Cairo University  
Faculty of Computers and Information



**CS251**

**Software Engineering I**

**Game based educational platform**

Requirements Specifications

Team Names

November 2016

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# Team

|  |  |  |  |
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# Document Purpose and Audience

**Target audience:**

**- Dr. AmrKamel**

**- TA. Mohammed Samir**

**Document purpose:**

**This document is going to address the functional requirements in our website, it also will address the requirement elicitation.**

**It will also describe the actors and contents of the project.**

**This document is supposed to simplify the website for the reader, so that when the reader reads it he knows what the website is about.**

**It will also make it easier for us in the design phase.**

# Introduction

## Software Purpose

**We provide educational games for students to play and learn. We aim to make students enjoy learning processby teaching concepts through games.**

**Our website also allows teachers who have created games, to share them with students all around the world.**

## Software Scope

**Components:**

* **Teacher**
* **Student**
* **Educational games**

**Major features:**

* **Provide educational games**
* **A separate category for coding**
* **Teachers can create, edit, and remove games**
* **Students can play games, rate games and comment on games.**
* **Teachers can respond to comments.**

## Definitions, acronyms, and abbreviations

**None**

# Requirements

## Functional Requirements

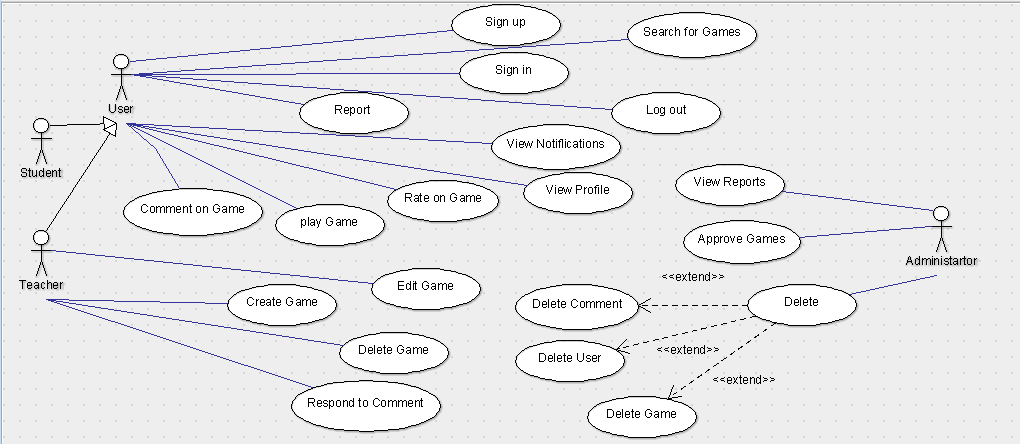
|  |  |
| --- | --- |
|  | **Details** |
| **Sign up** | * **Users in our website can have their own profiles, to create a profile they use the sign up function which allows them to input their required personal data and creates the account for them whether they are teachers or students.** * **After creating an account the user is directed to a tutorial on how to use the website for the first time, there are two tutorials based on account type as there are functions that are not shared between the two types** |
| **Login** | * **If the user already has an account, he can login to the websiteby entering his email then inputting his password then press login button** |
| **Logout** | * **The user ends his session by pressing log out button to exit his account, to prevent any unauthorized access to his personal data.** |
| **View Profile** | * **The user can log in to access the homepage then enter his account to view his profile data and functions that he has access on based on his type (teacher or student) by pressing about button** |
| **Play Game** | * **After logging in the user chooses the category he wants after that a list of games is displayed with description for each game then based on descriptions he can choose the game he likes.** |
| **Rate Game** | * **After playing a game User has the privilege of rating any game on the website, these ratings will be sent to the teacher who created the game under the condition: a teacher cannot rate his own game.** |
| **Make comment** | * **Users can make comments on any game. Comments are the communication links between teachers who created the game and the user who left the comment.** |
| **Respond to comments** | * **Teachers have the privilege to reply to the Users’ comments posted on their games.** |
| **Create Game** | * **Teachers whom created an account can create a game they see educational for users by writing a code and uploading it to the server then specifying the category and writing a description for the game.** |
| **Edit Game** | * **A teacher can edit a game he has created by adding a new feature , solving a bug , etc.** |
| **Remove Game** | * **A teacher can remove a game he has created by pressing the remove button, the remove button asks the teacher if he’s sure then if he clicks yes then the game’s source code is taken down from the server and any rates or comments disappear under the condition: any active session during the deletion process is terminated.** |
| **Search for games** | * **The user can search for a specific game that he knows its name, using the search bar.** |
| **View notifications** | * **The user views his notifications such as comments and responds to it using the notification tab.** |
| **Delete** | * **The administrator could delete a comment or user or game based on the report.** |
| **View Reports** | * **The administrator could view reports made by users on his home page.** |
| **Approve games** | * **Any created game should be approved by the administrator before it is available for the user to play or even see.** |

