

Cairo University
Faculty of Computers and Information



CS251

Software Engineering I

PN: edugame

Software Requirements Specifications

TN: Gamers++

November 2016



CS251: Phase 1 – Gamers++

Project: edugame

Software Requirements Specifications

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Team

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Document Purpose and Audience

A fully detailed SRS document for a game-based educational website, targeting teenagers & teachers.

Expecting our professor and TAs to read this document for feedback. Also it will act as a reference for us during our working period. Our final version will be introduced to Computek for submission.

Introduction

Software Purpose

Our website provides an environment between the teachers and their students. It gives students an opportunity to learn new basic scientific concepts through small and easy mini-games. On the other hand, it gives the teachers the chance to be creative and produce new ways for education by introducing new games.

Software Scope

Our website will include different types of categories of games, including mainly Mathematics, Science and Programming categories. It will also include a game builder/editor to make the games. It will also include a scoreboard for each game in the website. It also will give the teachers the ability to add another category when his/her game does not fit in any existing one. Specific users in the website can do the following:

- Play games.
- Create new games.
- Edit previous made ones.



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- Rate games.
- Remove games.
- Write comments and replying on them by teachers.
- View profiles including your achievements and scores in the website.

Our website will not include any types of contests between students.

Requirements

Functional Requirements

The student of the system can:

- **Register/Signup:** User can have an account in the website to be able to access the website's features, by choosing the button Sign up in the welcome page of the website that loads a page of a registration form. User will fill it with his own information. Once the form is submitted correctly, he will have a specific username and password to authenticate him.
- **Login:** User can access his/her account by clicking on Log in button after entering username and password. If they are entered correctly it gives him access to information about his scores and achievements, or even only some personal info. Otherwise it gives an error and asks the user to resubmit.
- **Choose category:** After login, User can choose from a menu bar a specific category to access its contents. This action will load a page of the games in this category.
- **Choose game:** By clicking the specific category, User can choose any game he/she is interested to play from the list. This action loads the page of this game so the user can start playing.
- **Start a game:** After loading the game, User press the start button on the game control bar* that starts the game which in turn gives him/her the chance to choose a specific level to play or continue. This can only be done if the game is not running. Otherwise, the button cannot be selected.
- **Stop the game:** User stops the game, by pressing the stop button on the game control bar. Game is stopped and user's progress is saved. This can only be done if the game is running. Otherwise, the button cannot be selected.
- **Access his achievement's history:** User can view his achievements through a game by pressing the achievements button on the game control bar. This loads a page containing all the user achievements, as well as other achievements he can get in this game.



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- **View another user's profile:** User can check another one's profile via different ways. He/She can select one's profile from the comments or replies or search for a specific name in the search bar or even select one of his/her friends from the friend box in the user's account page.
- **Rate a game:** Only after playing the game, User can select a specific rate for this game.
- **Comment:** User can leave any comments on any game in an appropriate way and press the comment button to publish it to be seen by others. These comments can be reported from other users, by clicking the report button beside each comment that sends a built in message via the contact us.
- **Follow:** User can choose any other user and follow him by accessing his profile and clicking the follow button. This user will be added in his/her friends' box in the profile, so he/she can be able to find him/her easily.
- **View his/her profile:** By clicking the profile button in the menu bar, beside the Search bar, the user can access his own profile to view any information. He/She can also edit them after that by clicking the edit button.
- **Contact us:** User can send messages to the admin of the website by just clicking the button contact us in the menu bar, to be able to report any problem or ask for any technical requirements, and then it can be sent by clicking the send button.

The teacher in the system in addition to all of these can:

- **Add a new game:** Teacher can add any new game by clicking the add button, exists only for teachers users, which loads the game builder/editor that provides him/her to make any game.
- **Edit game:** Teacher can access his profile and choose to view his games, so he can choose any specific game to edit, or even from the game page itself, and also choose whether to edit the name or category so a page to enter a new name or choose a new category will load, or to edit something inside the game so the game builder/editor will load.
- **Remove game:** Teacher can access his profile and choose to view his games, so he can choose any specific game to remove, or even from the game page itself, so it will be removed from the category, and if this category is empty, it will also be removed.
- **Reply:** Teacher can reply on students' comments only on his/her games by clicking the reply button to view it to every other user.
- **Create Category:** If the teacher wants to add a game that does not fit in any existing category, Teacher can choose to create another new category that suits his/her new game. While creating a new game, Teacher can choose from the Radio button shortcut an existing category or to create a new one.

