

Cairo University
Faculty of Computers and Information



CS251

Software Engineering I

GOFO

Software Design Specifications



CS251: Avengers

Project: GOFO

Software Design Specification

Contents

Cairo University Faculty of Computers and Information	1
Contents.....	2
Team	3
Document Purpose and Audience.....	3
System Models.....	4
I. Class Diagram(s).....	4
II. Class Descriptions	5
III. Sequence diagrams	6
Class - Sequence Usage Table	9
IV. User Interface Design.....	10
Tools	12
Ownership Report	12
Screenshots and Video	13



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Team

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Document Purpose and Audience

- This program helps players to find and book football fields without wasting much time and effort.
- This document describes the shape, structure and design of the program through models.
- There are two main audiences in the program first, the player who wants to book football fields second, is the playground owner who wants to provide playgrounds fields.



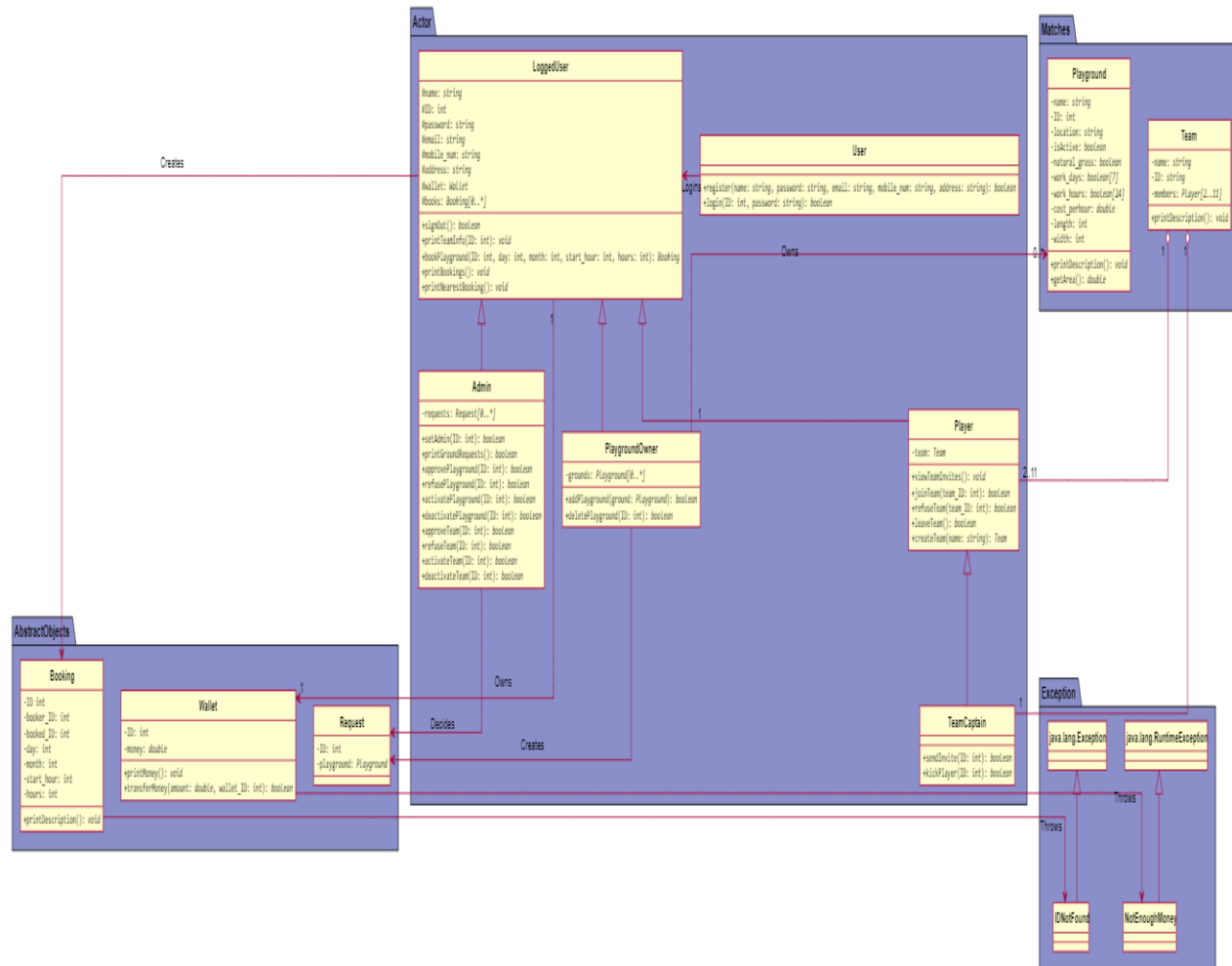
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System Models