## Non Functional Requirements

|  |  |
| --- | --- |
|  | **Details** |
| **Supportability** | * **Adaptability: A grid view is added to the website to deal with additional domain concepts (Mobile platform – tablets etc…)** * **Maintainability: a periodical checkup is done on the website to fix bugs and update it.** |
| **Performance** | * **System can support 1000 users concurrently.** * **Worst latency acceptable by the user is the game loading time which is maximum 30 seconds.** |
| **Dependency** | * **Reliability: System doesn't accept bad input, it makes sure that no teacher is treated as a student, and no student gets the privileges of teachers.** * **Safety: If a user is writing a comment, and lost connection. The system keeps the comment until the internet connection is recovered.** * **System doesn't tolerate crashes for more than 5 minutes a week.** * **Security: ID and Password are required from the user to authenticate login.** |
| **Usability** | * **Our website is easy for anyone to learn how to use it. The user doesn't need to have strong technical knowledge or anything to be able to use the website. Fonts are clear and the language we use is simple English. We also provide a tutorial to guide them through it.** |

# System Models

## Use Case Model



## Use Case Tables

**1-**

|  |  |  |
| --- | --- | --- |
| Use Case ID: |  | |
| Use Case Name: | Sign up | |
| Actors: | User | |
| Pre-conditions: | The user must open the sign up page website. | |
| Post-conditions: | The user must enter required data and presses submit.  The system is done validating data and creates the new account | |
|  | **User Action** | **System Action** |
| 1. User enters his sign up data (name, email, password, gender …) and checks the radio button that indicates teacher or student. |  |
|  | 2- System validates entered data and if there’s a wrong input system notifies user and rejects wrong input. The system repeats this process until all data is valid. Then takes entered data to Teacher or Student database, based on the radio button that the user checked, and creates the account. |
|  |  | The system redirects the user to a tutorial on how to use the website |

# 2-

|  |  |  |
| --- | --- | --- |
| Use Case ID: |  | |
| Use Case Name: | Sign in | |
| Actors: | User | |
| Pre-conditions: | The user must open the website and enter his email and password | |
| Post-conditions: | The user entered website homepage | |
|  | **User Action** | **System Action** |
| 1. User must enter his user email and password, and click the login button. |  |
|  | 1. System validates the user's input. If the input is right: the user is redirected to the website homepage, else: the user is asked to repeat the process |
|  |  | 1. System redirects user to homepage. |

# 3-

|  |  |  |
| --- | --- | --- |
| Use Case ID: |  | |
| Use Case Name: | Log out | |
| Actors: | User | |
| Pre-conditions: | The user must be logged in to be able to logout and | |
| Post-conditions: | User is redirected to the main website page. | |
|  | **User Action** | **System Action** |
| 1. User presses the logout button. |  |
|  | 1. System ends the user's session. 2. System redirects the user to the sign-in page |

**4 –**

|  |  |  |
| --- | --- | --- |
| Use Case ID: |  | |
| Use Case Name: | View profile | |
| Actors: | User | |
| Pre-conditions: | User should be logged in to be able to view his profile. | |
| Post-conditions: | User sees his info (profile). | |
|  | **User Action** | **System Action** |
| 1. User logs in to the website |  |
|  | 1. System calls the login |
|  |  | 1. Use is redirected to website homepage |
|  | 1. User requests to be redirected to his profile. |  |
|  |  | 1. System redirects the user to his profile. |
|  |  | 1. System displays user's information (name , age , etc.. , plus a table of played gamed , achievements in each game , and submitted rate for each game. |

**5-**

|  |  |  |
| --- | --- | --- |
| Use Case ID: |  | |
| Use Case Name: | Play game | |
| Actors: | User | |
| Pre-conditions: | 1-User should be logged in.  2-User should choose desired category.  3-User should choose desired game. | |
| Post-conditions: | Game is done loading. | |
| + | **User Action** | **System Action** |
| 1. The user logs in to his account. |  |
|  | 1. System calls log in function. |
|  | 3- The system redirects the user to website homepage, where the list of game categories is displayed. |
|  | 1. The user chooses the game category. |  |
|  |  | 5- System displays the games in the chosen category. |
|  | 1. The user chooses the game that he wishes to play and |  |
|  |  | 1. The system loads the game. |
|  | 1. The user starts playing the game. |  |
| Quality | If the game is not loaded within 30 seconds, the system displays the message "error loading game , please refresh the page". | |

