Cairo University  
Faculty of Computers and Information



**CS251**

**Software Engineering I**

GoFo

Software Design Specifications

Version 2.0

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# Team

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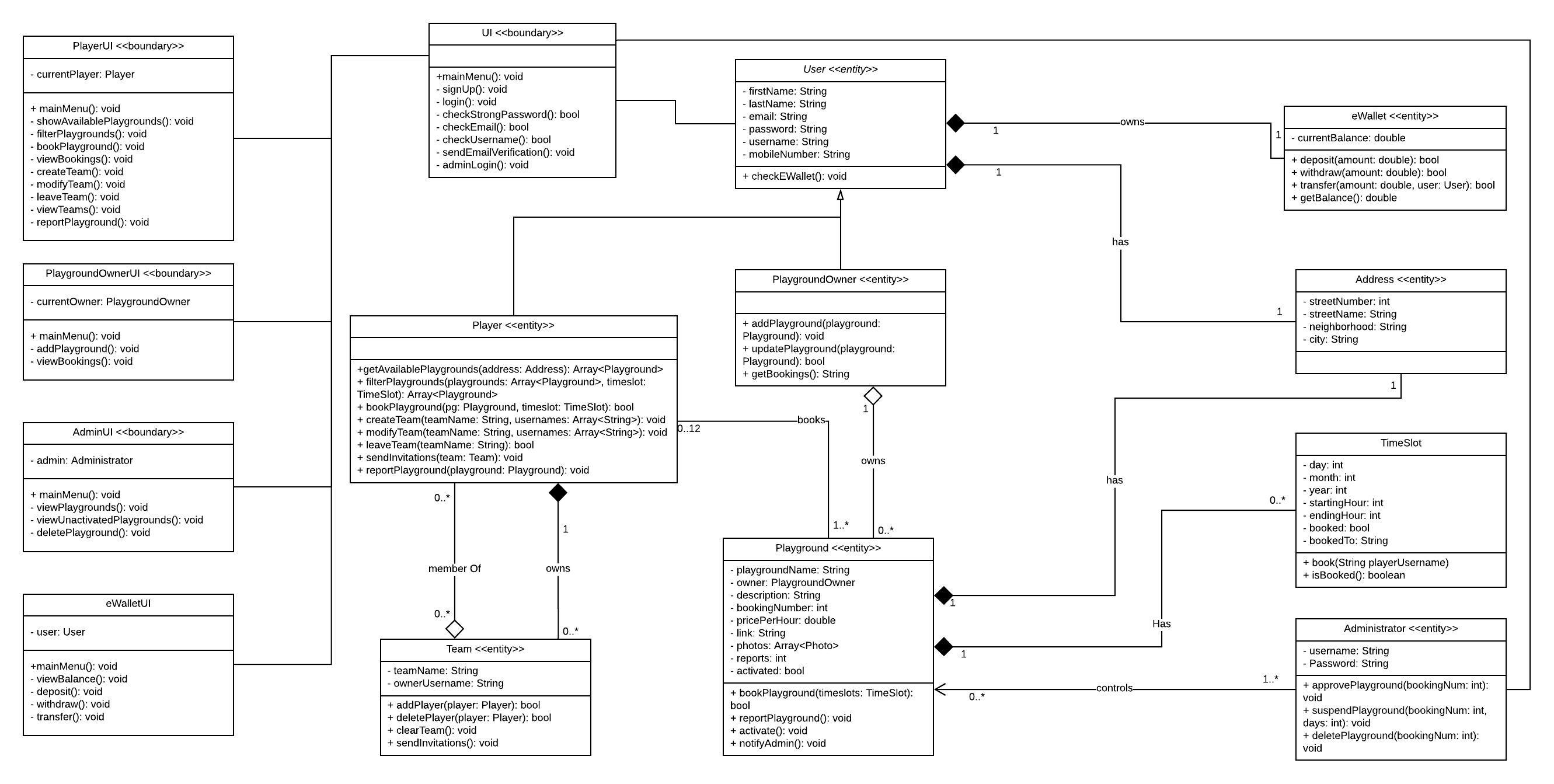
# Document Purpose and Audience