I. Class Diagram(s)





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II. Class Descriptions

Class ID	Class Name	Description & Responsibility
1.	User	A class that represents a user that is neither registered nor logged in. A user that has just opened a program and only has two responsibilities: to login or register.
2.	LoggedUser	A class that represents a user that is registered and is logged in. Classes: Player, PlaygroundOwner and Admin inherit from this class. Responsibilities: Sign out, Book a playground, view his bookings and check his wallet.
3.	Player	A class that represents a player. Responsibilities: All LoggedUser responsibilities + create a team, view Teams he is invited to and accept or refuse invitations.(See TeamCaptain for more info)
4.	PlaygroundOwner	A class that represents a playground owner, who owns 1 or more playgrounds. Responsibilities: Add or Remove owned Playgrounds. An admin must accept or refuse such requests.
5.	Admin	A class that represents a user with special privileges. An admin is responsible for managing the program. He is responsible for Managing Playground and Team requests. And suspending Playgrounds with bad history.
6.	TeamCaptain	A class that inherits from a player. It represents a normal player but who has created his own team. A team must have one and only one TeamCaptain He is responsible for sending invites to other players and kick players from his team.
7.	Playground	A class that represents a playground. It has many important attributes to determine its name, its location, if it is active, if it has natural grass, its area, its work days, its work hours and its cost.
8.	Team	A class that is created when a player creates his own team. It has only one captain and up to 10 normal players. It also has a name.
9.	Booking	A class to represent a booking that is made by a player to a playground. It saves the ID of the booker, the ID of the booked playground, total cost and the date and duration of the booking.



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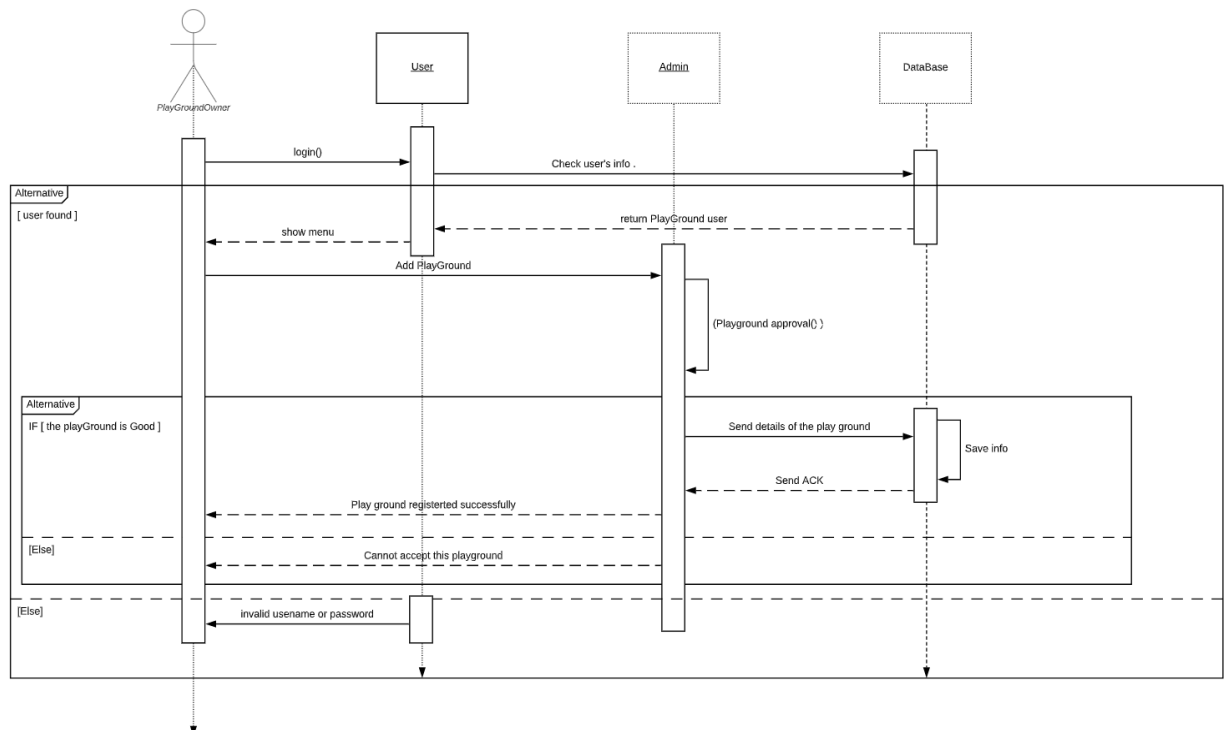
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Class ID	Class Name	Description & Responsibility
10.	Wallet	A class that represents a wallet that saves a LoggedUser's money. Depositing money to the wallet happens out of the system's boundary.
11.	Request	A class that represents a request made to the admins. It could be a Playground request or a Team creation request. It is deleted when responded by one of the admins.
12.	IDNotFound	An exception that is thrown whenever the user specifies an ID of a player, playground.. etc that doesn't exist.
13.	NotEnoughMoney	An exception that is thrown when trying to book a playground but the wallet doesn't have enough money.