The admin have different capabilities in the website, he/she can:



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- **Reply on Contact us messages:** The admin can receive any messages sent via contacting us from a user, and reply on them by answering any questions asked, responding to any requests or taking any needed actions.
- **Remove any inappropriate Comments/Replies:** After the admin receives a reporting message for any inappropriate comment/reply, the admin must check if this comment/reply is really inappropriate so he can take the action to remove it.

Non Functional Requirements

Usability

Writing guidelines and HINTS for each game.

Navigation between different pages is obvious and available through simple steps average of 3 steps.

Performance

Each level of the game should be light weight for loading with a maximum size of uploads of 5 MB.

Reliability

Prevent data loss when any interruption happens.

Supportability

To easily communicate with the admin and be supported at any problem occurrence, by replying on messages after maximum 48 hours.

Availability

Considering the performance of the server to support working 24/7 by choosing the host.

Security

Support username and password authentication to secure your data.

Backup

Regular checking on the new data entered to be saved for further action.

Emotional factors

Scoreboard will be available in each game to increase the competition between different users.

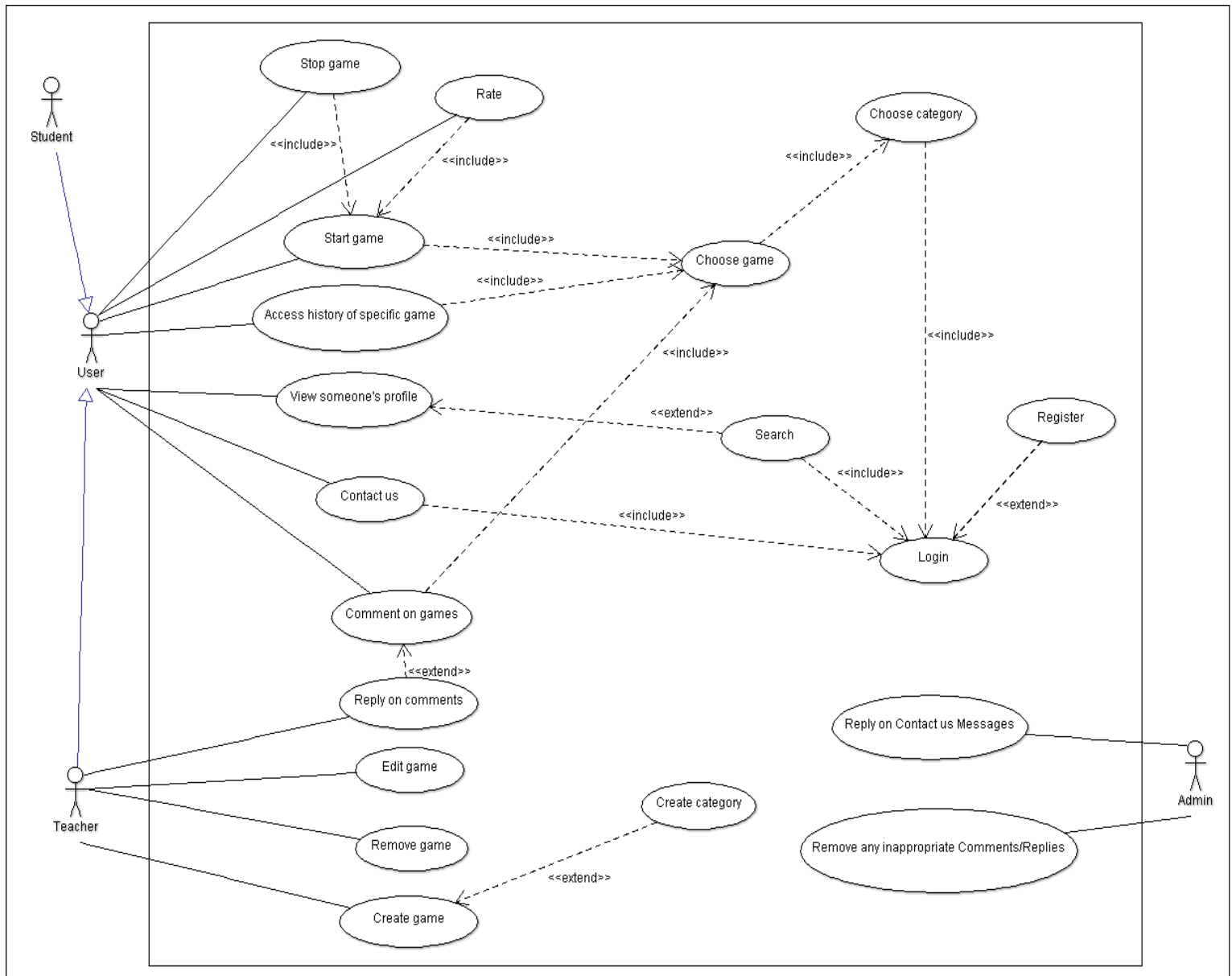


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System Models

Use Case Model





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Use Case Tables

Login

Use Case ID:	#1	
Use Case Name:	Login	
Actors:	Students/Teachers	
Pre-conditions:	<ul style="list-style-type: none"> User visit the site. User has an account (already registered). 	
Post-conditions:	User successfully logged in.	
Flow of events:	User Action	System Action
	1- By using the use case Register, User enters his username and password in the required fields and then press the login button.	
		2- System checks if username and password are valid, and checks his identity either Student or Teacher.
		3.1-If the account belongs to a teacher. 3.2-System loads the welcome page, including the button “Add a new game”.
		4.1 If the account belongs to a student. 4.2-System loads the regular welcome page.
Exceptions:	User Action	System Action
	1- User enters username and password.	



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		2- Username/Password is invalid. 3- System rejects to login and declare the error. 4- Asks the user to resubmit.
Includes:	None.	
Notes and Issues:		

Register

Use Case ID:	#2	
Use Case Name:	Register	
Actors:	Students/Teachers	
