Cairo University Faculty of Computers and Information



**CS352 – Software Engineering II**

**Phase 2 Template**

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# Restful API

## User Services

### Login

|  |  |
| --- | --- |
| **Service name** | Login |
| **Input type** | **POST** |
| **Service URL** | **/edugame/login** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **User u** | **User object containing username and password.** | |
| **Example request** | **POST**  **/edugame/login**  **{ “username” : “IsmailAhmed” , “password” : “12345678”** |
| **Example response** | **{**  **"name": "Ismail Ahmed",**  **"gender": "Male",**  **"age": 21,**  **"email": "ismail@ismail.edu",**  **"username": "Ismail\_Ahmed",**  **"password": "12345678",**  **"identity": "Teacher"**  **}** |

### Register Student

|  |  |
| --- | --- |
| **Service name** | Register Student |
| **Input type** | **POST** |
| **Service URL** | **/edugame/register/student** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **Student s** | **Student object containing all his/her information.** | |
| **Example request** | **POST**  **/edugame/register/student**  **{**  **"name": "Alaa Atef",**  **"gender": "Female",**  **"age": 20,**  **"email": "alaa@alaa.com",**  **"username": "AlaaAtef",**  **"password": "12345678",**  **"identity": "Student"**  **}** |
| **Example response** | **{**  **"name": "Alaa Atef",**  **"gender": "Female",**  **"age": 20,**  **"email": "alaa@alaa.com",**  **"username": "AlaaAtef",**  **"password": "12345678",**  **"identity": "Student"**  **}** |

### Register Teacher

|  |  |
| --- | --- |
| **Service name** |  |
| **Input type** | **POST** |
| **Service URL** | **/edugame/register/teacher** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **Teacher t** | **Teacher object containing all his/her information.** | |
| **Example request** | **POST**  **/edugame/register/teacher**  **{**  **"name": "Alaa Atef",**  **"gender": "Female",**  **"age": 20,**  **"email": "alaa@alaa.edu",**  **"username": "AlaaAtef",**  **"password": "12345678",**  **"identity": "Teacher"**  **}** |
| **Example response** | **{**  **"name": "Alaa Atef",**  **"gender": "Female",**  **"age": 20,**  **"email": "alaa@alaa.edu",**  **"username": "AlaaAtef",**  **"password": "12345678",**  **"identity": "Teacher"**  **}** |

### Games of Collaborators

|  |  |
| --- | --- |
| **Service name** | Get Games of Collaborators |
| **Input type** | **GET** |
| **Service URL** | **/edugame/collaborator/{username}/games** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable String username** | **Username of the teacher to get the games he collaborated in.** | |
| **Example request** | **GET**  **/edugame/collaborator/Ismail\_Ahmed/games** |
| **Example response** | **[**  **{**  **"name": "Game 2",**  **"description": "Game 2 for testing",**  **"type": "choice",**  **"levels": [**  **{**  **"levelName": "level A",**  **"question": "Q1",**  **"number": 1,**  **"rightAnswer": "C1",**  **"answers": [**  **"C1",**  **"C2",**  **"C3",**  **"C4" ]**  **},**  **{**  **"levelName": "level B",**  **"question": "Q1",**  **"number": 2,**  **"rightAnswer": "C2",**  **"answers": [**  **"C1",**  **"C2",**  **"C3",**  **"C4"]**  **}**  **],**  **"gameOwner": {**  **"name": null,**  **"gender": null,**  **"age": 0,**  **"email": null,**  **"username": "AlaaAtef",**  **"password": null,**  **"identity": null**  **},**  **"levelno": 2,**  **"course": {**  **"courseName": "C++",**  **"courseOwner": {**  **"name": null,**  **"gender": null,**  **"age": 0,**  **"email": null,**  **"username": "AlaaAtef",**  **"password": null,**  **"identity": null**  **},**  **"description": "C++ course for dummies",**  **"students": null**  **},**  **"comments": []**  **}**  **]** |

## Course Services

### Show Courses

|  |  |
| --- | --- |
| **Service name** | Show Courses |
| **Input type** | **GET** |
| **Service URL** | **/edugame/courses** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | |  |  | |
| **Example request** | **GET**  **/edugame/courses** |
| **Example response** | **[**  **{**  **"courseName": "C++",**  **"courseOwner": {**  **"name": "Alaa Atef",**  **"gender": "Female",**  **"age": 20,**  **"email": "alaa@alaa.edu",**  **"username": "AlaaAtef",**  **"password": "12345678",**  **"identity": "Teacher"**  **},**  **"description": "C++ Course for dummies",**  **"students": []**  **},**  **{**  **"courseName": "Java",**  **"courseOwner": {**  **"name": "Ismail Ahmed",**  **"gender": "Male",**  **"age": 21,**  **"email": "ismail@ismail.edu",**  **"username": "Ismail\_Ahmed",**  **"password": "12345678",**  **"identity": "Teacher"**  **},**  **"description": "Java Course for dummies",**  **"students": []**  **}**  **]** |

### Show Teacher Courses

|  |  |
| --- | --- |
| **Service name** | Show Teacher Courses |
| **Input type** | **GET** |
| **Service URL** | **/edugame/Courses/{teacherUsername}** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable: String teacherUsername** | **Teacher username to show his/her courses** | |  |  | |
| **Example request** | **GET**  **/edugame/Courses/Ismail\_Ahmed** |
| **Example response** | **[**  **{**  **"courseName": "Java",**  **"courseOwner": {**  **"name": "Ismail Ahmed",**  **"gender": "Male",**  **"age": 21,**  **"email": "ismail@ismail.edu",**  **"username": "Ismail\_Ahmed",**  **"password": "12345678",**  **"identity": "Teacher"**  **},**  **"description": "Java Course for dummies",**  **"students": []**  **}**  **]** |

### Show Student Courses

|  |  |
| --- | --- |
| **Service name** | Show Student Courses |
| **Input type** | **GET** |
| **Service URL** | **/edugame/enrolledCourses/{studentUsername}** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable: String username** | **Student Username to show courses in which he/she enrolled.** | |  |  | |
| **Example request** | **GET**  **/edugame/enrolledCourses/KarimEhab** |
| **Example response** | **[**  **{**  **"courseName": "Java",**  **"courseOwner": {**  **"name": "Ismail Ahmed",**  **"gender": "Male",**  **"age": 21,**  **"email": "ismail@ismail.edu",**  **"username": "Ismail\_Ahmed",**  **"password": "12345678",**  **"identity": "Teacher"**  **},**  **"description": "Java Course for dummies",**  **"students": [**  **{**  **"name": "Karim Ehab",**  **"gender": "Male",**  **"age": 20,**  **"email": "karim@karim.com",**  **"username": "KarimEhab",**  **"password": "12345678",**  **"identity": "Student"**  **}**  **]**  **}**  **]** |

### Get Course

|  |  |
| --- | --- |
| **Service name** | Get Course |
| **Input type** | **GET** |
| **Service URL** | **/edugame/courses/{courseName}** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable:**  **String courseName** | **Course Name to get** | |  |  | |
| **Example request** | **GET**  **/edugame/courses/Java** |
| **Example response** | **{**  **"courseName": "Java",**  **"courseOwner": {**  **"name": "Ismail Ahmed",**  **"gender": "Male",**  **"age": 21,**  **"email": "ismail@ismail.edu",**  **"username": "Ismail\_Ahmed",**  **"password": "12345678",**  **"identity": "Teacher"**  **},**  **"description": "Java Course for dummies",**  **"students": []**  **}** |

