

Cairo University

Faculty of Computers and Artificial Intelligence



CS251

Software Engineering I

Project Name

Software Design Specifications

Version X.X

Team Names and Emails

Month & Year



CS251: Phase 2 – <Team Name>

Project: <Project Name>

Software Design Specification

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Team

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Document Purpose and Audience

- This document is a written report on the design of the software product, defining its overall architecture and providing an overview of what needs to be built and how it should be done.
- This document aids in ensuring that the software's design specifications are understood by all parties involved. It outlines what the product is capable of and how it can be accomplished.
- The audience of this document are Developers, Client, Project managers & Stakeholders.



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II. Class Descriptions

Class ID	Class Name	Description & Responsibility
1. #1	PlaygroundOwner	<p>This class is representing the playground owner in our system. The playground owner is the one who registers his playgrounds in the system and allow players to book them for a specific time.</p> <ul style="list-style-type: none">• This class should store all the playground owner information like what and how many playgrounds he has , the bookings that the playground owner get from the players, E-wallet information and his user information(name, email, id, password, location, phone number)• This class is responsible to add new playgrounds in the playgrounds list• This class is responsible to get all the bookings the playground owner has• This class is responsible to accept or reject a certain booking the player made• This class is responsible to get all the bookings that have been made to all the playgrounds and their available time too.• This class is responsible to get the balance that the playground owner has• This class collaborates with the Booking class, Playground class, E_wallet class and the User class
2. #2	Playground	<p>This class is representing the playground in our system. this class will store the data of the playground like its name, location, type, size, photos, ... It will store the available time and the bookings it holds</p> <ul style="list-style-type: none">• This class is responsible to get its status• This class is responsible to get all its bookins• This class is responsible to get its available time• This class is responsible to update its available time when a new booking is added• This class is responsible to get all the workdays schedule for the next week• This class collaborates with the PlaygroundOwner class and Booking class



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Class ID	Class Name	Description & Responsibility
3. #3	Booking	<p>This class is representing the Booking a player make in our system. it stores important information like what player made the booking to which playground and the exact time it will be booked. Also it stores if the Player is looking for a team or not and if the team is completed or not.</p> <ul style="list-style-type: none"> • This class is responsible for booking the playground and the time the player wants to book. • This class is responsible for accepting or pending or denied reservation requests by the playground owner • This class is responsible for the player can join a team and reserving a place between them in the team if this team is incomplete • This class collaborate with the playground class
4.#4	E-wallet	<p>This class is responsible to transferring money from a player's E-wallet to a playground owner's E-wallet when the player books playground and the playground owner accepts to player's request.</p>
5.#5	Player	<p>This class is representing the player in this system, The player is person who books playground in specific time.</p> <ul style="list-style-type: none"> • This class will store all player information like (what time did he book, which playground he booked, user information like (name, email,...etc) and E-wallet information). • This class is responsible to displays to the player all the reservations booked by the player . • This class is responsible to display to the player all information about playground like (name, location, price per hour,.etc).
6.#6	User	<p>This class is responsible for determining the type of user such as the player or the playground owner or administrator and some information about this user like (name, ID, password, email.....etc.).</p>
7.#7	Administrator	<p>This class is for the administrator's information(name, phone, address...etc.) and he can view his profile.</p> <p>There are many functions where the administrator is responsible for every action happens in the system. So, this class gives him the ability to activate or suspend or delete playgrounds, and also to see/view all complaints' details(inheritance) and view all playgrounds information & all e-wallets & all bookings in order to avoid any fraudulent activities and double bookings.</p>
8.#8	Complaint	<p>This class is responsible for all complaints' details including(Playground name, player name and the complaint itself). Also, it gives the administrator the ability to view all complaints and to sort them by playground name in order to see the number of complaints made on this playground, and also to sort them by player name in order to see if some players make complaints intentionally.</p>



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Class ID	Class Name	Description & Responsibility
9.#9	Role	This class is responsible for user's role where each user must have a role either (Administrator) or (Playground owner) or (player).
10.#10	Size	This class is responsible for playground's length and width (dimensions) which the playground owner sets.
11.#11	PlaygroundStatus	This enumeration is responsible for the playground's status where the playground can be either (suspended) or (active) by the Administrator of the system.
12.#12	WorkDay	This class is responsible for the workdays (schedule of available days and hours) of the playground where it stores the dates and time intervals of the current playground.
13.#13	BookingStatus	This enumeration is responsible for the booking's status where each booking can be either (suspended) or (active) by the Administrator of the system.