Pre-conditions:	User visits the website.	
Post-conditions:	User has an account.	
Flow of events:	User Action	System Action
	1- User Chooses Sign up button from the loaded page.	
		2- System loads a registration form to be filled.
	3-User inserts his personal information, including Name, Gender and Age, and his chosen Username and Password, and his identity either a Teacher or a Student.	
		4- System validates information, creates account and login.



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Exceptions:	User Action	System Action
		1-While entering, if System finds that username entered already exists. 2-System rejects data entered and requests to enter new data.
	3- User enters new data.	
Includes:	None.	
Extends:	Login	
Notes and Issues:		

Stop game

Use Case ID:	#3	
Use Case Name:	Stop game	
Actors:	Students/Teachers.	
Pre-conditions:	<ul style="list-style-type: none"> User logged in. User chose category. User chose game. User is already playing. 	
Post-conditions:	The game stopped.	
Flow of events:	User Action	System Action
	1-By using the use case Start game, User presses the stop button from the game control bar.	



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		2- System saves his/her current progress.
		3- System stops the game.
Exceptions:	User Action	System Action
Includes:	Start game.	
Notes and Issues:		

Access achievement's history

Use Case ID:	#4	
Use Case Name:	Access achievements' history.	
Actors:	Students/ Teachers.	
Pre-conditions:	<ul style="list-style-type: none"> • User login • User chose specific category • User chose specific game 	
Post-conditions:	User gets a list of his achievements in his game.	
Flow of events:	User Action	System Action
	1-By using the use case Choose specific game, User requests to view his game history, by pressing the Achievements button from the game control bar.	
		2- System loads the page including his/her achievements in this game,



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		sorted in a descending order. In addition to those he/she he can get.
Exceptions:	User Action	System Action
	1- User requests to view his game history but he has never played this game.	
		2- System displays no history, only those achievements he/she can get in this game.
Includes:	Choosing game.	
Notes and Issues:		

Create game

Use Case ID:	#5	
Use Case Name:	Create a game.	
Actors:	Teacher	
Pre-conditions:	User login as a Teacher.	
Post-conditions:	Game is submitted successfully and added to its specific category list.	
Flow of events:	User Action	System Action
	1- User clicks the Add new game button from the menu bar.	
		2-System loads the game builder page.
	3.1- User uploads if any data needed for specific levels.	