* **This document includes Software Design Specifications for GoFo football playground booking system. It describes the Class diagrams, Sequence diagrams and State diagrams.**
* **It is specially meant for developers that will work on the project in order to be organized.**

# 

# System Models

## I. Class Diagram(s)



## 

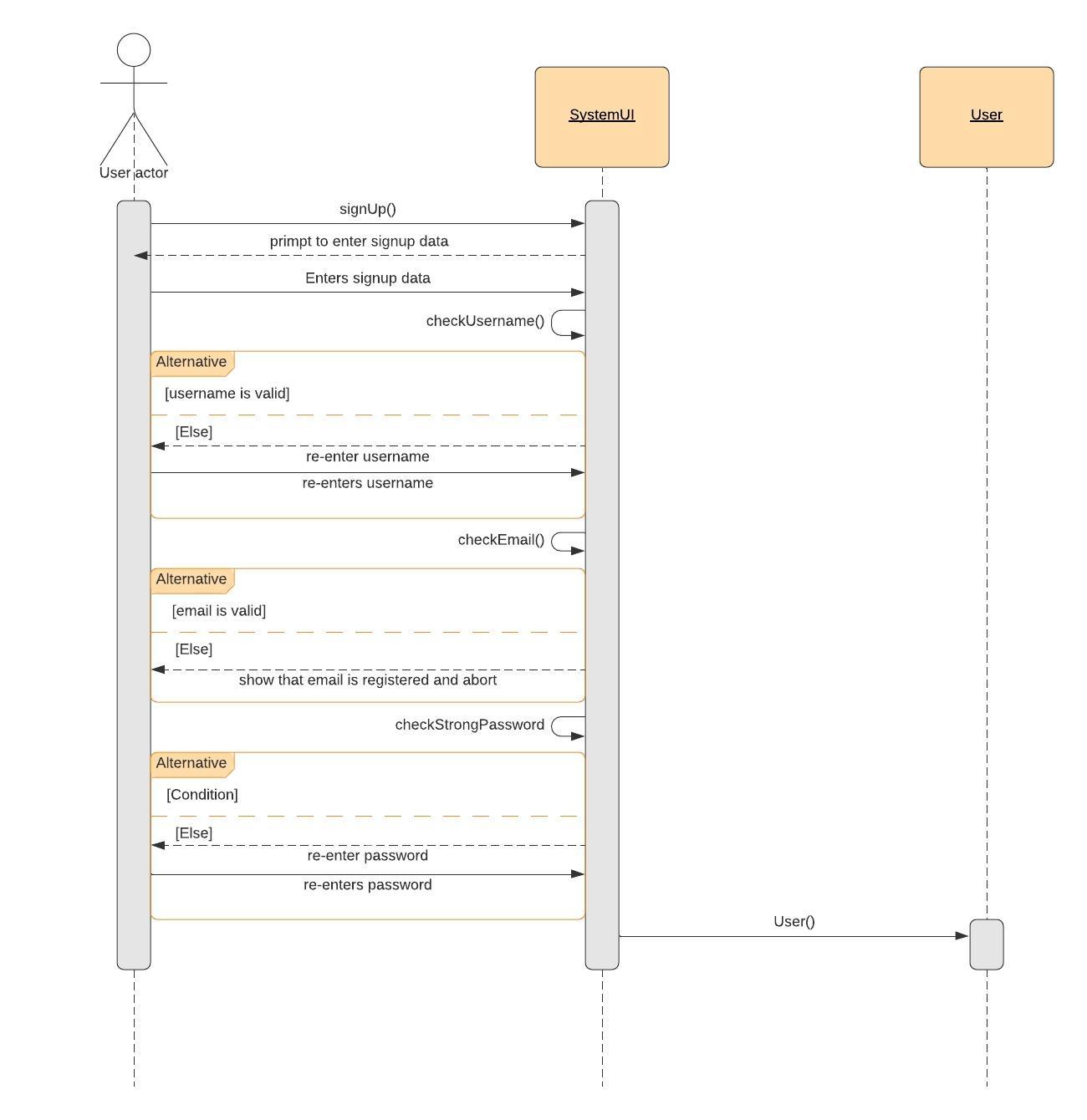
## II. Class Descriptions

| **Class ID** | **Class Name** | **Description & Responsibility** |
| --- | --- | --- |
| 1 | User | An abstract class (generalization) that holds the common properties between a Player and a Playground Owner |
| 2 | Player | A class that inherits User, and allows player to book playgrounds and do player functionalities. |
| 3 | PlaygroundOwner | A class that inherits User, and allows an owner to add (own) playgrounds and control them |
| 4 | Playground | A class that hold the attributes and operations that are done on a Playground, and it is ownder by a PlaygroundOwner |
| 5 | Team | A class that is meant to group players together to form a team, and has a team owner Player and team member Players. |
| 6 | eWallet | A class that has the responsibility of controlling financial operations in the system, and can be connected to an outside method like Fawry, and any User must have one eWallet. |
| 7 | Address | A class that hold an address information divided into pieces in order to make the process of searching for playgrounds in a specific area easier, and it’s owned by Users. |
| 8 | Administrator | A class that can do special operations concerning playgrounds such as delete or suspend a playground |
| 9 | TimeSlot | A class that is meant to store time slot data which is a date and a starting hour and an ending hour. |
| 10 | UI | A boundary class for enabling users to sign up and login to the system, |
| 11 | PlayerUI | A boundary class for enabling players to interact with the system, book playgrounds, etc. |
| 12 | PlaygroundOwnerUI | A boundary class for enabling owners to interact with the system, add playgrounds, review their current bookings, etc. |
| 13 | AdminUI | A boundary class for enabling admins to control playgrounds, like activating, suspending or deleting a playground |
| 14 | eWalletUI | A boundary class for users whether players of owners to check their eWallet balance, deposit using an external service, or withdraw their money. |