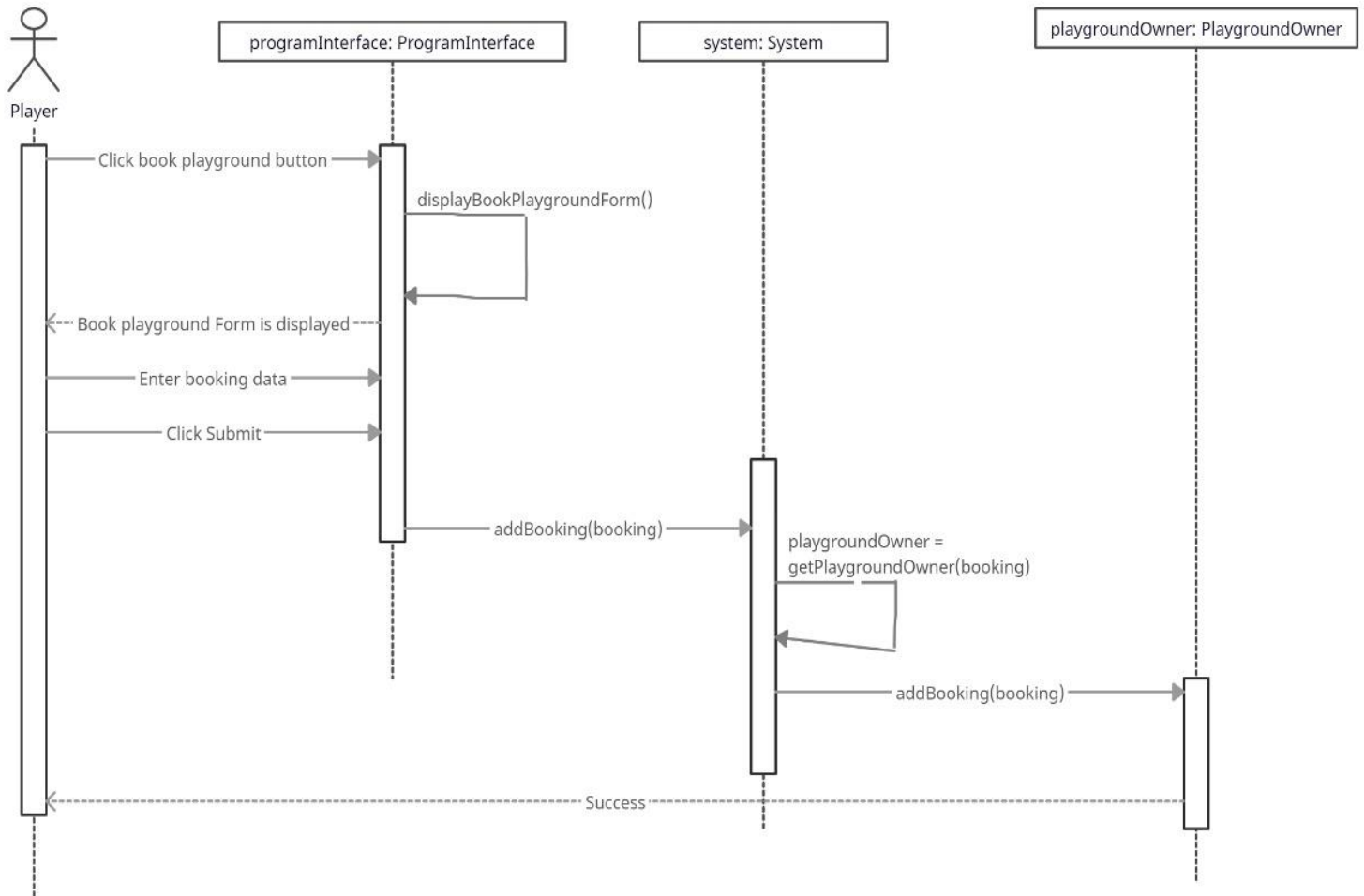


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