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	3.2- User determines when a specific level is finished. 3.3- User presses the finish button.	
		4-System loads a page to enter game's information.
	5- After finishing the game, User chooses a specific game name and category to include it.	
		6- System checks data and adds this game to its specified category's list.
Exceptions:	User Action	System Action
	1-User Chooses a specific game name.	
		2.1- While entering, System finds this name already exists. 2.2- System asks the User to choose another one.
Includes:		
Notes and Issues:	Each level of the game should be light weight for loading with a maximum size of uploads of 5 MB.	

Edit

Use Case ID:	#6
Use Case Name:	Edit
Actors:	Teacher
Pre-conditions:	<ul style="list-style-type: none"> User logged in as a Teacher.



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	<ul style="list-style-type: none"> Teacher already made this game before. 	
Post-conditions:	The game is edited.	
Flow of events:	User Action	System Action
	Scenario 1	
	1-User clicks the profile button, and requests to view his games.	
		2-System lists the games this user created.
	3-User chooses a specific game to be edited.	
		4-System lists options for modifications, whether only to edit the name or category, or edit something inside the game.
	5.1-If User chooses to edit name or category.	
		5.2- System loads a page to enter game's information.
	6.1- If user chooses to edit something inside the game.	
		6.2- System loads this game in the game builder page.
	Scenario 2	
	1-By using the use case Choose game, User presses the Edit game button from the game page, if this	



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	game is created by him/her.	
		2- System lists options for modifications, whether only to edit the name or category, or edit something inside the game.
	3.1- If User chooses to edit name or category.	
		3.2- System loads a page to enter game's information.
	4.1- If user chooses to edit something inside the game.	
		4.2- System loads this game in the game builder page.
Exceptions:	User Action	System Action
	Exception 1	
	1- If User doesn't change anything.	
		2- System shows message declaring that nothing has changed.
	3- User chooses whether to resubmit details, or to leave the game as is.	
	Exception 2	
	1- If user changed the name by an already existing one.	
		2.1- While entering, System finds this name already exists.



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		2.2- System asks the User to choose another one.
Includes:		
Notes and Issues:		

Start game

Use Case ID:	#7	
Use Case Name:	Start game	
Actors:	Students/ Teachers	
Pre-conditions:	<ul style="list-style-type: none"> User login. User chooses category. User chooses game. 	
Post-conditions:	The game is running.	
Flow of events:	User Action	System Action
	1-By using the use case Choose game, User presses the Start button from the game control bar.	
		2-System displays the game's guide (How to play..?).
		3-System starts the game, giving the user the chance to either choose a specific level or continue playing.
	4-User chooses and starts playing.	
		5- System saves your gameplay for each level.



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Exceptions:	User Action	System Action
Includes:	Choose game.	
Notes and Issues:		

Choose Category

Use Case ID:	#8	
Use Case Name:	Choose Category	
Actors:	Students/ Teachers	
Pre-conditions:	User login.	
Post-conditions:	System shows the list of games in the chosen category.	
Flow of events:	User Action	System Action
		1-By using the use case Login, system shows the home page containing a set of categories.
	2-User chooses a specific category by pressing on its name/logo.	
		3-System moves to a page that shows a list of games included in the chosen category.
Exceptions:	User Action	System Action



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Includes:	Login	
Notes and Issues:		

Choose game

Use Case ID:	#9	
Use Case Name:	Choose game	
Actors:	Students/ Teachers	
Pre-conditions:	<ul style="list-style-type: none"> User login. User chooses specific category. 	
Post-conditions:	User chose specific game to play.	
Flow of events:	User Action	System Action
		1-By using the use case Choose Category, system shows list of games in a specific category.
	2-User chooses a specific game, by pressing its name or logo.	
		3-Systems loads the game page. It includes the game name, rate, description, the game window itself, and a control bar to start, stop, restart and view achievements for the game. It contains as well a section for comments.