## 

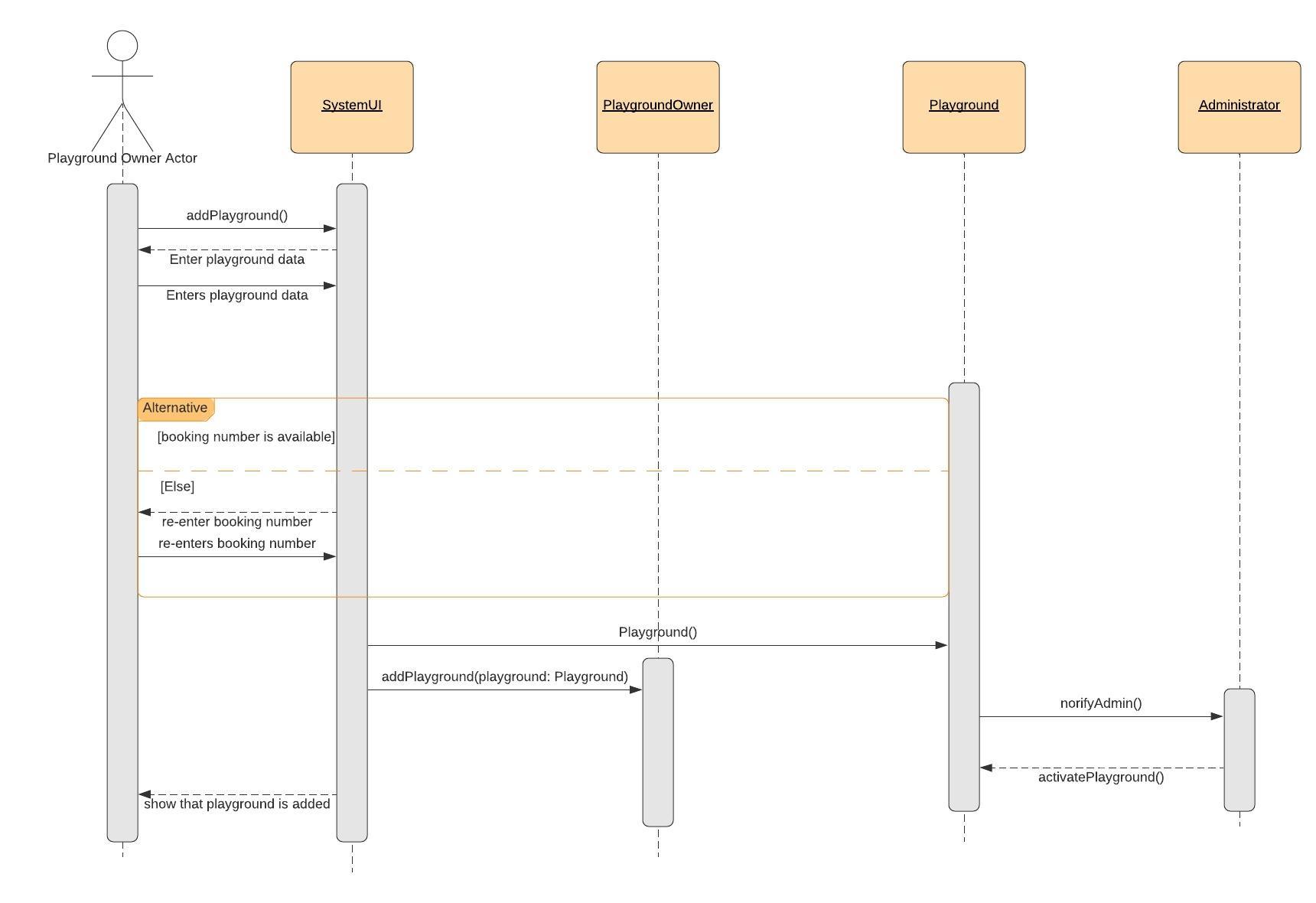
## III. Sequence diagrams

1. **Register