### Add Course

|  |  |
| --- | --- |
| **Service name** | Add Course |
| **Input type** | **POST** |
| **Service URL** | **/edugame/courses/{teacherUsername}/addCourse** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable: String teacherUsername** | **Teacher username: the owner of the course** | | **Cource c** | **The course to be added** | |  |  | |
| **Example request** | **POST**  **/edugame/coursesIsmail\_Ahmed/addCourse**  **{**  **"name": "Java",**  **"description": "Java Course for dummies"**  **}** |
| **Example response** | **{**  **"courseName": "Java",**  **"courseOwner": {**  **"name": "Ismail Ahmed",**  **"gender": "Male",**  **"age": 21,**  **"email": "ismail@ismail.edu",**  **"username": "Ismail\_Ahmed",**  **"password": "12345678",**  **"identity": "Teacher"**  **},**  **"description": "Java Course for dummies",**  **"students": []**  **}** |

### Enroll Student

|  |  |
| --- | --- |
| **Service name** | Enroll Student |
| **Input type** | **GET** |
| **Service URL** | **/edugame/courses/{courseName}/enroll/{studentUsername}** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable: String courseName** | **Course Name.** | | **PathVariable: String studentUsername** | **Student Name.** | |  |  | |
| **Example request** | **GET**  **/edugame/courses/Java/enroll/KarimEhab** |
| **Example response** | **true** |

### Get Unenrolled Courses

|  |  |
| --- | --- |
| **Service name** | Get unenrolled Courses |
| **Input type** | **GET** |
| **Service URL** | **/edugame/unenrolledCourses/{studentUsername}** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable:**  **String studentUsername** | **Student Username to show course in which he/she hasn’t enrolled yet.** | |  |  | |
| **Example request** | **GET**  **/edugame/unenrolledCourses/KarimEhab** |
| **Example response** | **{**  **"courseName": "C++",**  **"courseOwner": {**  **"name": "Alaa Atef",**  **"gender": "Female",**  **"age": 20,**  **"email": "alaa@alaa.edu",**  **"username": "AlaaAtef",**  **"password": "12345678",**  **"identity": "Teacher"**  **},**  **"description": "C++ Course for dummies",**  **"students": []**  **}** |

## Game Services

### Get Game

|  |  |
| --- | --- |
| **Service name** | Get Game |
| **Input type** | **GET** |
| **Service URL** | **/edugame/courses/games/{gameName}** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable String gameName** | **Game Name that we want to get its data.** | |  |  | |
| **Example request** | **GET**  **/edugame/courses/games/HelloWorldC++** |
| **Example response** | **{**  **"name": "HelloWorldC++",**  **"description": null,**  **"type": "TorF",**  **"levels": [**  **{**  **"levelName": "C++ basic",**  **"question": "cout<< prints end line?",**  **"number": 1,**  **"rightAnswer": "True",**  **"answers": [**  **"True",**  **"False"**  **]**  **},**  **{**  **"levelName": "C++ operations",**  **"question": "x=5; cout<<x++ returns 6?",**  **"number": 2,**  **"rightAnswer": "False",**  **"answers": [**  **"True",**  **"False"**  **]**  **}**  **],**  **"gameOwner": {**  **"name": "Alaa Atef",**  **"gender": "Female",**  **"age": 20,**  **"email": "alaa@alaa.edu",**  **"username": "AlaaAtef",**  **"password": "12345678",**  **"identity": "Teacher"**  **},**  **"levelno": 2,**  **"course": {**  **"courseName": "C++",**  **"courseOwner": {**  **"name": "Alaa Atef",**  **"gender": "Female",**  **"age": 20,**  **"email": "alaa@alaa.edu",**  **"username": "AlaaAtef",**  **"password": "12345678",**  **"identity": "Teacher"**  **},**  **"description": "C++ Course for dummies",**  **"students": []**  **}**  **}** |

### Add game

|  |  |
| --- | --- |
| **Service name** | Add Game |
| **Input type** | **POST** |
| **Service URL** | **/edugame/courses/{teacherUsername}/{courseName}/games/addGame** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable String teacherUsername** | **Username of the teacher (owner) of the game.** | | **PathVariable String courseName** | **Course Name that we wish to add the game in.** | | **Body: Game g** | **The game itself.** | |  |  | |
| **Example request** | **POST /edugame/courses/AlaaAtef/C++/games/addGame**  **Body:**  **{**  **"name": "HelloWorldC++",**  **"type": "TorF",**  **"levelno": 2**  **}** |
| **Example response** | **true** |

### Get Games of Course

|  |  |
| --- | --- |
| **Service name** | Get Games of Course |
| **Input type** | **GET** |
| **Service URL** | **/edugame/courses/{courseName}/games** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable String courseName** | **The course to get its games.** | |  |  | |
| **Example request** | **GET**  **/edugame/courses/C++/games** |
| **Example response** | **[**  **{**  **"name": "HelloWorldC++",**  **"description": null,**  **"type": "TorF",**  **"levels": [**  **{**  **"levelName": "C++ basic",**  **"question": "cout<< prints end line?",**  **"number": 1,**  **"rightAnswer": "True",**  **"answers": [**  **"True",**  **"False"**  **]**  **},**  **{**  **"levelName": "C++ operations",**  **"question": "x=5; cout<<x++ returns 6?",**  **"number": 2,**  **"rightAnswer": "False",**  **"answers": [**  **"True",**  **"False"**  **]**  **}**  **],**  **"gameOwner": {**  **"name": "Alaa Atef",**  **"gender": "Female",**  **"age": 20,**  **"email": "alaa@alaa.edu",**  **"username": "AlaaAtef",**  **"password": "12345678",**  **"identity": "Teacher"**  **},**  **"levelno": 2,**  **"course": {**  **"courseName": "C++",**  **"courseOwner": {**  **"name": "Alaa Atef",**  **"gender": "Female",**  **"age": 20,**  **"email": "alaa@alaa.edu",**  **"username": "AlaaAtef",**  **"password": "12345678",**  **"identity": "Teacher"**  **},**  **"description": "C++ Course for dummies",**  **"students": []**  **}**  **}**  **]** |

### Add Collaborator

|  |  |
| --- | --- |
| **Service name** | Add collaborator |
| **Input type** | **GET** |
| **Service URL** | **/edugame/courses/games/{gameName}/addCollaborator/{username}** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable String gameName** | **The game to which the collaborator is added.** | | **PathVariable String username** | **Username of the added collaborator.** | |  |  | |
| **Example request** | **GET**  **/edugame/courses/games/Game 2/addCollaborator/Ismail\_Ahmed** |
| **Example response** | **true** |

### Cancel Game

|  |  |
| --- | --- |
| **Service name** | Cancel Game |
| **Input type** | **DELETE** |
| **Service URL** | **/edugame/courses/games/{gameName}/delete** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable String gameName** | **Game Name of the deleted game.** | |
| **Example request** | **DELETE**  **/edugame/courses/games/Game 1/delete** |
| **Example response** |  |

## Level Services

### Get Level

|  |  |
| --- | --- |
| **Service name** | Get level |
| **Input type** | **GET** |
| **Service URL** | **/edugame/courses/games/{gameName}/levels/{levelno}** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable String gameName** | **Game Name that the level belongs to.** | | **PathVariable int levelNo** | **Level number in the game.** | |  |  | |
| **Example request** | **GET**  **/edugame/courses/games/HelloWorldC++/levels/1** |
| **Example response** | **{**  **"levelName": "C++ basic",**  **"question": "cout<< prints end line?",**  **"number": 1,**  **"rightAnswer": "True",**  **"answers": [**  **"True",**  **"False"**  **]**  **}** |