**6-**

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: |  | | |
| Use Case Name: | Rate game | | |
| Actors: | User | | |
| Pre-conditions: | User must be logged in.  User must choose category.  User must choose game. | | |
| Post-conditions: | Rate is saved and added to the played games table. | | |
|  | **User Action** | | **System Action** |
| 1. User logs in to the website. | |  |
|  | | 1. System calls log in function. |
|  |  | | 1. System redirects user to website homepage and displays categories. |
|  | 1. User chooses desired category. | |  |
|  |  | | 1. System displays list of games inside the category. |
|  | 1. User chooses desired game. | |  |
|  |  | | 1. System loads chosen game. |
|  |  | | 1. System displays rate bar under the game window. |
|  | 1. User rates game and submits the rate. | |  |
|  |  | | 1. Systems saves rate and adds it to the table of played games. |
| Quality | | User can edit his rate anytime he wants.  Rate appears every time the user plays the game.  Teachers cannot rate their own games | |

**7-**

|  |  |  |
| --- | --- | --- |
| Use Case ID: |  | |
| Use Case Name: | Comment on games. | |
| Actors: | User | |
| Pre-conditions: | User must be logged in.  User must choose category.  User must choose game. | |
| Post-conditions: | Comment is saved and appears under the game window.  The teacher who created the game is notified of the comment. | |
|  | **User Action** | **System Action** |
| 1. User logs in to the website. |  |
|  | 1. System calls log in function. |
|  |  | 1. System redirects user to website homepage and displays categories |
|  | 1. User chooses desired category. |  |
|  |  | 1. System displays list of games inside the category. |
|  | 1. User chooses desired game. |  |
|  |  | 1. System loads chosen game. |
|  |  | 1. System displays comment box under the game window and above the list of previous comments. |
|  | 1. User writes his comment and presses submit. |  |
|  |  | 1. System saves the comment and displays it with other previous comments under the new comment box. 2. The system notifies the teacher who created the game with the comment. |

**8-**

|  |  |  |
| --- | --- | --- |
| Use Case ID: |  | |
| Use Case Name: | Respond to comments | |
| Actors: | Teachers | |
| Pre-conditions: | A Comment has been made on this teacher's game and teacher has received a notification | |
| Post-conditions: | Respond is saved and appears under the game window.  The user who commented on the game is notified of the respond. | |
|  | **User Action** | **System Action** |
|  | 1. System notifies teacher that there is a comment on their game. |
|  | 1. Teacher clicks on the notification |  |
|  |  | 1. System takes the teacher to the game page where the comment -was placed. |
|  | 1. Teacher responds to the written comment and clicks submit. |  |
|  |  | 1. System saves the submitted respond and views it on the game page. 2. The user who wrote the comments is notified of the respond. |

# 9-

|  |  |  |
| --- | --- | --- |
| Use Case ID: |  | |
| Use Case Name: | Create Game | |
| Actors: | Teacher | |
| Pre-conditions: | A teacher is logged in and presses create game. | |
| Post-conditions: | System saves the uploaded source game.  Game is available for the users to play and put in its right category. | |
|  | **User Action** | **System Action** |
| 1. Teacher logs into his account |  |
|  | 1. The system redirects the user to the website's home page. 2. In the top of the website's home page, appears create game tab in the navigation bar. |
|  | 1. User clicks the create game tab. |  |
|  |  | 1. System redirects the user to the create game page |
|  | 1. Teacher submits his source code with its name, description and category. |  |
|  |  | 1. The system saves the game and makes it available for the users to play. |
| Quality | Nothing can be submitted until a source code is aploaded. | |

**10-**

|  |  |  |
| --- | --- | --- |
| Use Case ID: |  | |
| Use Case Name: | Edit game | |
| Actors: | Teachers | |
| Pre-conditions: | A teacher logs in and presses my games and chooses the desired game and presses edit.  The game should be created in order to be able to edit it. | |
| Post-conditions: | System saves the edits. | |
|  | **User Action** | **System Action** |
| 1. A teacher logs in to his account. |  |
|  | 1. System redirects the teacher to the website's home page. |
|  | 1. Teacher chooses the game to be edited and presses the edit button under it. |  |
|  |  | 1. System redirects the teacher to the page where he uploads his new source code, or edits the game's name or the category. |
|  | 1. User uploads the new source code and submits it, or makes his changes. |  |
|  |  | 1. System saves the new source code to the game. |
| Quality | Assure that changes are saved before the page is closed. | |

