Cairo University  
Faculty of Computers and Artificial Intelligence



**CS251**

**Software Engineering I**

“GoFo”

Software Design Specifications

Version 1.0

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# Document Purpose and Audience

* This document is a completion for the SRS document through which we will explain in detail the class diagram, class description and sequence diagram for the most important user stories in the “GoFo” program.
* The target audience to read this document are software engineers who will work on the development of the “GoFo” program and the clients who need it.

# System Models

## I. Class Diagram(s)

Diagram, schematic

Description automatically generated

## II. Class Descriptions

| **Class ID** | **Class Name** | **Description & Responsibility** |
| --- | --- | --- |
| 1. | Person | An abstract parent class in which classes Player, PlaygroundOwner and admin inherits from. |
| 2. | Player | A child class that inherits from class Person which allows the player user to request a playground, book a playground, display all his requests, display all his booking, fill register form, create a team, join a team, and send invitations to his friends to join his team. |
| 3. | PlaygroundOwner | A child class that inherits from class Person which allows the playground owner to add a playground, update the available hours for his playground, view all the requests for his playground and giving him the ability to accept or refuse a booking request, display all the current bookings for his playground, and check his E-wallet. |
| 4. | Admin | A child class that inherits from class Person which gives the admin the authority to accept a waiting playground, suspend a playground, activate a suspended playground, reject a playground, and delete a playground from the system. |
| 5. | Team | A class that consists of an array list of players throw which the player can display his team. |
| 6. | Structure | Class System is acting a s a data base for the following objects: Playgrounds, PlaygroundOwners, Players, Requests, Bookings also it is responsible for the search and display function which is one of the most important functions in the system. |
| 7. | Request | It is responsible for handling the requests for playgrounds made by players. |
| 9. | Booking | It takes the requests that have been accepted by the playground owner and add to a specific array list and could remove an accepted or declined request from the array list of requests. |
| 10. | Playground | It is responsible for saving the playground information and allows the system to rate a current playground. |
| 11. | UserInterface | It interacts with the user giving him the choose whether to login, register, or get register from, also is connected to the system class. |

## III. Sequence diagrams

**Diagram

Description automatically generated**

### Class - Sequence Usage Table

| **Sequence Diagram** | **Classes Used** | **All Methods Used** |
| --- | --- | --- |
| 1. Player Register | Class Structure  Class Player  Class UserInterface | Method register()  Method getRegisterForm()  Method DisplayRegisterForm()  Method fillRegisterForm()  Method checkEmail()  Method AddPlayer() |

1. Diagram, schematic

   Description automatically generated

### Class - Sequence Usage Table

| **Sequence Diagram** | **Classes Used** | **All Methods Used** |
| --- | --- | --- |
| 1. Request to book a playground | Class Player  Class Structure  Class Request  Class Booking  Class PlaygroundOwner | Method requestPlayground()  Method searchAndDisplayPlaygrounds()  Method BookPlayground()  Method MakeRequest()  Method addRequest(Request req)  Method displayMyRequests()  Method MakeBooking()  Method removeFromRequests()  Method addBooking(Booking book) |

### Diagram Description automatically generatedClass - Sequence Usage Table

| **Sequence Diagram** | **Classes Used** | **All Methods Used** |
| --- | --- | --- |
| Create profile and add playground | Class Structure  Class Playground owner  Class Admin  Class Playground | Method Register()  Method addplayground()  Method requestToAddPlayground()  Method enterPlaygroundInformation()  Method addWaiting(P)  Method acceptPlayground()  Method rejectPlayground() |

1. Diagram

   Description automatically generated

### Class - Sequence Usage Table

| **Sequence Diagram** | **Classes Used** | **All Methods Used** |
| --- | --- | --- |
| Suspend playground | Class Admin  Class Structure | Method addSuspended()  Method suspendPlayground()  Method Playgrounds.remove() |

## IV. State Diagram

Diagram

Description automatically generated

# Tools

- UML diagram tool: [www.lucidchart.com](http://www.lucidchart.com)