III. Sequence diagrams

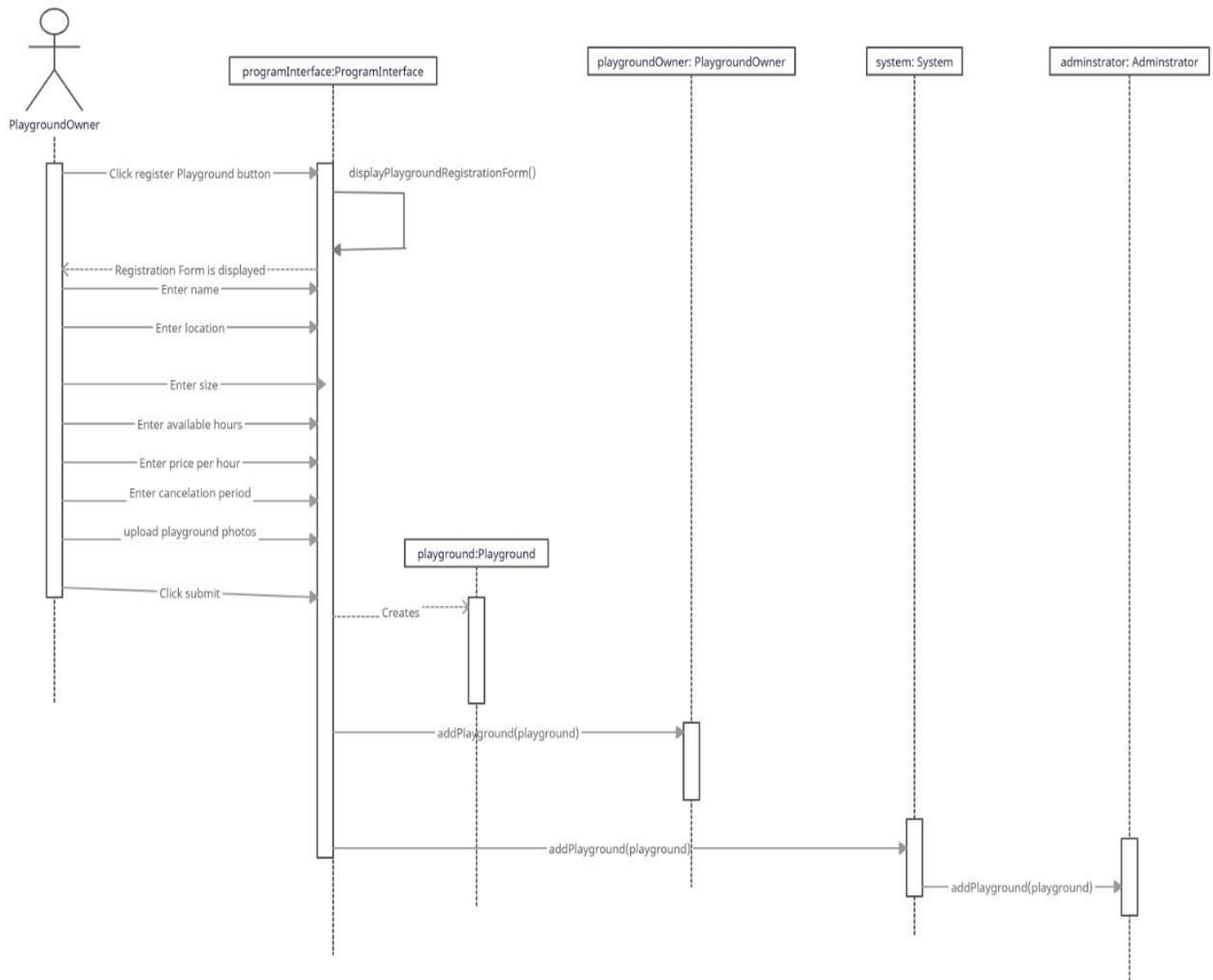