a new user**

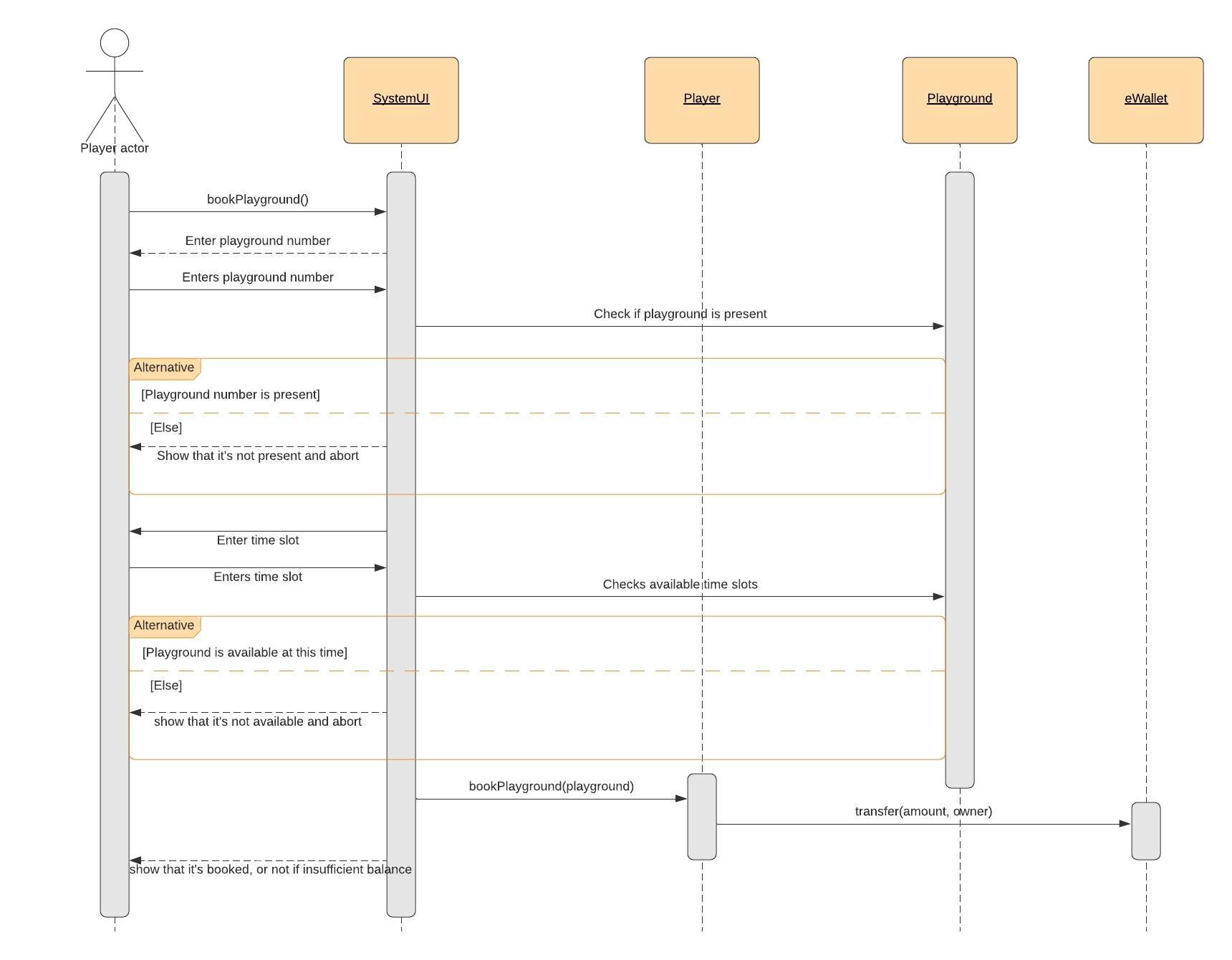


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