### Get Levels

|  |  |
| --- | --- |
| **Service name** | Get levels |
| **Input type** | **GET** |
| **Service URL** | **/edugame/courses/games/{gameName}/levels** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable String gameName** | **Game Name that we want to get its levels.** | |
| **Example request** | **GET**  **/edugame/courses/games/HelloWorldC++/levels** |
| **Example**  **response** | **[**  **{**  **"levelName": "C++ basic",**  **"question": "cout<< prints end line?",**  **"number": 1,**  **"rightAnswer": "True",**  **"answers": [**  **"True",**  **"False"**  **]**  **},**  **{**  **"levelName": "C++ operations",**  **"question": "x=5; cout<<x++ returns 6?",**  **"number": 2,**  **"rightAnswer": "False",**  **"answers": [**  **"True",**  **"False"**  **]**  **}**  **]** |

### Add Level

|  |  |
| --- | --- |
| **Service name** | Add level |
| **Input type** | **POST** |
| **Service URL** | **/edugame/courses/games/{gameName}/levels/addLevel** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable String gameName** | **Game Name that we want to add a level to.** | | **Body: Level l** | **The level to be added.** | |
| **Example request** | **POST /edugame/courses/games/HelloWorldC++/levels/addLevel**  **Body:**  **{**  **"levelName": "C++ operations",**  **"question": "x=5; cout<<x++ returns 6?",**  **"number": 2,**  **"rightAnswer": "False",**  **"answers":[**  **"True",**  **"False"**  **]**  **}** |
| **Example response** |  |

## Achievement Services

### Show Achievements

|  |  |
| --- | --- |
| **Service name** | Show Achievements |
| **Input type** | **GET** |
| **Service URL** | **/edugame/achievements/{username}** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable String username** | **Username of the user that we want to get his/her achievements.** | |
| **Example request** | **/edugame/achievements/KarimEhab** |
| **Example response** | **[**  **{**  **"score": 100,**  **"student": {**  **"name": "Karim Ehab",**  **"gender": "Male",**  **"age": 20,**  **"email": "karim@karim.com",**  **"username": "KarimEhab",**  **"password": "12345678",**  **"identity": "Student"**  **},**  **"gameinAch": {**  **"name": "Ta7meer",**  **"description": "2atta3 swabe3 aw chipsy",**  **"type": "true-false",**  **"levels": [**  **{**  **"levelName": "chipsy",**  **"question": "yo7amar fi zobda?",**  **"number": 2,**  **"rightAnswer": "False",**  **"answers": [**  **"True",**  **"False"**  **]**  **},**  **{**  **"levelName": "swabe3",**  **"question": "tonqa3 elswabe3 fi ma2 w mal7?",**  **"number": 1,**  **"rightAnswer": "True",**  **"answers": [**  **"True",**  **"False"**  **]**  **}**  **],**  **"gameOwner": {**  **"name": "Alaa Atef",**  **"gender": "Female",**  **"age": 20,**  **"email": "alaa@alaa.edu",**  **"username": "AlaaAtef",**  **"password": "12345678",**  **"identity": "Teacher"**  **},**  **"levelno": 2,**  **"course": {**  **"courseName": "Btates",**  **"courseOwner": {**  **"name": "Alaa Atef",**  **"gender": "Female",**  **"age": 20,**  **"email": "alaa@alaa.edu",**  **"username": "AlaaAtef",**  **"password": "12345678",**  **"identity": "Teacher"**  **},**  **"description": "kayf t7amar elbtates b tareeqa e7trafya",**  **"students": []**  **}**  **}**  **}**  **]** |

### Add achievements

|  |  |
| --- | --- |
| **Service name** | Add Achievement |
| **Input type** | **GET** |
| **Service URL** | **/edugame/{username}/courses/games/{gameName}/levels/{levelno}** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable String gameName** | **Game Name that the level belongs to.** | | **PathVariable int levelNo** | **Level number in the game.** | | **PathVariable**  **String username** | **Username of the student playing the game.** | |  |  | |
| **Example request** | **GET**  **/edugame/ElMensh/courses/games/HelloWorldC++/levels/1** |
| **Example response** |  |

## Notification Services

### Get User Notifications

|  |  |
| --- | --- |
| **Service name** | Get User Notifications |
| **Input type** | **GET** |
| **Service URL** | **/edugame/notifications/{username}** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable**  **String username** | **Username to get his/her notifications.** | |  |  | |
| **Example request** | **GET**  **/edugame/notifications/ElMensh** |
| **Example response** | **[**  **{**  **"username": "ElMensh",**  **"notification": "Game 2 is added to C++ course.",**  **"link": "Game 2"**  **}**  **]** |

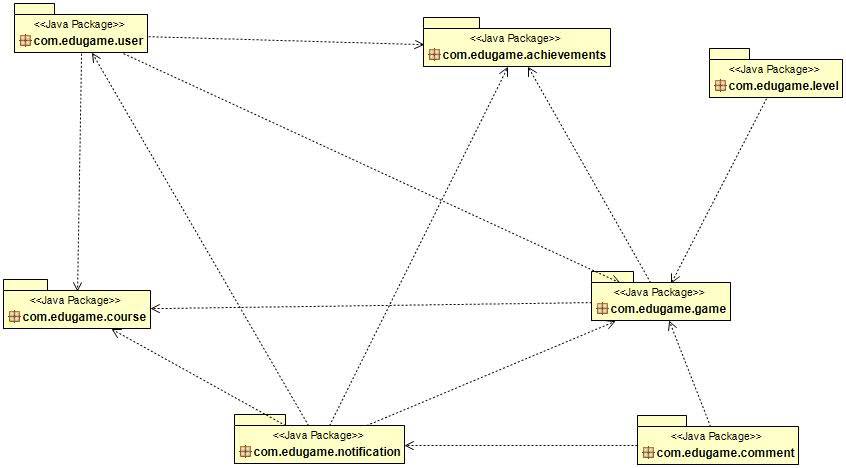
## Comment Services

### Add Comment

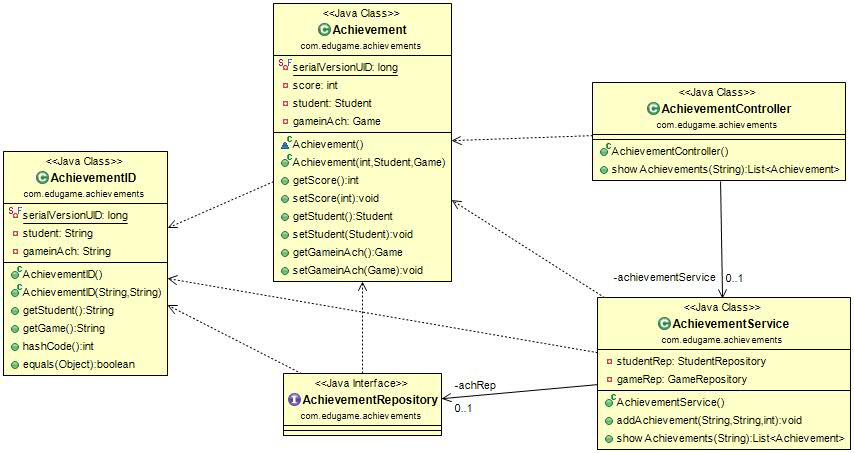
|  |  |
| --- | --- |
| **Service name** | Add Comment |
| **Input type** | **POST** |
| **Service URL** | **/edugame/courses/games/{gameName}/comments/addComment** |
| **Parameters** | |  |  | | --- | --- | | **NAME** | **Description** | | **PathVariable**  **String gameName** | **gameName of the game the comments will be added to.** | | **RequestBody**  **Comment c** | **Object of comment to be added in the database.** | |  |  | |
| **Example request** | **POST**  **/edugame/courses/games/HelloWorldJava/comments/addComment**  **Body:**  **{**  **"username": "KarimEhab",**  **"comment": "Good Game!"**  **}** |
| **Example response** |  |