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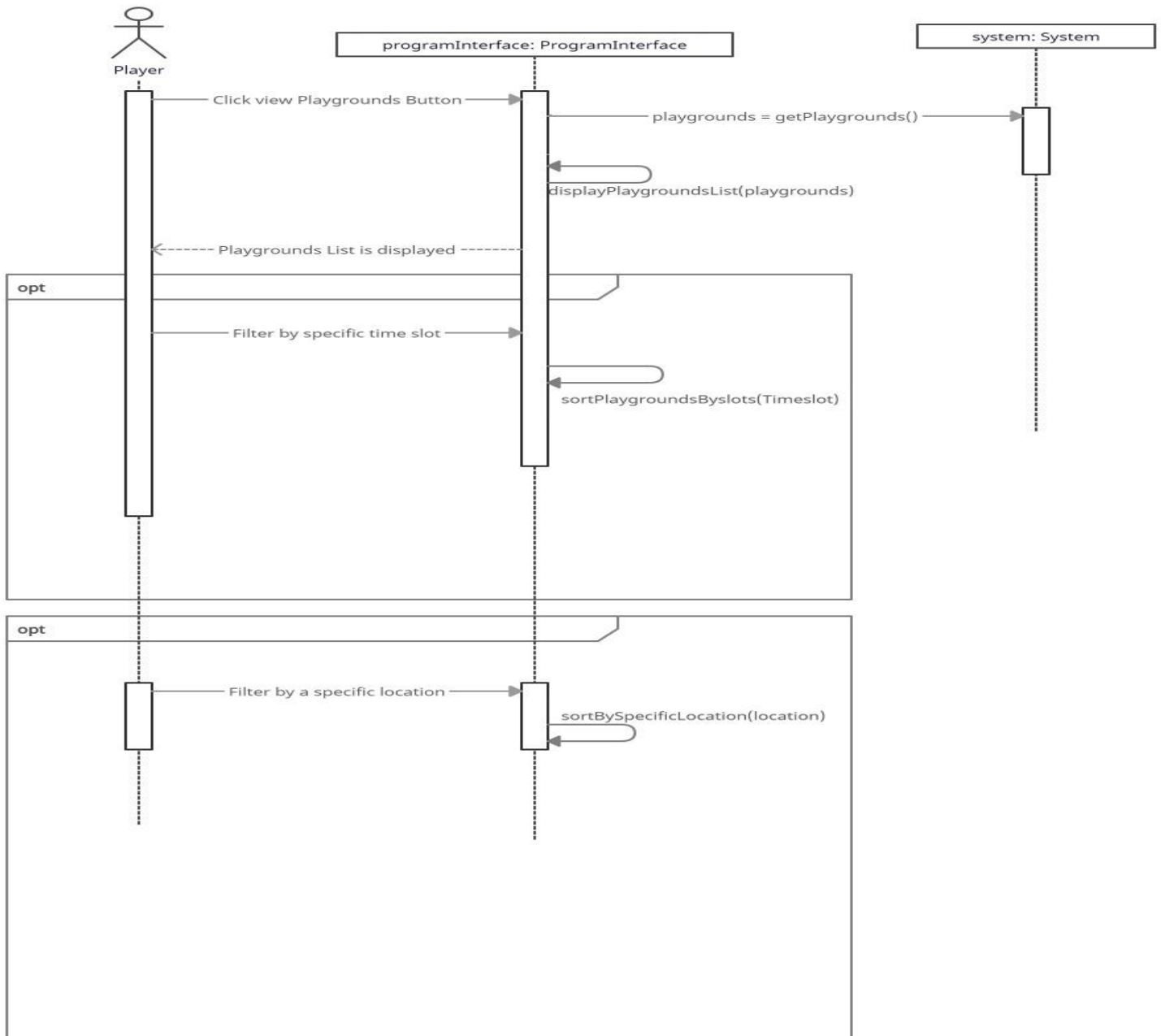