# 11-

|  |  |  |
| --- | --- | --- |
| Use Case ID: |  | |
| Use Case Name: | Remove game | |
| Actors: | Teachers | |
| Pre-conditions: | A teacher logs in and presses my games and chooses the desired game and presses remove.  The game should be created in order to be able to remove it. | |
| Post-conditions: | Game removed. | |
|  | **User Action** | **System Action** |
| 1. A teacher logs in to his account. |  |
|  | 1. System redirects the teacher to the website's home page. |
|  | **3 –** Teacher chooses the game to be removed and presses the edit button under it. |  |
|  |  | **4-**The system asks the user to make sure if he really wants to delete it. |
|  | 1. User approves or cancels. |  |
|  |  | 1. The system removes the game or cancels the operation based on what the user chose. |

# 12-

|  |  |  |
| --- | --- | --- |
| Use Case ID: |  | |
| Use Case Name: | Search for game | |
| Actors: | User | |
| Pre-conditions: | User is logged and in the website's home page. | |
| Post-conditions: | Search results are displayed. | |
|  | **User Action** | **System Action** |
| 1. User logged in. |  |
|  | 1. System redirects the user to the website's homepage. |
|  | 1. User writes the keyword in the search bar at the top of the homepage, and presses enter. |  |
|  |  | 1. The system uses the keyword entered to search for the game. 2. System redirects the user to another page where the search results appear. |

# 13-

|  |  |  |
| --- | --- | --- |
| Use Case ID: |  | |
| Use Case Name: | View Notifications | |
| Actors: | User and administrator | |
| Pre-conditions: | User or administrator is logged and in the website's home page. | |
| Post-conditions: | Notifications appear. | |
|  | **User Action** | **System Action** |
| 1. The user and administrator logs in to his account. |  |
|  | 1. System redirects the user or administrator to the website's home page. |
|  | 1. User or administrator presses on the notification button that appears at the top of the page. |  |
|  |  | 1. The System displays the notification menu. |

14-

|  |  |  |
| --- | --- | --- |
| Use Case ID: |  | |
| Use Case Name: | Report | |
| Actors: | User | |
| Pre-conditions: | User is logged and in. | |
| Post-conditions: | Report is sent to the administrator. | |
|  | **User Action** | **System Action** |
| 1. User logged in. |  |
|  | 1. System redirects the user to the website's homepage. |
|  | 1. User presses the report tab from the navigation bar. |  |
|  |  | 1. The system redirects the user to the report page where a message box is displayed. |
|  | 1. User writes his report and presses send. |  |
|  |  | 1. The system notifies the administrator with the report. |

15-

|  |  |  |
| --- | --- | --- |
| Use Case ID: |  | |
| Use Case Name: | View reports | |
| Actors: | Administrator | |
| Pre-conditions: | Logged in as administrator  Clicks on view reports | |
| Post-conditions: | Report is read by the administrator | |
|  | **User Action** | **System Action** |
| 1. The administrator logs in. |  |
|  | 1. The system redirects the administrator to his profile. |
|  | 1. Administrator clicks on view reports. |  |
|  |  | 1. The system shows the report page menu. |

16-

|  |  |  |
| --- | --- | --- |
| Use Case ID: |  | |
| Use Case Name: | Approve game | |
| Actors: | Administrator | |
| Pre-conditions: | Logged in as administrator | |
| Post-conditions: | Report is approved or not. | |
|  | **User Action** | **System Action** |
| 1. The administrator logs in. |  |
|  | 1. The system redirects the administrator to his profile. |
|  | 1. Administrator clicks on approve game menu. |  |
|  |  | 1. The system shows the approve game menu. |
|  | 1. The Administrator chooses a game. 2. The Administrator views the game and chooses what to do with it. |  |
|  |  | 1. System notifies the teacher who created the game. |

17-

|  |  |  |
| --- | --- | --- |
| Use Case ID: |  | |
| Use Case Name: | Delete | |
| Actors: | Administrator | |
| Pre-conditions: | Logged in as administrator | |
| Post-conditions: | Deletion is completed. | |
|  | **User Action** | **System Action** |
| 1. The administrator logs in. |  |
|  | 1. The system redirects the administrator to his profile. 2. The system calls the view reports function. |
|  | 1. Based on the report, the administrator begins the deletion process either a comment or a game or a user. |  |
|  |  | 1. The system saves what was done to the database. |

# Ownership Report

|  |  |
| --- | --- |
| Non-functional requirements - Scope | Karim |
| Use case Diagram – Software purpose | Ahmed |
| Functional Requirements – Document purpose | Ghada |
| Use case tables | Team work |