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Exceptions:	User Action	System Action
Includes:	Choose category	
Notes and Issues:		

Comment

Use Case ID:	#10	
Use Case Name:	Comment	
Actors:	Students/ Teachers	
Pre-conditions:	<ul style="list-style-type: none"> User login User chooses specific category User chooses game 	
Post-conditions:	User left a comment on the game.	
Flow of events:	User Action	System Action
		1-By using the use case Choose game. The system shows the comments section below the game frame. 2-A text area is available for the user to leave his comment.
	3-User types his/her comment in the text area and press submit button.	



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		<p>4-System filters the comment for any inappropriate language and replace it with asterisks before posting the comment.</p> <p>5-System shows the comment in the comments section. System shows a new text area for the user to comment again.</p>
Exceptions:	User Action	System Action
Includes:	Choose game	
Extend	None.	
Notes and Issues:		

Reply

Use Case ID:	#11	
Use Case Name:	Reply	
Actors:	Teacher	
Pre-conditions:	<ul style="list-style-type: none"> User login User chooses specific category User chooses game 	
Post-conditions:	User replied on a comment on one of his games.	
Flow of events:	User Action	System Action



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		<p>1-By using the use case Choose game, system checks if the teacher is the creator of the game.</p> <p>2-If yes, system shows a reply button next to each comment.</p>
	3-Teacher press reply next to the comment he wants to reply on.	
		4-System shows a text area below the chosen comment to enable the teacher to write his reply.
	5-Teacher writes his comment in this text area and press submit button.	
		<p>6-System filters the reply for any inappropriate language and replace it with asterisks before posting the reply.</p> <p>7-System shows the reply in below the chosen comment.</p>
Exceptions:	User Action	System Action
	1-Teacher enters a game, that he didn't create it.	
		<p>2-System will check if this teacher is the creator of this game.</p> <p>3-If not, the system will disable the reply option.</p> <p>4-System shows a message above</p>



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		the comments section indicating that he can't reply on this game.
Includes:	Choose game	
Extends	Comment	
Notes and Issues:		

Remove game

Use Case ID:	#12	
Use Case Name:	Remove game	
Actors:	Teacher	
Pre-conditions:	<ul style="list-style-type: none"> User login User chooses specific category User chooses game 	
Post-conditions:	The game is removed from the whole website.	
Flow of events:	User Action	System Action
	Scenario 1	
	1-The teacher press on his profile button, on the navigation bar.	
		2-System will show the teacher all his/her games he/she created before. 3-System shows a remove button beside the game name.



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	4-The teacher press on remove button.	
		5-System will ask the user to enter his/her password as a checking process.
	6-The teacher enter his/her password, and press submit button.	
		7-System check for the password. 8-If right, system will delete this game, and show a message that the game was deleted.
	Scenario 2	
	1-By using “Choose game” use case, teacher reached a game page.	
		2-System shows a remove button in the game control bar.
	3-Teacher will press on remove button.	
		4-Same authentication process for removing. “From step 5 to step 8 in Scenario 1” 5-System will redirect user to the home page.
	Scenario 3	
	1-By using “Login” use case, teacher	



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	presses on remove button from the navigation bar.	
		2-System shows his profile page and continues with scenario 1.
Exceptions:	User Action	System Action
		1-System will ask the user to enter his/her password as a checking process.
	2-Teacher enters a wrong password.	
		3-System alert the user to enter the right password.
	Exception 2	
		1-After removing the game, System checks if the category is empty.
		2-System removes the whole category.
Includes:	Login	
Notes and Issues:	Game scores and achievements by the users are not removed from their history.	