# Class diagram design

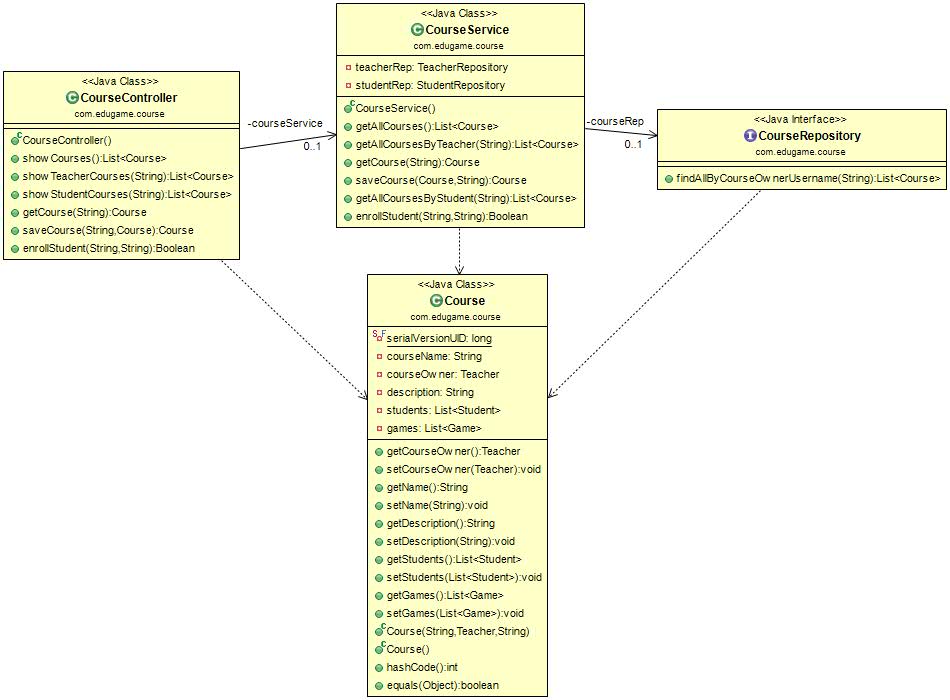
## Subsystems



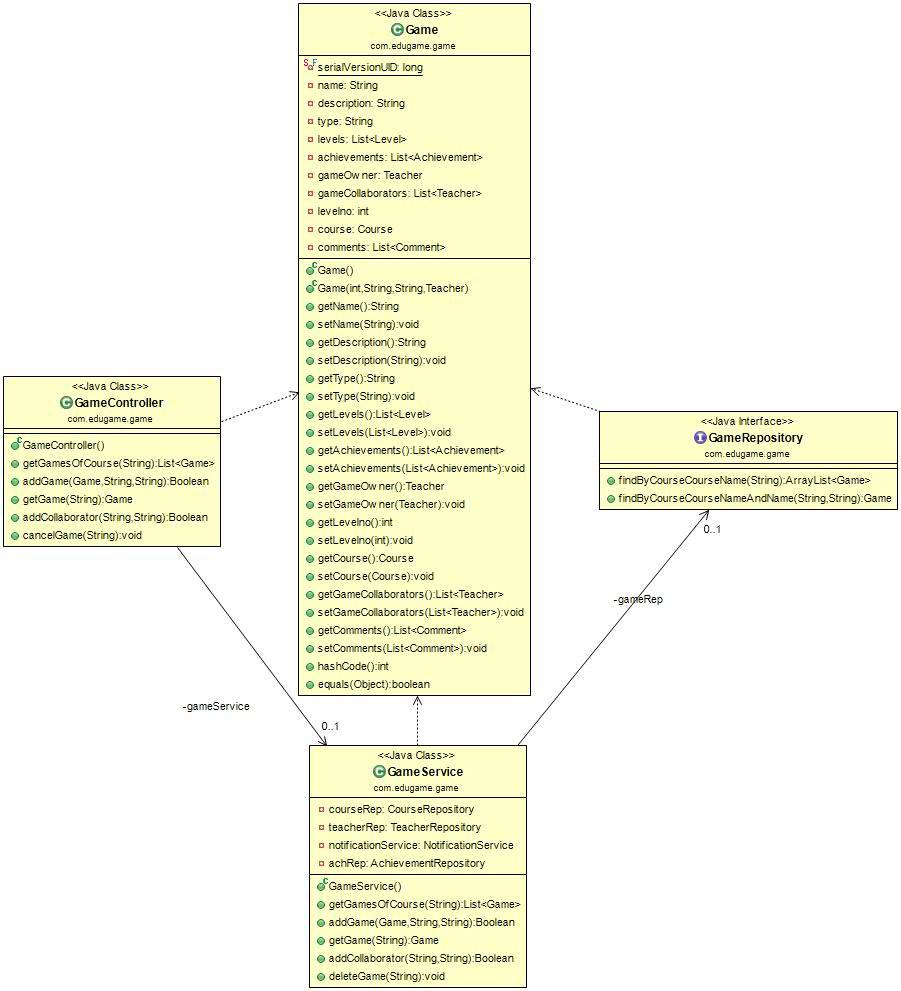
## Achievement



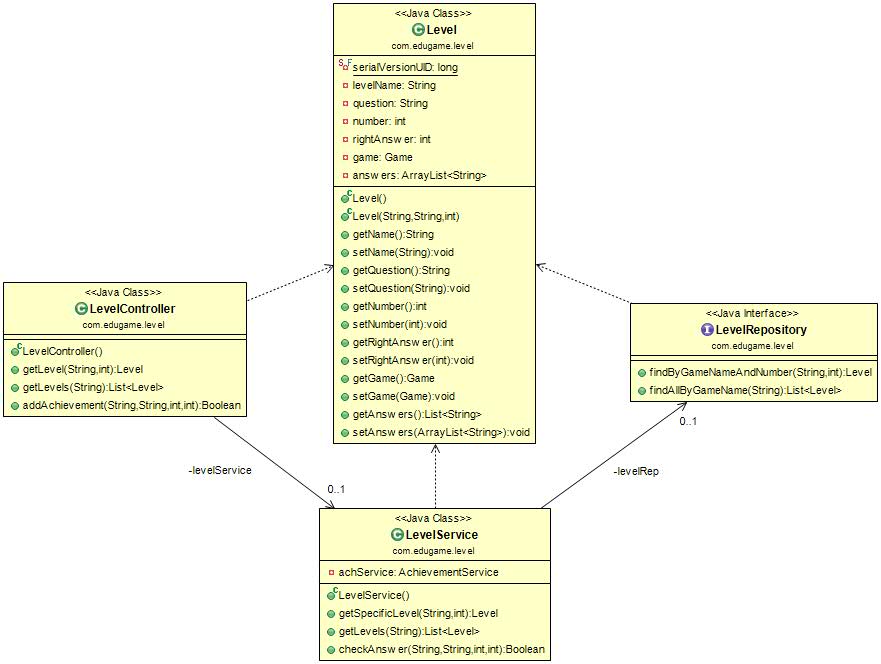
## Course



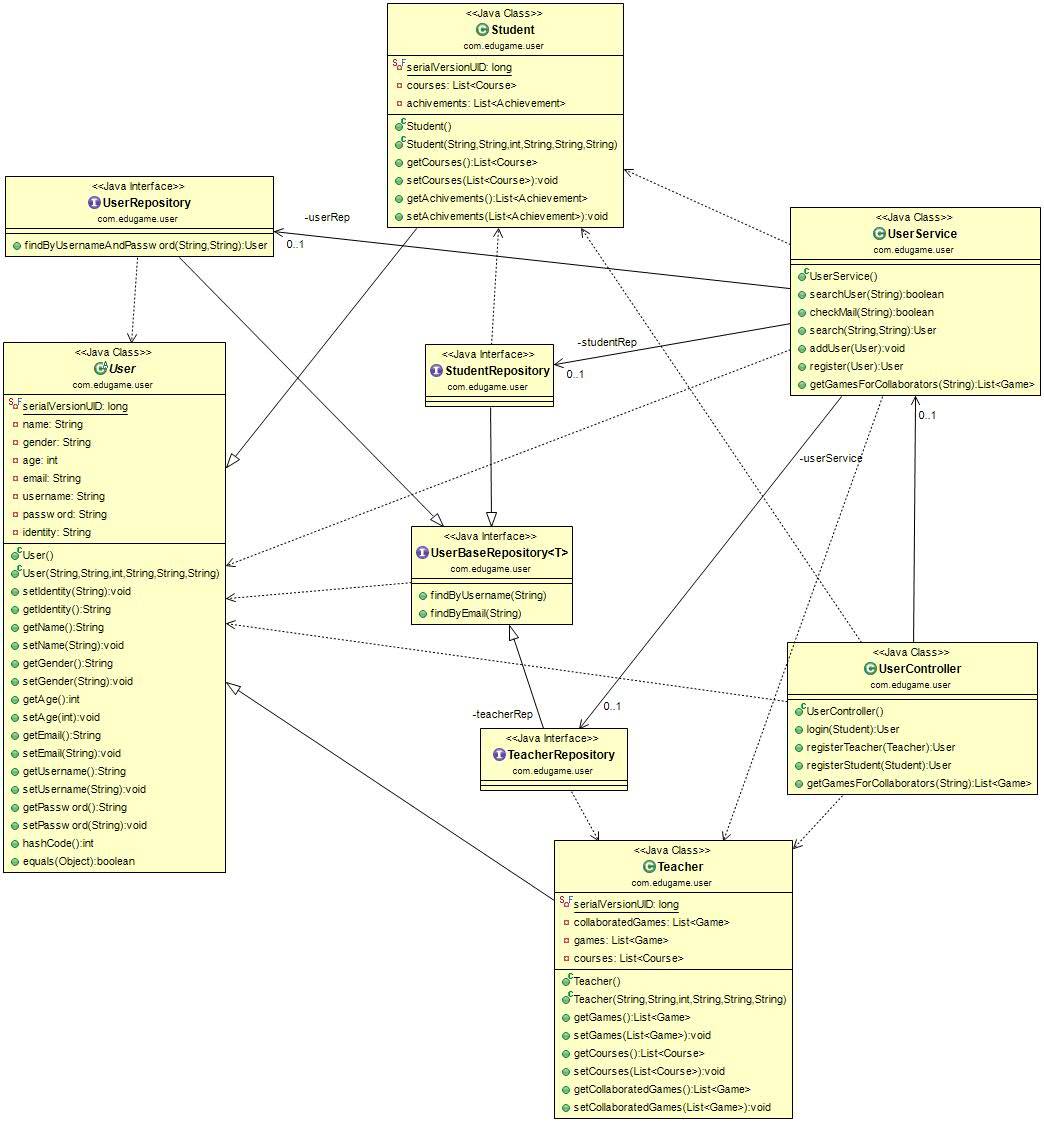