III. Sequence diagrams

Add Playground:



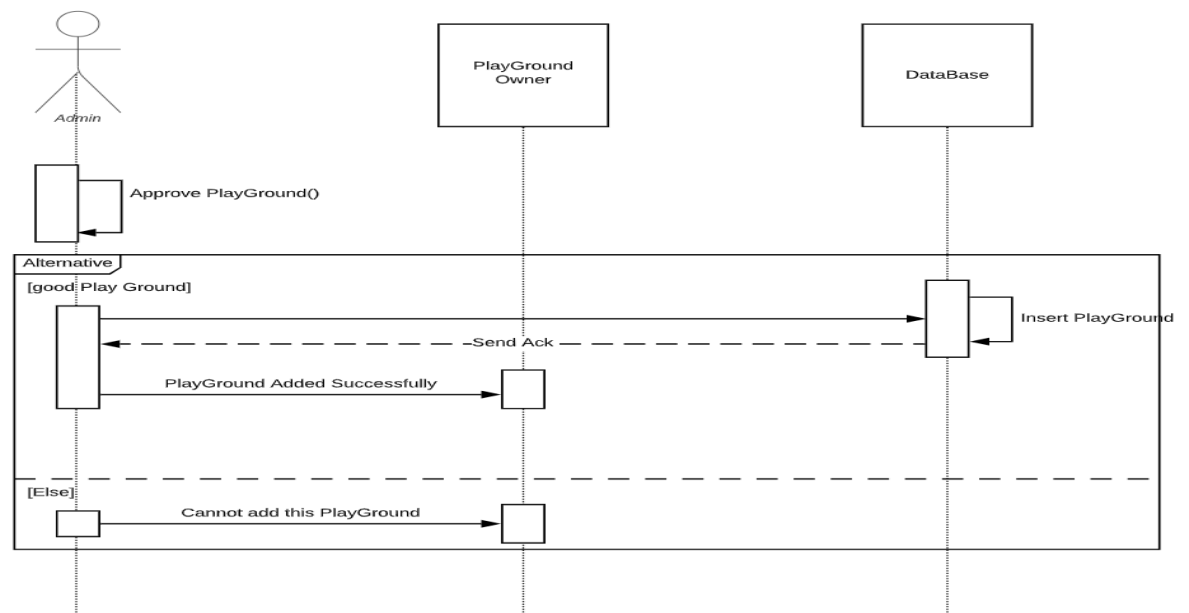


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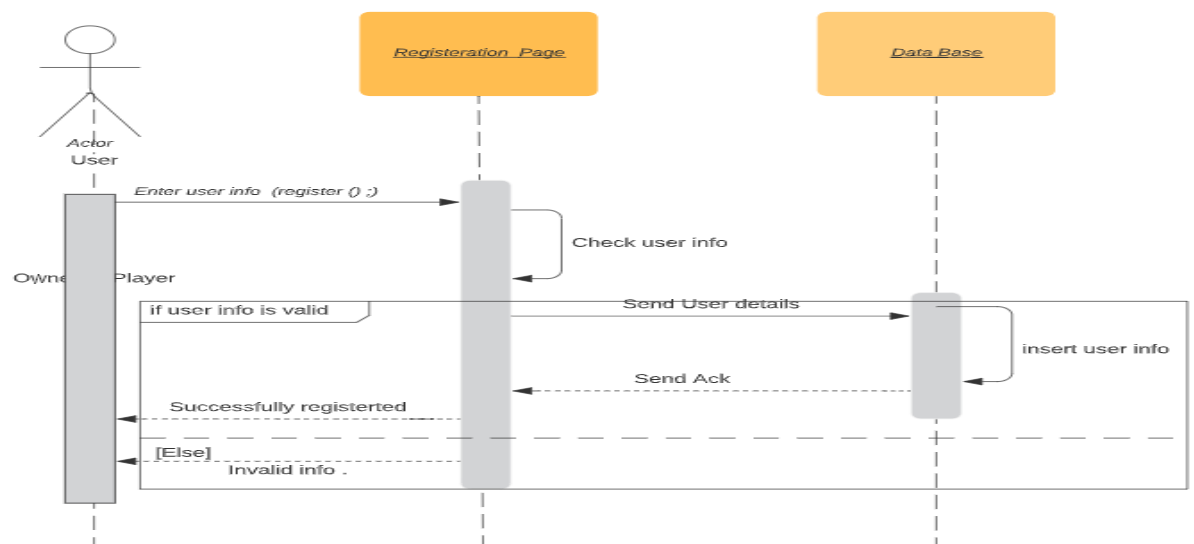
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Approve Playground:



Register user:



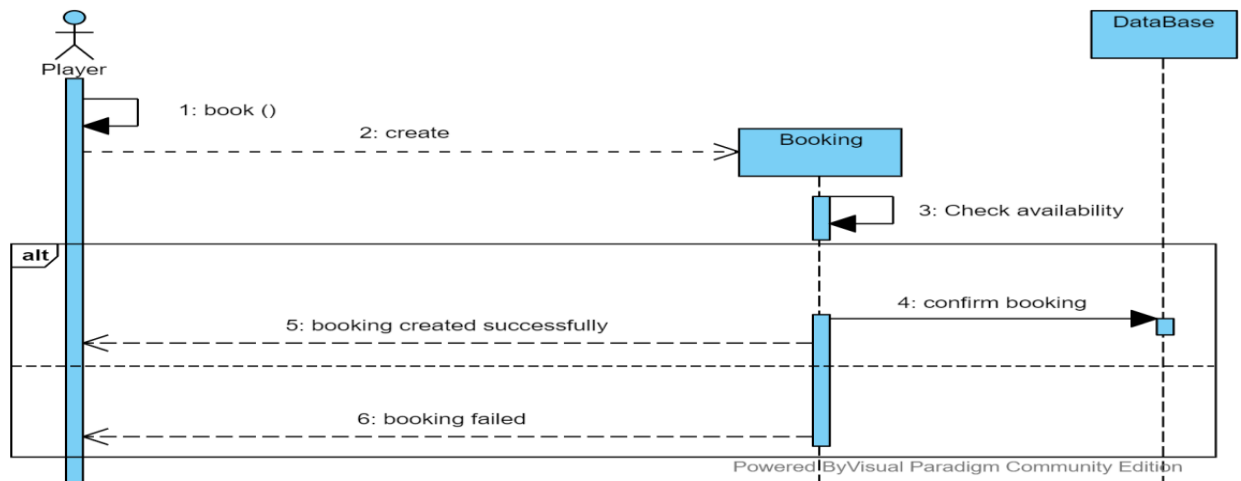


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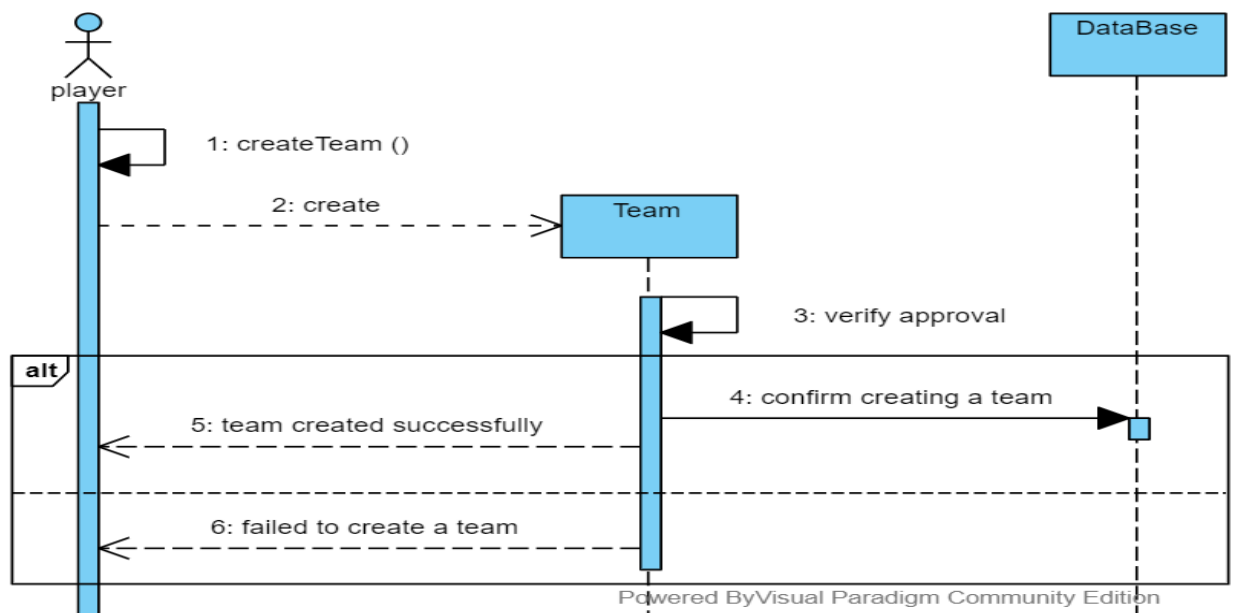
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Book