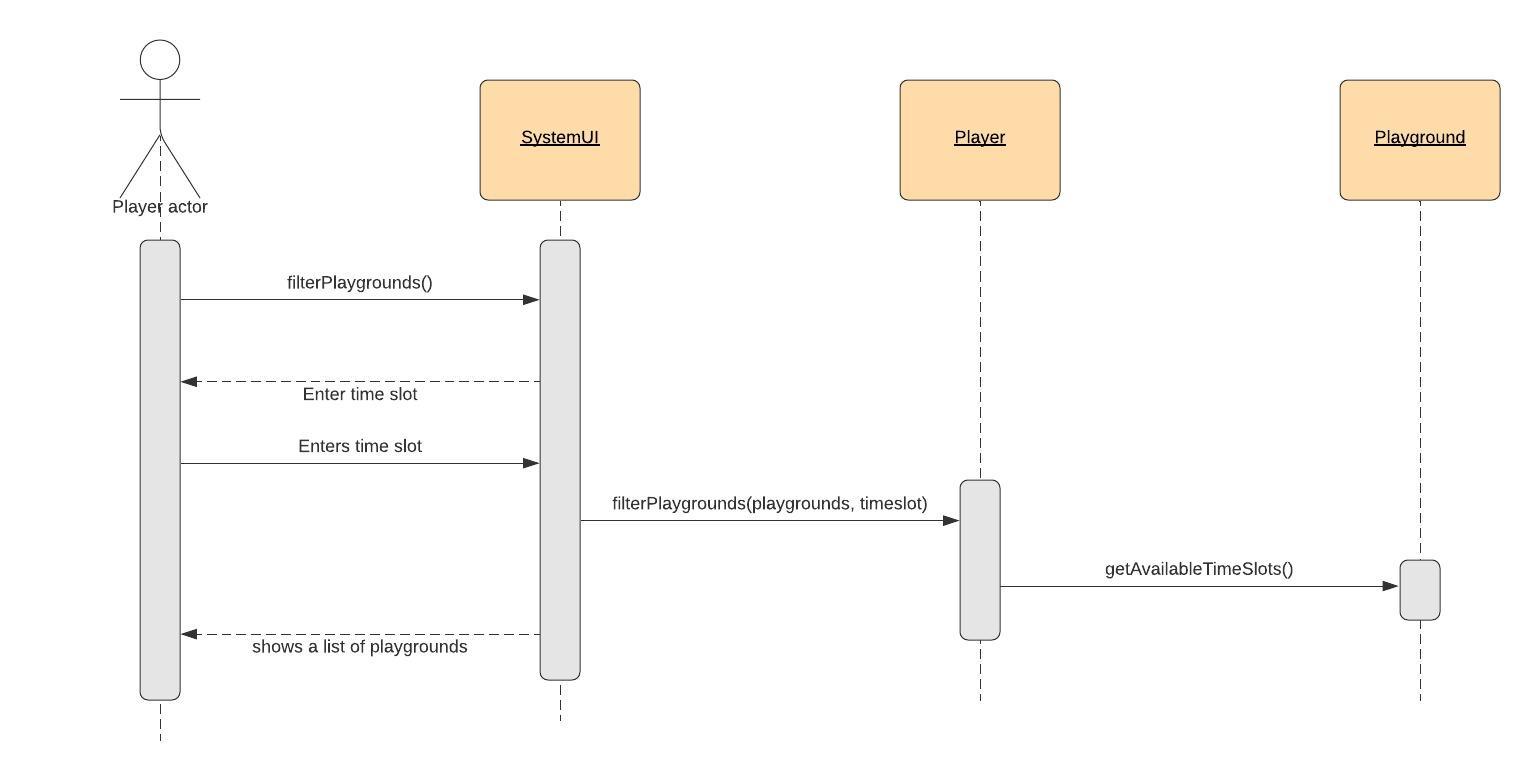
### Add a Playground