## Game



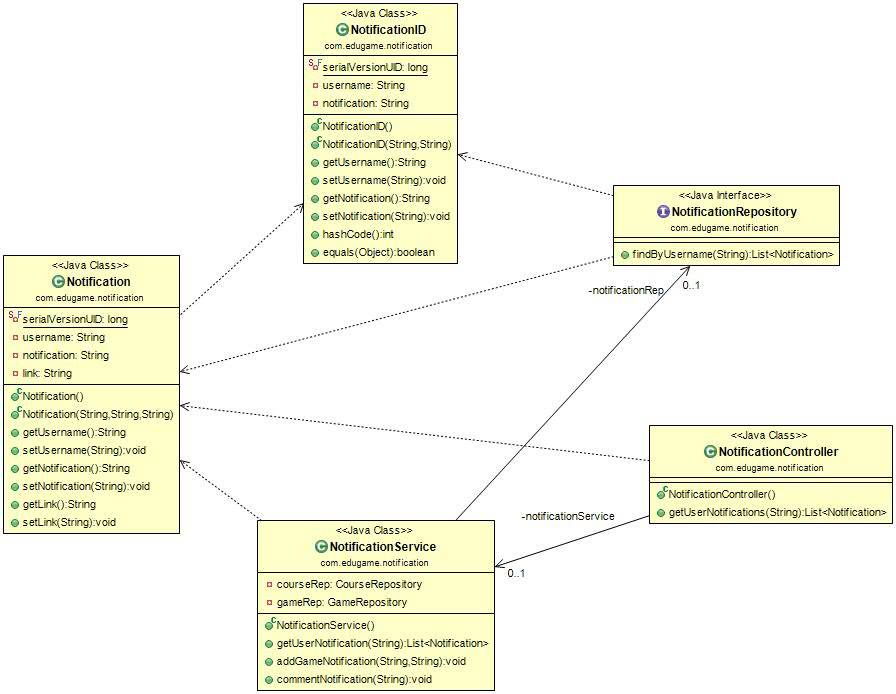
## Level



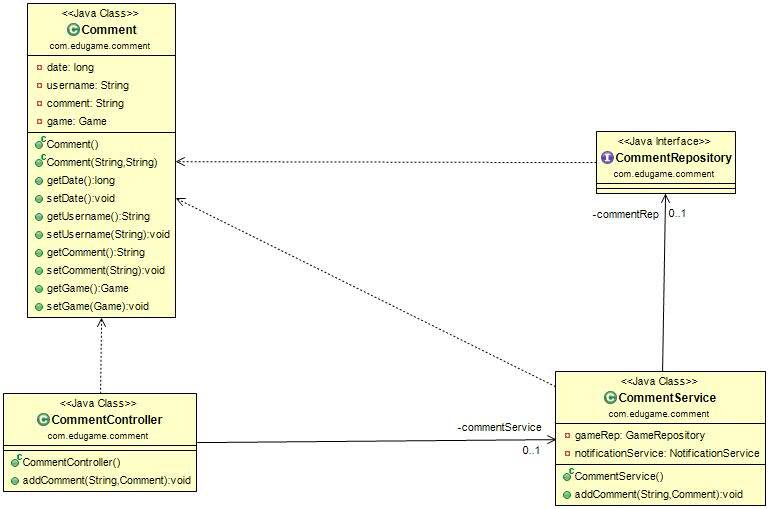
## User



## Notification

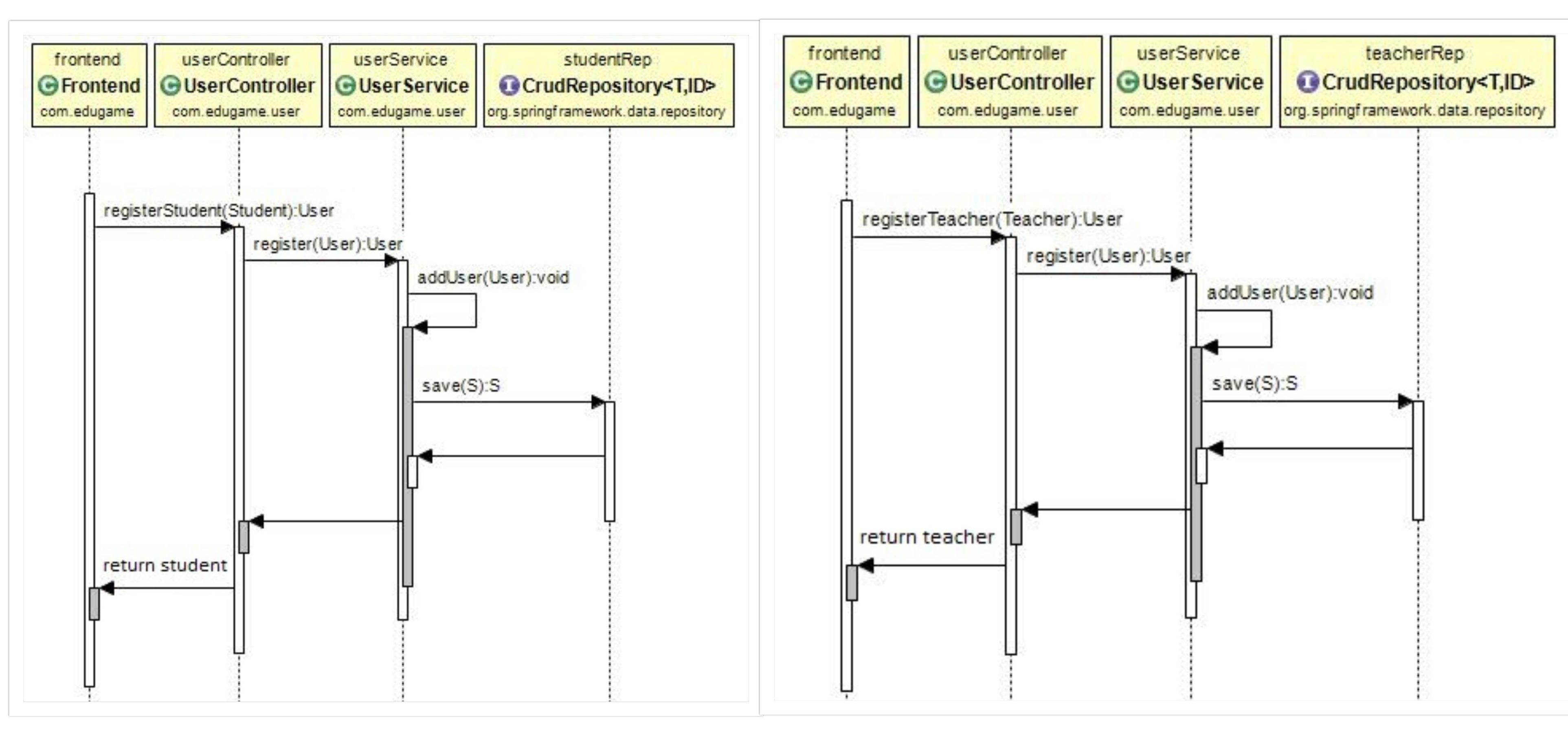


## Comment

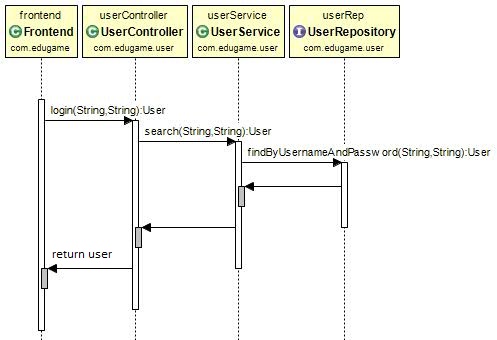