a Playground:



Create team:



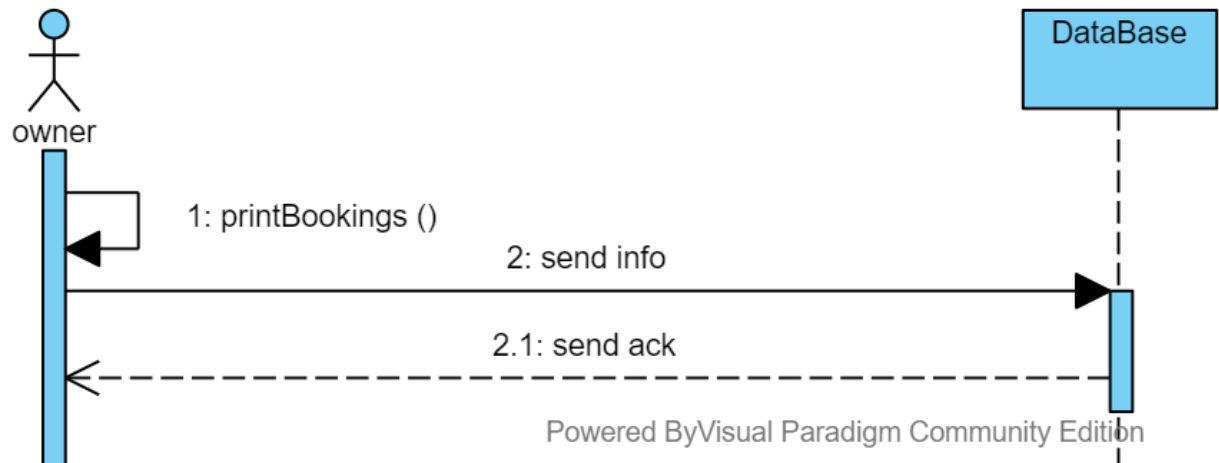


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View playing hours:



Class - Sequence Usage Table

Sequence Diagram	Classes Used	All Methods Used
1. Add Playground	Admin User	login()
2. Approve Playground	PlaygroundOwner	approvePlayground()
3. Book a Playground	Booking	book()
4. Create team	Team	createTeam()
5. Register user	User	Register()
6. View playing hours	PlaygroundOwner	printBookings()



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IV. User Interface Design





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Screen ID	Screen Name	Screen / Wireframe Description
#1	Login	Used to login if you have an account
#2	Register	Used to make an account for admin or player or playground owner
#3	Owner Menu	This menu appears when Play Ground owner sign it shows the functionalities of the Owner that he can do in the program.
#4	Adding Play Ground	A form that takes the playground details from the owner to add the playground in the application.
#5	Deleting Play Ground	A form that takes an ID of one of the play grounds of the owner to delete it from the application
#6	Player menu	This menu appears when a player sign it shows the functionalities of the player that he can do in the program.
#7	Booking Play Ground	This screen shows the player ground with their id's to allow the player to book a playground at a specific time.
#8	Create Team	A form that takes the id's of the other players to invite them to join to the team of the user.
#9	Join Team	Form that takes the id of the team that the user want to join to send a join request to the captain of the team
#10	Admin Menu	This menu appears when admin sign it shows the functionalities of the admin that he can do in the program.
#11	Show Grounds Requests	A form that shows the playground that need to get an approve from the admin to be added to the application
#12	Play Ground De Activation	A form that takes a playground id to deactivate it.



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Tools

- Visual-Paradigm
- Mocqus
- Lucidchart
- PlantUML

Ownership Report

Owners	Item
Mahmoud Ashraf	Three sequence diagrams (first three), User Interface design , Class Diagram (Admin, PlayGround).
Nader Fikry	Three sequence diagrams(last three), SDS document, Implementation of Abstract Objects package and a video that describes the components of the system.
Fady Emad	Class Diagram and Console Implementation



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Screenshots and Video

```
Welcome to GoFo.  
You can interact with the UI by entering the number matching your choice.  
You're currently unregistered. If you do not have an account then register.  
If you have an account then log in.  
1) Register  
2) Login  
3) Exit the Program  
Enter your choice: 1
```

```
Do you want to create an account as a:  
1) Player  
2) Playground Owner  
Enter your choice: 1
```

```
Enter your Name: ahmed  
Enter your Password: password  
Enter your Email: ahmed@gofomail.com  
Enter your Address: cairo, egypt  
Enter your Mobile Number: 6660666  
The account was successfully registered. Please log in.  
1) Register  
2) Login  
3) Exit the Program  
Enter your choice: 2
```



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```
Do you want to log in to a:
1) Player account
2) Playground Owner account
3) Admin account
Enter your choice: 1
Enter your Email: ahmed@gofomail.com
Enter your Password: password
Logged in successfully.
```

```
1) Create team
2) View team invites
3) Accept a team invitation
4) Book a playground
5) View all playgrounds
6) Search playgrounds by location
7) Check wallet
8) Sign out
Enter your choice: 1
Enter the name of the Team: myteam
Your team was successfully created
Please log in again to update your account.
1) Register
2) Login
3) Exit the Program
Enter your choice: 2
```



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```
Do you want to log in to a:
1) Player account
2) Playground Owner account
3) Admin account
Enter your choice: 1
Enter your Email: ahmed@gofomail.com
Enter your Password: password
Logged in successfully.
1) Invite player to team
2) Book a playground
3) View all playgrounds
4) Search playgrounds by location
5) Check wallet
6) Sign out
Enter your choice: 6
```

```
You've signed out.
1) Register
2) Login
3) Exit the Program
Enter your choice: 1
Do you want to create an account as a:
1) Player
2) Playground Owner
Enter your choice: 2
Enter your Name: mohamed
Enter your Password: password
Enter your Email: mohamed@gofomail.com
Enter your Address: cairo, egypt
Enter your Mobile Number: 9990999
The account was successfully registered. Please log in.
```



