Cairo University  
Faculty of Computers and Artificial Intelligent

**CS251**

**Software Engineering, I**

Parking Garage application

Great mates

May & 2022

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# Team

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# Document Purpose and Audience

* **This document is a software system for Parking Garage application**
* **This document enables developers to understand system diagrams .**
* **Project manager(developer) of the garage is expected to read it.**

# System Models

## I. Class diagrams

| **Class ID** | **Class Name** | **Description & Responsibility** |
| --- | --- | --- |
| 1 | vehicle | * This is a controller class. * This class get vehicle information. |
| 2 | slots | * This is controller class * Set the garage information. |
| 3 | Park in | * This is an abstract class |
| 4 | Best fit | * Make the vehicle park in using best fit approach |
| 5 | Calculate | * This is an abstract class |
| 6 | Calculate duration | * This entity class calculate park in duration |
| 7 | Calculate fees | * This entity class calculate fees |
| 8 | Calculate income | * This entity class calculate total income |
| 9 | Departure time | * This is an abstract class |
| 10 | dispaly | * This is an abstract class |
| 11 | DisplaySlots | * This is boundary class that display available slots |
| 12 | DisplayFees | * This is boundary class that display fees |
| 13 | DisplayIncome | * This is boundary class that display income |
| 14 | DisplayVehicleNumber | * This is boundary class that display number of vehicles in garage |
| 15 | FirstCome | * Make the vehicle park in using first come approach. |
| 16 | LeavingGarage | * This is entity class that get information of leaving vehicle |
| 17 | ParkinTime | * This is entity class that capture arrival time |
| 18 | ParkOut | * This is entity class that capture leaving time |

**Diagram, engineering drawing

Description automatically generated**

## II. Sequence diagrams

### Class - Sequence Usage Table

| **Class Name** | **Sequence Diagrams** | **Overall used methods** |
| --- | --- | --- |
| vehicle | 1 | getVehcileinfo() |
| Park out | 2,4 | Parkout() |
| calculate | 2,4 | Calculate()  Parkout() |
| calculateDuration | 2,4,5 | CalculateDuartion() |
| Dispaly | 1,2,4 | displayVehicleNum()  displayFees() |
| calculateFees | 2,4 | calculateFees() |
| DisplaIncome | 5 | dispalyVehcileNum() |
| Slots | 5 | getNumOfVechiles() |
| CalculateIncome | 5 | displayIncome() |

**Park in**

ID: S1

Diagram

Description automatically generated

**Parking fees**

ID: S2

Diagram

Description automatically generated

**Park out**

ID: S4

Diagram

Description automatically generated

**Total income**

ID: S5

Diagram

Description automatically generated

# 

# Ownership Report

|  |  |
| --- | --- |
| **Item** | **Owners** |
| Class diagram | *Aser - mohamed* |
| Sequence diagram | *Aya- shrouk – Aser* |

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