Cairo University  
Faculty of Computers and Information



**CS251**

**Software Engineering I**

PN: edugame

Software Design

**TN: Gamers++**

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# Team

|  |  |  |  |
| --- | --- | --- | --- |
| ID | Name | Email | Mobile |
| 20140066 | Alaa Atef Badr | [alaa.badr.25@gmail.com](mailto:alaa.badr.25@gmail.com) | 01140911255 |
| 20140062 | Ismail Ahmed Mahmoud | [ismail.ahmed2014@stud.fci-cu.edu.eg](mailto:ismail.ahmed2014@stud.fci-cu.edu.eg) | 01005887976 |
| 20140206 | Karim Ehab Ahmed | [karimehabahmed@stud.fci-cu.edu.eg](mailto:karimehabahmed@stud.fci-cu.edu.eg) | 01062064070 |
| 20140274 | Mostafa Mohamed ElMenshawy | [mustafa1elmenshawy@gmail.com](mailto:mustafa1elmenshawy@gmail.com) | 01148504856 |

# 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.

# System Models

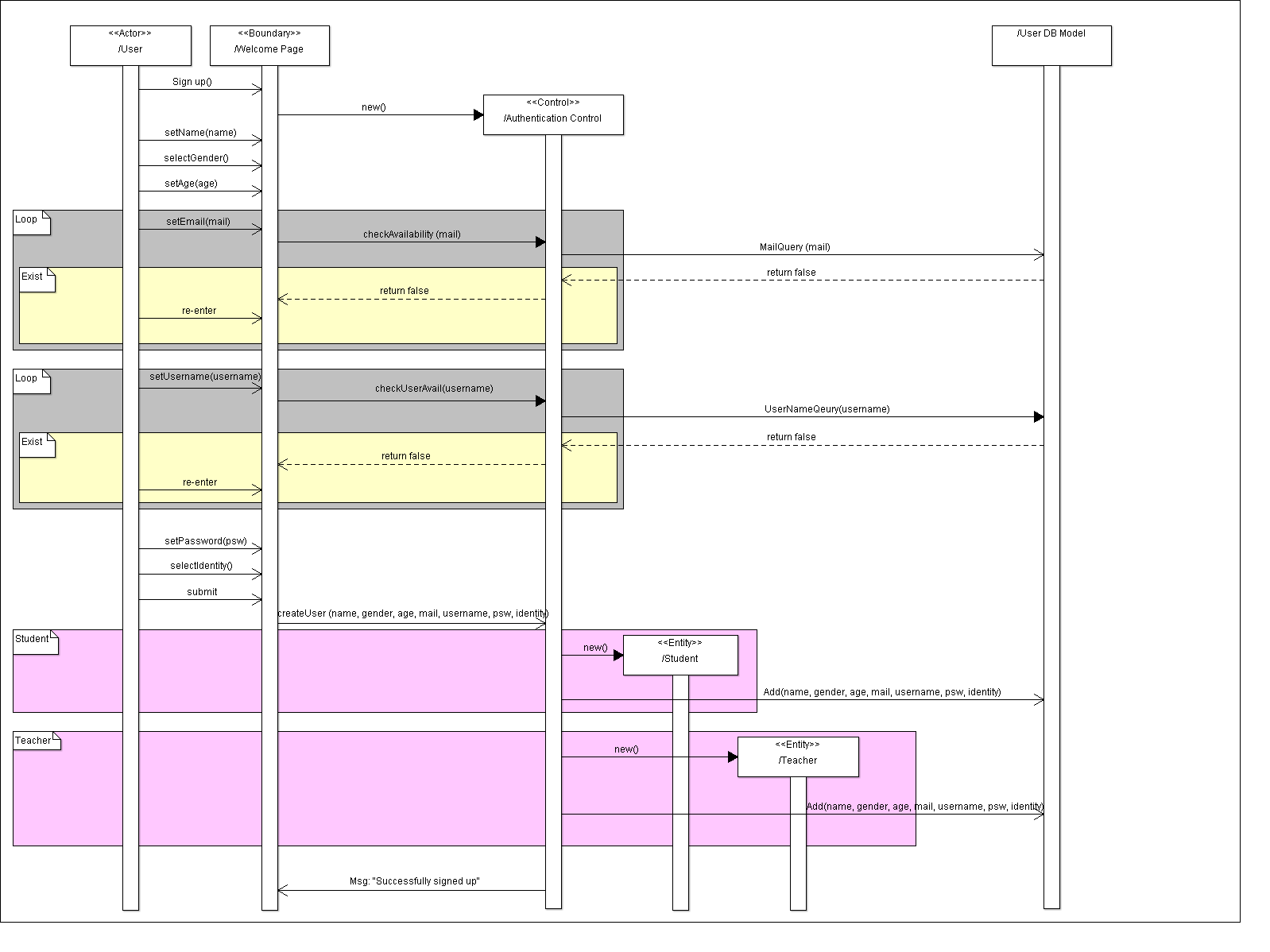
## I. Class diagrams

### Class Description

| **Class ID** | **Class Name** | **Description & Responsibility** |
| --- | --- | --- |
| 1 | **User** | Entity abstract parent class containing all information about any user. |
| 2 | **Student** | Entity child class for student to control his authorization through the website. |
| 3 | **Teacher** | Entity child class for teacher to control his authorization through the website. |
| 4 | **Category** | Entity class for game categories. It separates between different game fields. It includes a list of games that belong to a certain category. |
| 5 | **Game** | Entity class for games. It contains information about the game as long as the list of levels creating this game. |
| 6 | **Level** | Entity abstract parent class contains the information about a single level in a certain game. It stores the level options and the right answer. |
| 7 | **MCQ** | Entity child class contains information about a MCQ level in a certain game. |
| 8 | **TorF** | Entity child class contains information about a true or false level in a certain game. |
| 9 | **Achievements** | Entity class contains all the achievements and scores for a certain user in a certain game. |
| 10 | **Answer** | Entity class contains a choice in a level of a certain game. |
| 11 | **WelcomePage** | Boundary class acts as an interface between the system and user whenever he visits it. It includes options for login or register. |