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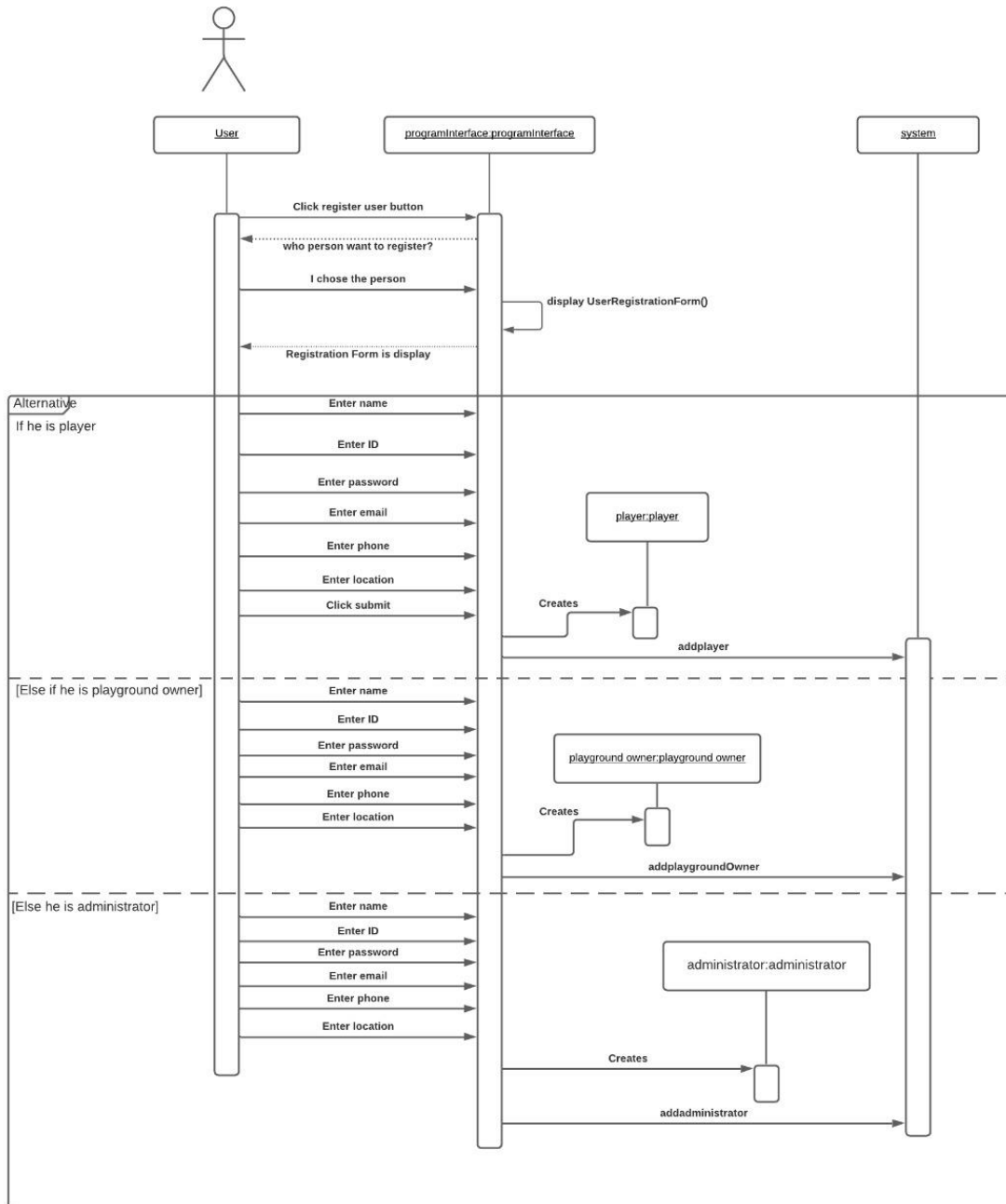