# Sequence Diagrams

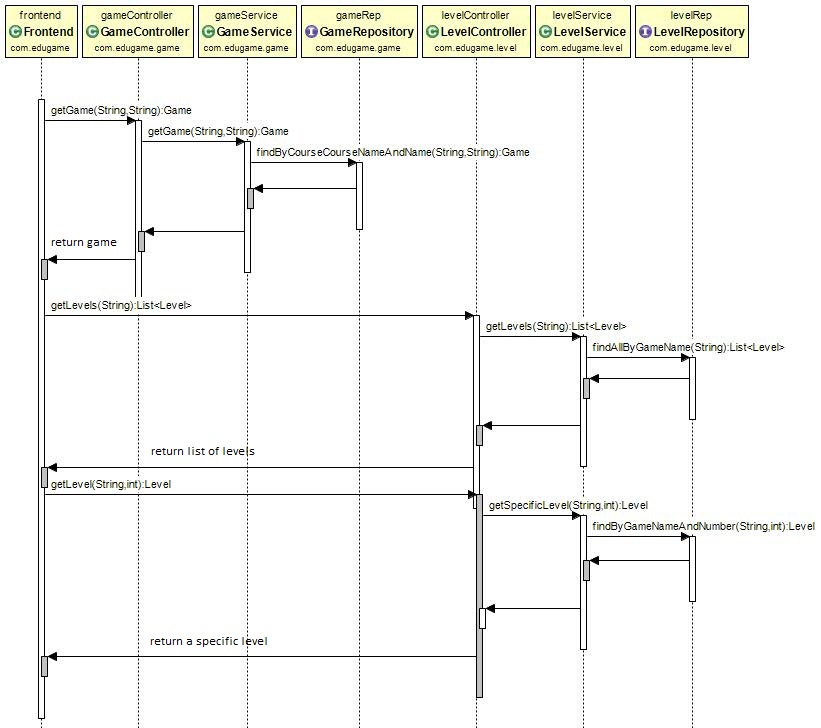
## Register



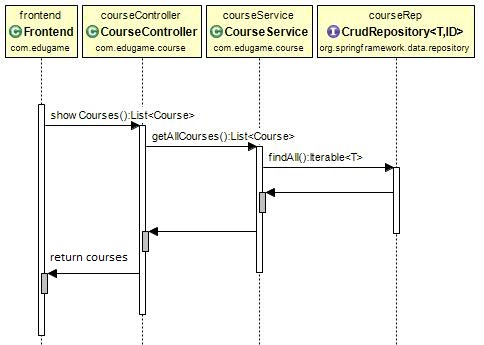
## Login



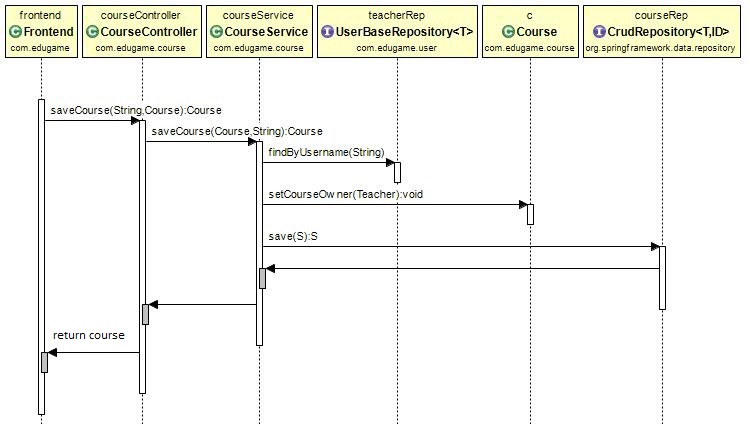
## Play Game



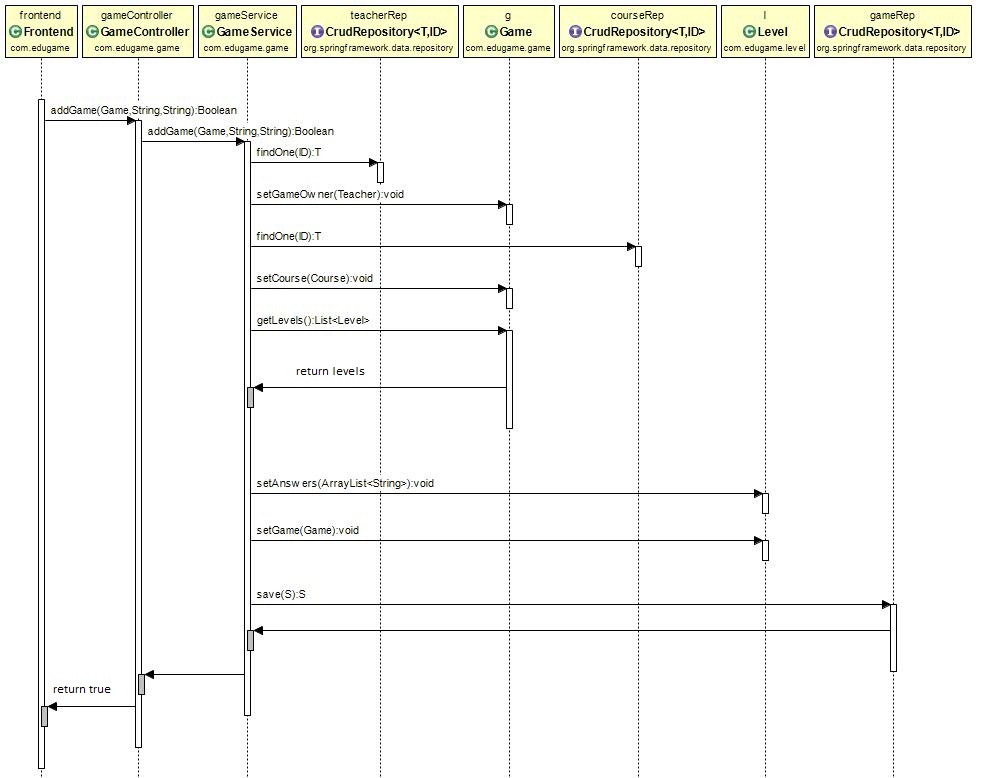
