – user will choose the subjects |  |
|  | 4- system will display the games  Categories |
| 5- user will choose the category |  |
|  | 6 – system will display the games |
|  | 7-user will choose the game |  |
|  |  | 8-system will display the game |
|  | 9-user will play the game |  |
|  | 10 – after the end of the game |  |
|  |  | 11- the system will prompt result message and the score , increase the total score of the user , show the rate and comment page |
|  |  | 12 – the system prompt two choices  Play again , back to all games |
| Exceptions: | **User Action** | **System Action** |
| 1-If user wants to logout, he clicks on logout button, which exist on the tool bar. |  |
|  | 2- System ends the current login session and displays the main interface. |
| Includes: | Login | |
| Notes and Issues: |  | |

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| --- | --- | --- |
| Use Case ID: | 2 | |
| Use Case Name: | Edit and view profile | |
| Actors: | Teacher , Student | |
| Pre-conditions: | Login | |
| Post-conditions: | View the updated profile | |
| Flow of events: | **User Action** | **System Action** |
| 1- user Select profile tab |  |
|  | 2- System will display the profile . |
| 3 – the user select edit tab |  |
|  | 4- system will give a permission to edit the information |
| 5- user will edit the information and select save button |  |
|  | 6 – system will validate the updated information |
|  |  | 7 – system will update the information to the server |
|  |  | 8-system will display the profile |
| Exceptions: | **User Action** | **System Action** |
| 1- the user didn't select edit tab |  |
|  | 2- interface stay as it unless the user clicked any other tab in the interface |
|  | 3 – the user didn't select save |  |
|  |  | 4- the entered data will be neglected |
|  | 5 – the validation function return false on the entered data |  |
|  |  | 6 - the entered data will be neglected |
|  | 7-If user wants to logout, he clicks on logout button, which exist on the tool bar. |  |
|  |  | 8- System ends the current login session and displays the main interface. |
| Includes: | Login ,validation | |
| Notes and Issues: |  | |

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| --- | --- | --- |
| Use Case ID: | 3 | |
| Use Case Name: | Register | |
| Actors: | Site new user | |
| Pre-conditions: | The website opened | |
| Post-conditions: | The User will have a new account | |
| Flow of events: | **User Action** | **System Action** |
|  | 1 – the system will display the first interface |
| 2 – the user will choose Student Registration or Teacher Registration |  |
|  | 3 – system will display The chosen registration form |
| 4 – the user enter The Data |  |
|  | 5 – The System will validate this data |
|  |  | 6 - System will create a new account |
| Exceptions: | **User Action** | **System Action** |
| 1- the entered data is not valid |  |
|  | 2- The system will inform the new user to enter the data correctly |
|  | 3-If user wants to logout, he clicks on logout button, which exist on the tool bar. |  |
|  |  | 4- System ends the current login session and displays the main interface. |
| Includes: | Full Data Validation | |
| Notes and Issues: |  | |

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| --- | --- | --- |
| Use Case ID: | 4 | |
| Use Case Name: | Rate and comment | |
| Actors: | Student and teacher | |
| Pre-conditions: | The game session ended | |
| Post-conditions: | Notify the teacher who make the game with the rate or comment | |
| Flow of events: | **User Action** | **System Action** |
|  | 1. System will display the rating & commenting window |
| 2 – the user will rate the game (interesting, normal, boring) . |  |
|  | 3 – system will update the rating of the game to the server |
| 4 – the user enter a comment |  |
|  | 5 - system will update the comment of the game to the server |
|  | 6 – the system will notify the teacher who make the game with the rate or comment |
|  |  | 7 – system will return to the game |
| Exceptions: | **User Action** | **System Action** |
|  | 1-If user wants to logout, he clicks on logout button, which exist on the tool bar. |  |
|  |  | 2- System ends the current login session and displays the main interface. |
| Includes: | Login ,validation | |
| Notes and Issues: |  | |

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| --- | --- | --- |
| Use Case ID: | 5 | |
| Use Case Name: | Delete Game | |
| Actors: | Teacher | |
| Pre-conditions: | User is logged in as a Teacher , Game already exist | |
| Post-conditions: | Game is deleted. | |
| Flow of events: | **User Action** | **System Action** |
| 1- User selects the game he\she wants to delete from “My Games” tab, then click on delete button. |  |
|  | 2- System prompts a message box to confirm deletion process. |
| 3- User confirms deletion process by pressing “OK” button which exist in the message box. |  |
|  | 4- System deletes the game, and prompts a message to confirm that deletion process done successfully, the returns to “My Games” tab. |
|  |  |
| Exceptions: | **User Action** | **System Action** |
| 1. 1- if the user click cancel on the confirmation message |  |
|  | 2 – the system doesn't change |
| 1. 3 - If user wants to logout, he clicks on logout button, which exist on the tool bar. |  |
|  | 4- System ends the current login session and displays the main interface. |
| Includes: | Login | |
| Notes and Issues: |  | |

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| --- | --- | --- |
| Use Case ID: | 6 | |
| Use Case Name: | Edit Game | |
| Actors: | Teacher | |
| Pre-conditions: | User is logged in as a Teacher , Game already exist | |
| Post-conditions: | Game is edited. | |
| Flow of events: | **User Action** | **System Action** |
| 1- User selects the game he\she wants to edit from “My Games” tab, then click on edit button. |  |
|  | 2-System display interface contains the tools to edit the game. |
| 3 – user will edit the game and click save |  |
|  | 4-System prompts a message box to confirm save edition. |
| 5- User confirms edition process by pressing “Save” button which exist in the message box. |  |
|  | 6- System edition the game, and prompts a message to confirm that edition process done successfully. |
| Exceptions: | **User Action** | **System Action** |
| 1. If user wants to logout, he clicks on logout button, which exist on the tool bar. |  |
|  | 2- System ends the current login session and displays the main interface. |
|  | 3-the user didn't click save |  |
|  |  | 4-the system will neglect the  change |
| Includes: | Login | |
| Notes and Issues: |  | |