Rate game

Use Case ID:	#13
Use Case Name:	Rate game
Actors:	Students/ Teachers
Pre-conditions:	<ul style="list-style-type: none"> User login User chooses specific category



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	<ul style="list-style-type: none"> User chooses game 	
Post-conditions:	The game rate is updated.	
Flow of events:	User Action	System Action
		1-By suing “Choose game” use case, system shows the rate box below the game, If He played the game at least once.
	2-User rates the game by choosing a rate from 1 to 5 (1 is the lowest. 5 is the highest).	
		3-System updates game’s rate.
Exceptions:	User Action	System Action
		1-System checks if the user played the game at least once. 2-If not, system disables rating option.
Includes:	Choose game	
Notes and Issues:		

View someone’s profile

Use Case ID:	#14
Use Case Name:	View someone’s profile
Actors:	Students/ Teachers
Pre-conditions:	<ul style="list-style-type: none"> User Login



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	<ul style="list-style-type: none"> User click on the player name 	
Post-conditions:	The profile of this player displayed.	
Flow of events:	User Action	System Action
	Scenario 1	
	1-By using “Choose game” use case, user press on a username of any user in the comments section.	
		2-System shows the user page, including his name, profile picture, description and achievements.
	Scenario 2	
	1-By using profile button from the navigation bar.	
		2-System will show the user’s profile including a section which shows a list of all his friends.
	3-User chooses a friend from his/her list by pressing on his/her name.	
		4-System shows the user page, including his name, profile picture, description and achievements.
	Scenario 3	
	1-The user enters a name in the search bar located in the navigation bar and press search.	



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		2-System searches for the given name and shows a list of results.
	3-User presses on the username he wants to view his/her account.	
		4-System shows the user page, including his name, profile picture, description and achievements.
Exceptions:	User Action	System Action
	Scenario 3 After Step 2	
		1-System find no results for the given entry. 2-System shows a message that indicates the error.
Includes:		
Notes and Issues:		

Create Category

Use Case ID:	#16	
Use Case Name:	Create Category	
Actors:	Teachers	
Pre-conditions:	Create a game	
Post-conditions:	New category is added to the existed categories.	
Flow of events:	User Action	System Action



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	1-By using the “Create game” use case.	
		2-System shows a radio button menu to choose a specific category to add the game to.
	3-User chooses to add new category by pressing “new category” button.	
		4-System asks the user to enter the category name.
	5-User enters a category name.	
		6-System validates data and adds the category the existing ones. 7-System adds the game to this new category.
Exceptions:	User Action	System Action
	1-User enters a name for a category that already exists.	
		2-Systems shows a message that declares the error. 3-System asks the user to choose another name, or add the game to existing categories.
Includes:		
Extends:	Create game	
Notes and Issues:		



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Reply on Contact us messages

Use Case ID:	#17	
Use Case Name:	Reply on Contact us messages	
Actors:	Admin	
Pre-conditions:	Messages from users are sent.	
Post-conditions:	Specific action is taken according to the message. Admin sends a reply mail to the sender.	
Flow of events:	User Action	System Action
	1-Admin presses the inbox button in the homepage.	
		2-System shows a list of the “contact us” messages.
	3-Admin chooses a specific messages to view.	
		4-System previews the message, and supports a reply form with the email field filled with the sender’s email.
	5-Admin fills the reply form, and presses the button submit.	
		6-System sends the reply email to the sender.
		7-System shows a message when the email is successfully sent to the sending user.
Exceptions:	User Action	System Action



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Includes:		
Notes and Issues:		

Remove any inappropriate Comments/Replies

Use Case ID:	#18	
Use Case Name:	Remove any inappropriate Comments/Replies	
Actors:	Admin	
Pre-conditions:	Reporting messages from users are sent.	
Post-conditions:	Comment is checked and removed.	
Flow of events:	User Action	System Action
	1- By using reply on contact us use case, when the admin views the message, it is found to be a report on a comment/reply.	
	2-User checks whether this comment/reply is really inappropriate or not.	
	3.1-If it is, admin presses the delete button.	



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		3.2-System removes the comment/reply from the game page.
	4-Admin enters the message page again.	
	5-Admin fills the reply form, by telling the sender the reason why it is removed or not.	
Exceptions:	User Action	System Action
Includes:		
Notes and Issues:		



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Ownership Report

Item	Owners
Use case tables from ID #1 to ID #7	Karim Ehab Ahmed Alaa Atef Badr
Use case tables from ID #8 to ID #14	Mostafa ElMenshawy Ismail Ahmed Mahmoud
Use case tables from ID #15 to ID #18	All the team

Git Repository Link

<https://github.com/IsmailAhmedIsmail/SWE-Project.git>