| 12 | **Homepage** | Boundary parent class after a successful login or registration for students. It gives option to choose category or a specific game. |
| 13 | **TeacherHomepage** | Boundary child class after a successful login or registration for teachers. It gives option to choose category or a specific game. Moreover, it allows the teacher to create a new game. |
| 14 | **GamePage** | Boundary class that contains the game frame, where a user can play, start or stop a game. |
| 15 | **GameBuilder** | Boundary class that enables the teacher to build a new game. It goes through step-by-step instructions to help him. |
| 16 | **GameControl** | Control class that |
| 17 | **AuthenticationControl** |  |
| 18 | **HomepageControl** |  |
| 19 | **BuilderControl** |  |
| 20 | **UserDBModel** | Control Class that controls all database operations required by the system that relates to users. It checks for availability and retrieve user data in registration and login. |
| 21 | **CategoryDBModel** | Control Class that controls all database operations required by the system that relates to categories. It retrieves the category names for the homepage boundary class. |
| 22 | **GameDBModel** | Control Class that controls all database operations required by the system that relates to games. It checks for availability and retrieve game data in a specific category or stores a new one. |
| 23 | **LevelDBModel** | Control Class that controls all database operations required by the system that relates to levels. It retrieves/adds levels to a certain game. |
| 24 | **AchievementDBModel** | Control Class that controls all database operations required by the system that relates to achievements. It retrieves/adds achievements related to a certain user in a certain game. |

## II. Sequence diagrams

### Register Sequence Diagram



### Play game Sequence Diagram

#### Login Pre-condition

#### Choose Category Pre-condition

#### Choose Game Pre-Condition

#### Play

### Add game Sequence Diagram



### Class - Sequence Usage Table

| **Class Name** | **Sequence Diagrams** | **Overall used methods** |
| --- | --- | --- |
| E.g. Employee | 1, 3, 5 (means Seq Ids 1, 3, 5 used Employee class) | Save, GetData |
|  |  |  |

# Ownership Report

|  |  |
| --- | --- |
| Item | Owners |
|  |  |
|  |  |
|  |  |

# Git Repository Link

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