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Class - Sequence Usage Table





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Sequence Diagram	Classes Used	All Methods Used
1. Book a Playground	Class Player Class ProgramInterface Class System Class PlaygroundOwner	displayBookPlaygroundForm() addBooking(booking) getPlaygroundOwner(booking)
2. Register Playground	Class Playground Class ProgramInterface Class System Class PlaygroundOwner Class Administrator	displayPlaygroundRegistrationForm() addPlayground(playground)
3. Search for a Playground	Class Player Class ProgramInterface Class System	displayPlaygroundList(playground) sortPlaygroundsBySlots(TimeSlots) sortPlaygroundLocatoin(Location) getPlaygrounds()
4. Registering User	Class User Class ProgramInterface Class System Class PlaygroundOwner Class Administrator Class Player	displayUserRegistrationForm() addAdministrator() addPlaygroundOwner() addPlayer()

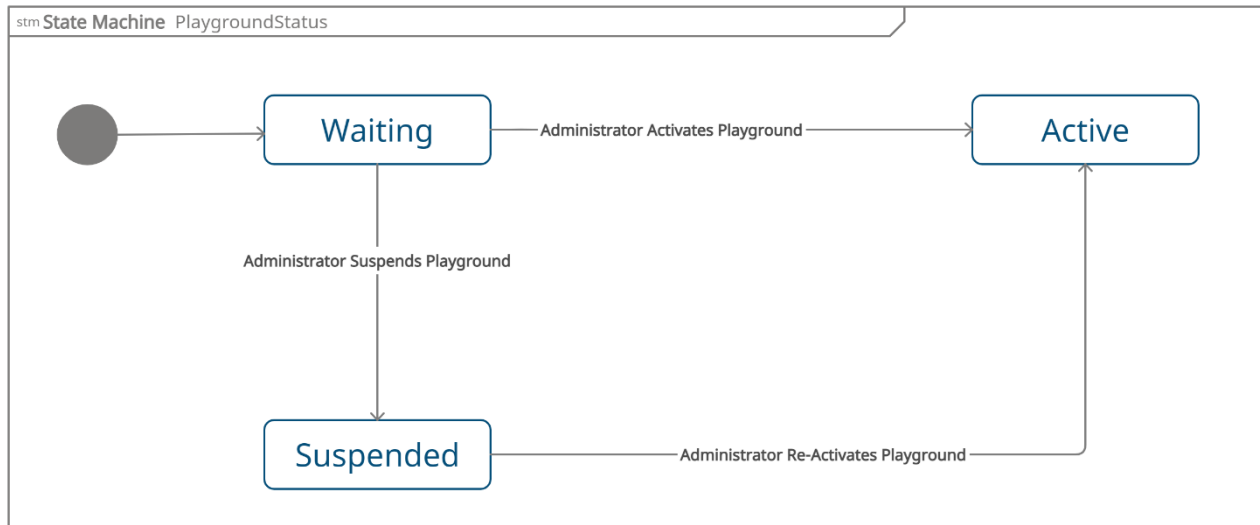


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IV. State Diagram



Tools

- Creately App (<https://app.creately.com/diagram/>)

Ownership Report

Item		Owners
Peter Essam Maguid Isaac Hanna	20190141	<ul style="list-style-type: none"> • All Administrator classes. • State Diagram. • Document Purpose and Audience. • Part of class descriptions.
Shehab Eldin Khaled Mohamed	20190304	<ul style="list-style-type: none"> • All playground owner classes. • Sequence diagram 2&3&4. • Part of class descriptions.
Abdallah Ragab Abdallah	20190818	<ul style="list-style-type: none"> • All player's classes. • Sequence diagram 1. • Part of class descriptions.