## Show Courses



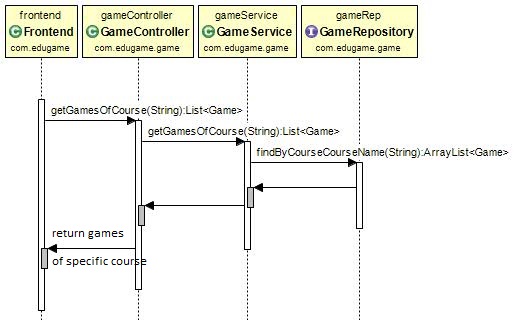
## Create Course



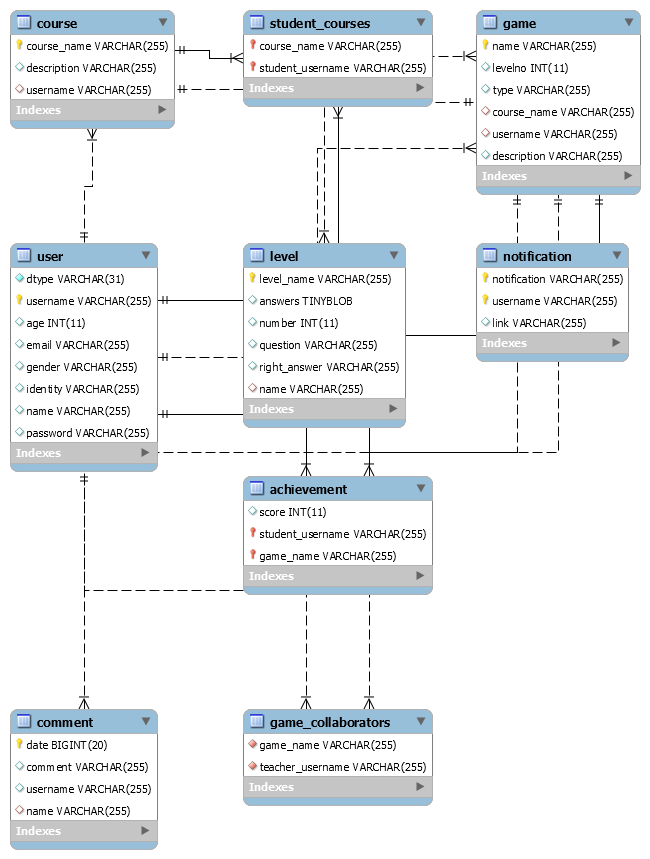
## Create Game



## Show Games in specific course

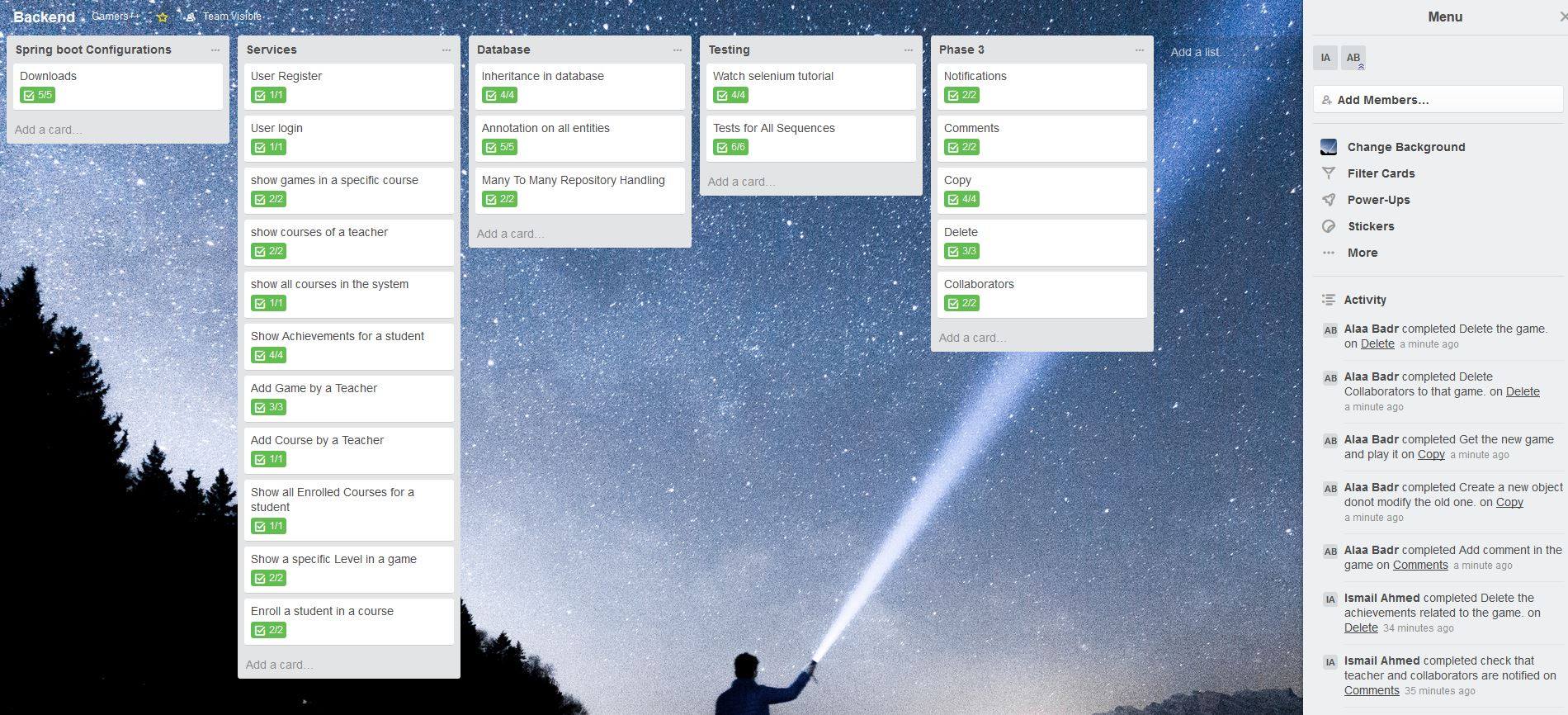


# Entity Relationship Diagram – ERD