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```
1) Register
2) Login
3) Exit the Program
Enter your choice: 2
Do you want to log in to a:
1) Player account
2) Playground Owner account
3) Admin account
Enter your choice: 2
Enter your Email: mohamed@gofomail.com
Enter your Password: password
Logged in successfully.
1) Add playground
2) View owned playgrounds
3) Check wallet
4) Sign out
Enter your choice: 1
```

```
Enter the Playground name: the playground
Enter the Playground location: cairo, egypt
Enter the Playground booking cost per hour: 41.5
Does the playground have natural grass? (y/n): y
Enter the opening day number for the playground(between [0, 6] if day 0 is Saturday): 0
Enter the closing day number for the playground(between [0, 6] if day 0 is Saturday): 6
Enter the opening hour for the playground(between [0, 23]if 0 is 12 AM): 7
Enter the closing hour for the playground(between [0, 23] if 0 is 12 AM): 18
Enter the Playground length in metres: 100
Enter the Playground width in metres: 50
Your request for the playground has been successfully created.
Wait for an admin to accept your request for the playground to be activated.
```




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```
1) Add playground
2) View owned playgrounds
3) Check wallet
4) Sign out
Enter your choice: 4
You've signed out.
1) Register
2) Login
3) Exit the Program
Enter your choice: 2
Do you want to log in to a:
1) Player account
2) Playground Owner account
3) Admin account
Enter your choice: 3
```

```
Enter your Email: a
Enter your Password: a
Logged in successfully.
1) Print Requests
2) Approve a Playground
3) Sign out
Enter your choice: 1
```

```
Request ID: 1
Playground Details

Name: the playground
ID: 1
Location: cairo, egypt
Activated: false
Natural Grass: true
Opening Days(if first element day is Saturday): [true, true, true, true, true, true, false]
Opening hours(if first hour is 12 AM): [false, false, false, false, false, false, false, true, true, true, true, true, true, true, true, true, true]
Hourly Cost: 41.5
Dimensions(in metres): 100x50
```



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```
1) Print Requests
2) Approve a Playground
3) Sign out
Enter your choice: 2
Enter the ID of the request you want to accept: 1
Playground was approved.
```

```
1) Print Requests
2) Approve a Playground
3) Sign out
Enter your choice: 3
You've signed out.
1) Register
2) Login
3) Exit the Program
Enter your choice: 2
Do you want to log in to a:
1) Player account
2) Playground Owner account
3) Admin account
Enter your choice: 1
Enter your Email: ahmed@gofomail.com
Enter your Password: password
Logged in successfully.
```

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```
1) Invite player to team
2) Book a playground
3) View all playgrounds
4) Search playgrounds by location
5) Check wallet
6) Sign out
Enter your choice: 3
```

```
Name: the playground
ID: 1
Location: cairo, egypt
Activated: true
Natural Grass: true
Opening Days(if first element day is Saturday): [true, true, true, true, true, true, false]
Opening hours(if first hour is 12 AM): [false, false, false, false, false, false, false, true, true, true, true, true, true, true, true, tr
Hourly Cost: 41.5
Dimensions(in metres): 100x50
1) Invite player to team
2) Book a playground
3) View all playgrounds
4) Search playgrounds by location
5) Check wallet
6) Sign out
Enter your choice:
```

```
Enter the ID of the playground you want to book: 1
Enter the month you want to book in(1 - 12): 7
Enter the day you want to book in(1 - 31): 22
Enter the start hour you want to book in(0 - 23): 12
Enter the amount of hours you want to book(0 - 23): 2
The total cost of the booking is: 83.0
```

- Link for the video that describes the components of the system:

<https://www.powtoon.com/c/dtnZ89xeHdW/1/m>