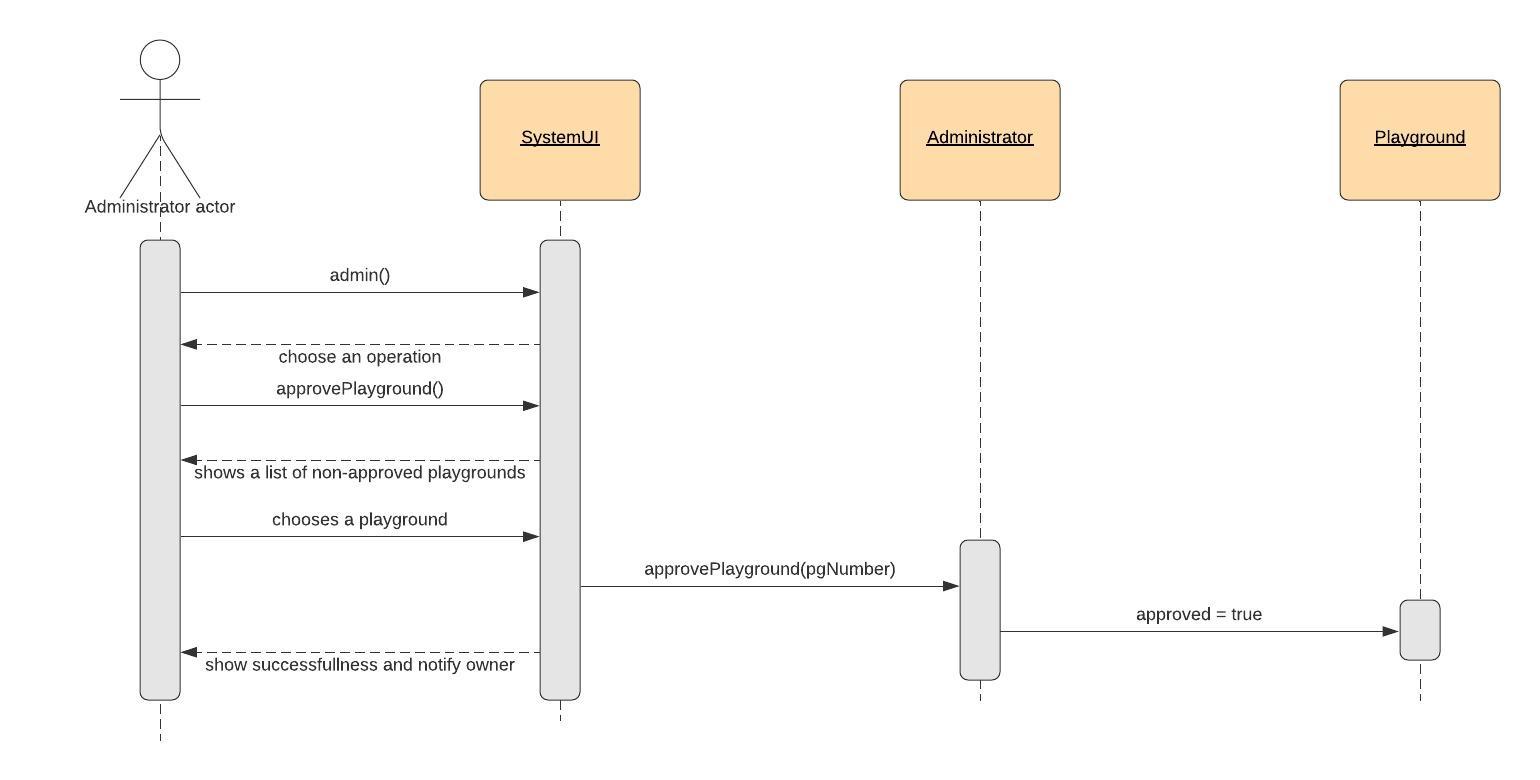
### Book a Playground



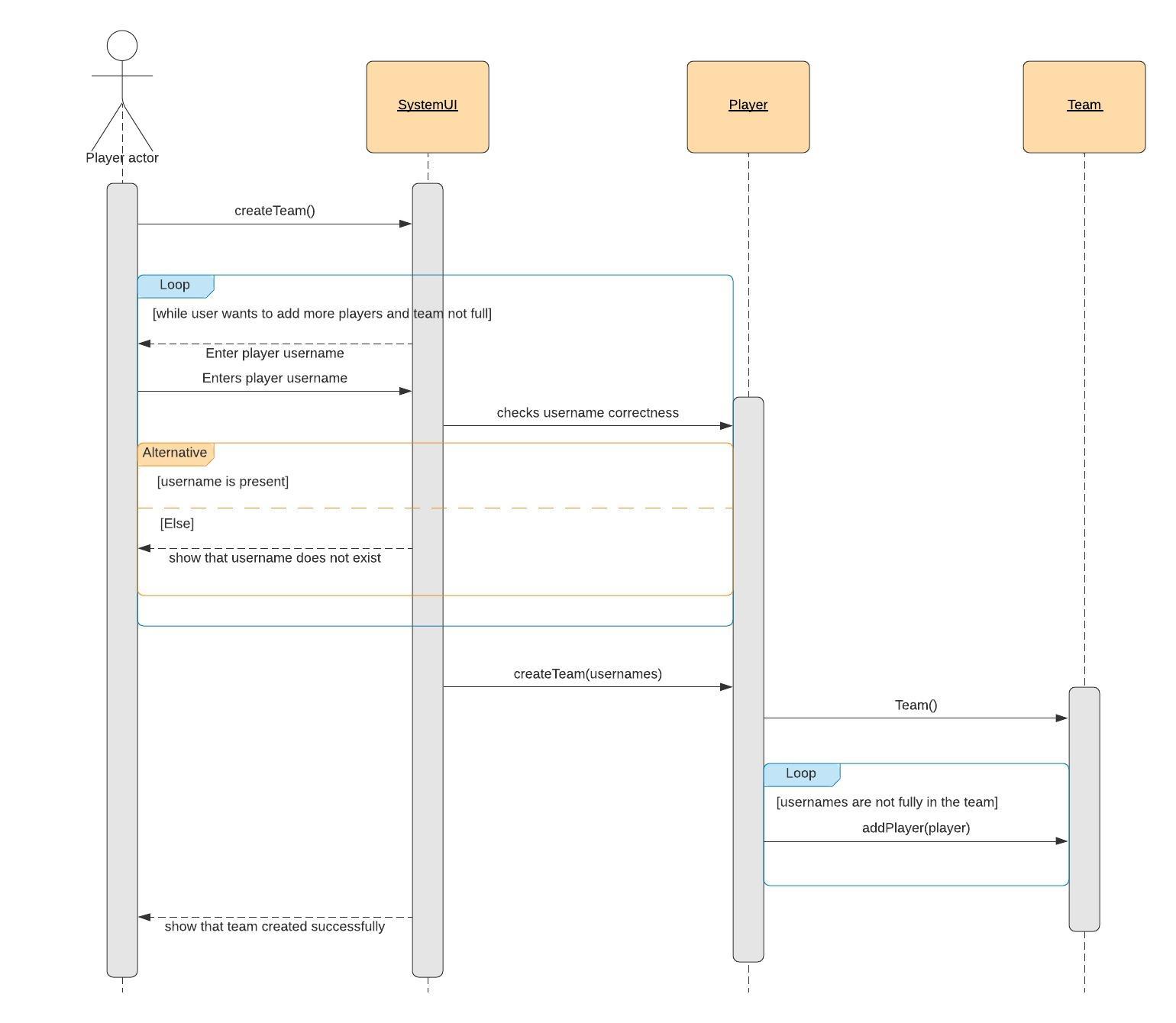
### Filter Playgrounds using time slots



### Approve a playground by an Administrator



### Create a Team



### 

### Class - Sequence Usage Table

| **Sequence Diagram** | **Classes Used** | **All Methods Used** |
| --- | --- | --- |
| 1. Register a new user | Class UI  Class User | signUp()  checkUsername()  checkEmail()  checkStrongPassword()  User() |
| 1. Add a Playground | Class PlaygroundOwnerUI  Class PlaygroundOwner  Class Playground  Class Administrator | addPlayground()  Playground()  addPlayground(playground)  notifyAdmin()  activatePlayground() |
| 1. Book a Playground | Class PlayerUI  Class Player  Class Playground  Class eWallet | bookPlayground()  bookPlayground(playground, timeslot)  transfer(amount, owner) |