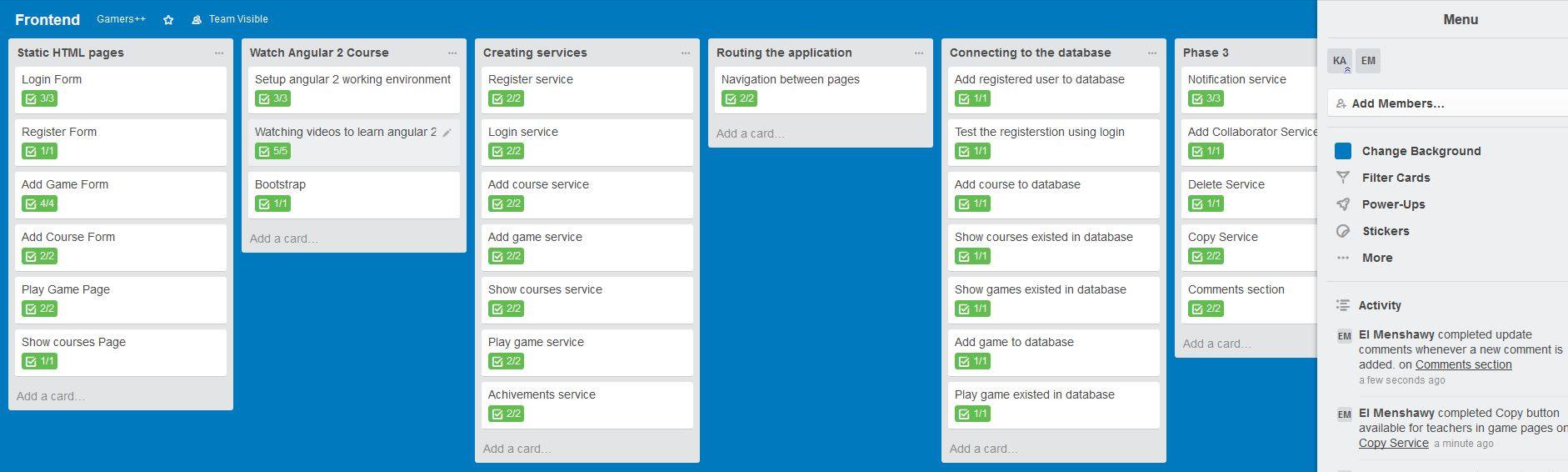


# Trello workspace screenshot

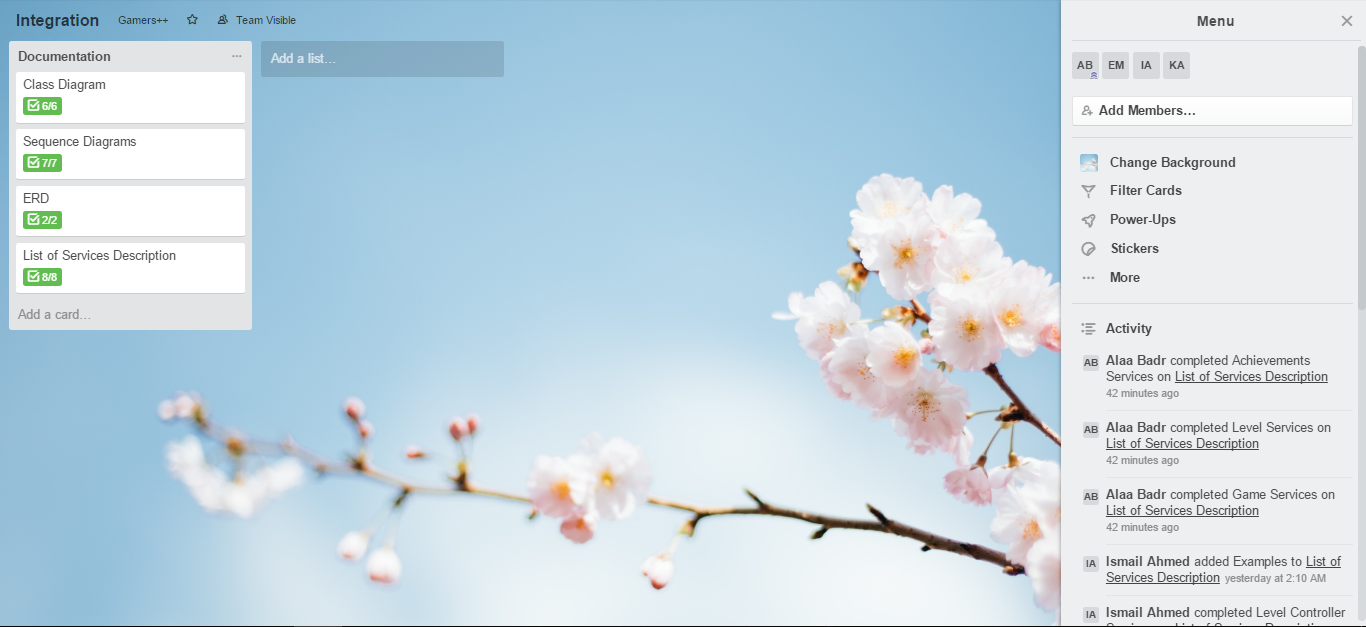
## Backend

****

## Frontend



## Integration



# Github repository link

***https://github.com/AlaaBadr/SWE2-Project***