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| --- | --- | --- |
| Use Case ID: | 7 | |
| Use Case Name: | Create Game | |
| Actors: | Teacher | |
| Pre-conditions: | User is logged in as a Teacher | |
| Post-conditions: | Game is created. | |
| Flow of events: | **User Action** | **System Action** |
| 1- User click “My Games” tab, from the toolbar,click “Create New Game” button |  |
|  | 1. System prompts a new interface which contain tools the new game. |
| 3- user will select the category he want and make the game according to the template in the interface |  |
| 4 – user will click save button |  |
|  | 5-System prompts a message box to confirm save edition. |
| 6- User confirms creation process by pressing “Save” button which exist in the message box. |  |
|  | 7- System creates the game, and prompts a message to confirm that creation process done successfully, the returns to “My Games” tab. |
| Exceptions: | **User Action** | **System Action** |
| 1. If user wants to logout, he clicks on logout button, which exist on the tool bar. |  |
|  | 2- System ends the current login session and displays the main interface. |
|  | 3- the user didn't click save button |  |
|  |  | 4- the created game will be neglected |
| Includes: | Login | |
| Notes and Issues: |  | |

# Scenarios :

1 – **Play game :**

The User (teacher / Student) Selects "Play Game" Button , Then the system displays Subjects list in a new page , After choosing a Subject by the user , the system will display games categories list , user will choose the category Then He will Start The Game Directly , After The game end

**In Case Of Win :** The System will display a window with a text "Congratulation, you win The Game", then the system increase the score of this user and it will display a new page for the user to rate for this game and make a comment, it is an optional step, the user can skip it if he/she press on cancel button.

**In Case Of Lose :** The System will display a window with a text " unfortunately, you Lose The Game", then the system decreases the score of this user and it will display a new page for the user to rate for this game and make a comment, it is an optional step, the user can skip it if he/she press on cancel button .

# **2 - Edit and view profile :**

The use (Student / Teacher) selects “profile” button, then system prompts interface contain his\her profile.

* If user selects “Edit” button, system will give a permission to edit the information, user will edit the information and select “Save” button.
* If data is valid, system will validate the updated information, update the information to the server, system will display the profile again.
* If data isn’t valid, system will be neglected the changed data, then return profile interface.
* If user selects “Cancel” button instead of “Save” button, system will be neglected the changed data, then return profile interface.
* If user didn’t select “Edit” button, interface stay as it unless the user clicked any other tab in the interface.

If user wants to logout, he clicks on logout button, which exist on the tool bar, system ends the current login session and displays the main interface.

# 3-**Register**

When a new User open the website, he press on register button, the system will display the registration page and take some data from the user , after finishing this step the user press on submit button , then the system will confirm this data

- if this data is valid , then the new account will create , and the system will display a window with a text "New Account Created successfully" and the system will display the first user interface .

- If this data is not valid, the system will display a window with a text "This Data is not valid" and the registration page will freeze as it is

4 - **Rate and comment**

After the game end the system will display the rating & commenting window, user will rate the game “Interesting” or “Normal” or “Boring”, system will update the rating of the game to the server, the user enter a comment, system will update the comment of the game to the server, notify the teacher who make the game with the rate or comment and return to the game.

If user (Student, Teacher) cancel rating & commenting window, system will return to the game or user wants to logout, he clicks on logout button, which exist on the tool bar, system ends the current login session and displays the main interface.

**5 - Delete game scenario :**

the teacher will click “My Games” tab from the toolbar,then selects the game he\she wants to Delete and click on “Delete” button . System prompts a message box to confirm Delete of the game . if the teacher clicked “Delete” button, system will delete the game, and prompts a message to confirm that deletion process done successfully. If he didn't press “Delete” button and close the message box the game will not be deleted .

**6 - Edit game scenario :**

the teacher will click “My Games” tab from the toolbar,then selects the game he\she wants to edit and click on “Edit” button . then the System will display interface contains the tools to edit the game.the teacher will edit the game and click “Save” Button ,System prompts a message box to confirm save edition.if the teacher clicked “Save” button, system will edit the game, and prompts a message to confirm that edition process done successfully. If he didn't press “Save” button and close the message box the game will have no change .

**7 - Create game scenario :**

the teacher will click “My Games” tab from the toolbar,click create “New Game” button ,system prompts a new interface which contain tools the new game,then the teacher will select the category he want and make the game according to the template in the interface ,and enter the new game data the subject , category ,… , then click save ,the system prompts a message box to confirm save edition . and then the teacher confirms creation process by pressing “Save” button which exist in the message box . If he didn't press “Save” button and close the message box the game will not be uploaded to the system , if he click “Save” button system creates the game, and prompts a message to confirm that creation process done successfully, the returns to “My Games” tab.

# Ownership Report :

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| --- | --- |
| **Item** | **Owners** |
| Functional Requirements | Nour |
| Use case Model | Mazen |
| Non - Functional | Mahmoud |
| Scenarios | Mohamed |