| 1. Filter Playgrounds by timeslots | Class PlayerUI  Class Player  Class Playground | filterPlaygrounds()  filterPlaygrounds(playgrounds, timeslots)  getAvailableTimeSlots() |
| 1. Approve a Playground by Administrator | Class AdminUI  Class Administrator  Class Playground | Admin()  approvePlayground()  approvePlayground(pgNumber) |
| 1. Create a Team | Class PlayerUI  Class Player  Class Team | createTeam()  createTeam(usernames)  addPlayer(player) |

## 

## IV. User Interface Design

* **Provide a design of all the important screens of your system as wireframes or mockups. Use a tool to do that. Give each screen a number and name.**
* **Draw a navigation map that show how the screens are related (See example at** <https://stuff.mit.edu/afs/sipb/project/android/docs/training/design-navigation/wireframing.html>)
* **For each screen, describe what it does and what it is for.**

|  |  |  |
| --- | --- | --- |
| **Screen ID** | **Screen Name** | **Screen / Wireframe Description** |
|  |  |  |

# Tools

* **LucidChart : Used in the UML Class Diagram and Sequence Diagrams**

# Ownership Report

|  |  |
| --- | --- |
| **Item** | **Owners** |
| Class diagram and 3 sequence diagrams | Mahmoud Mohamed Abdelazim |
| Part of GoFo implementation | Ahmed Alaa Eldin |
| Part of GoFo implementation | Amr Bumadian |
| UI designs and part of GoFo implementation | Ziad Amr |
| UI designs and 3 sequence diagrams | Eslam Fawzy |

# 

# References

* <http://www.mhhe.com/engcs/compsci/pressman/graphics/Pressman5sepa/common/cs1/design.pd>
* Mockups (<https://moqups.com/>).
* How to use Mockups <https://www.youtube.com/watch?v=glijkZFo4AY>
* Example wireframes and designs (you can contact the author for questions) <http://malakumar.com/wp-content/uploads/2018/12/MalaKumar_SampleWireframes-1.pdf>

# Authors

* Mostafa Saad and Mohammad El-Ramly (Edited by Mohamed Samir) (V1.0)
* Updated by Mohammad El-Ramly (V2.0)