Cairo University  
Faculty of Computers and Artificial Intelligent

**CS251**

**Software Engineering I**

Project Name

Software Design

Team Names

Month & Year

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# Team

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# Document Purpose and Audience

The document is about class diagram and sequence diagram it

The Sequence diagram describe the interactions between the class in the system and how they work with each other as a system and it display the functions and the method in each diagram and how they will be called from the another class

And how the sequence of events will be dynamically happen.

The class diagram will describe the classes and the attribute for them and the methods or operations inside any class and the relations between them.

Those document is for the developer, software engineer and the software team to can implement the code and know how to make the design and how the system will interact with each other and the code .

# System Models

## I. Class diagrams

Diagram

Description automatically generated

| **Class ID** | **Class Name** | **Description & Responsibility** |
| --- | --- | --- |
| Class1 | Screen | the boundary class that the user interact with and it allow the user to show slots ,tickets ,total vehicles , total income |

| **Class ID** | **Class Name** | **Description & Responsibility** |
| --- | --- | --- |
| Class2 | TotalNumberOfVehicles | the boundary class that the user interact with and it allow the user to show slots ,tickets ,total vehicles , total income |

| **Class ID** | **Class Name** | **Description & Responsibility** |
| --- | --- | --- |
| Class3 | ParkingSystem | it is include parkin and parkout and total income ,all slots for display ,number of vehicle |

| **Class ID** | **Class Name** | **Description & Responsibility** |
| --- | --- | --- |
| Class4 | Slot | it is include set slot and get slot , remove car |

| **Class ID** | **Class Name** | **Description & Responsibility** |
| --- | --- | --- |
| Class5 | Ticket | in ticket class the start time and end time is determined and total hours and payment amount is calcuated |

| **Class ID** | **Class Name** | **Description & Responsibility** |
| --- | --- | --- |
| Class6 | Parking | it is contain set slot , get slot ,remove car |

| **Class ID** | **Class Name** | **Description & Responsibility** |
| --- | --- | --- |
| Class7 | Vehicle | it is include the vehicle information such as model Name, model Year, specialId, width, depth |

| **Class ID** | **Class Name** | **Description & Responsibility** |
| --- | --- | --- |
| Class8 | TotalIncome | it is singleton class the total income is calculated in it |

| **Class ID** | **Class Name** | **Description & Responsibility** |
| --- | --- | --- |
| Class9 | SelectConfiguration | it is an interface |

| **Class ID** | **Class Name** | **Description & Responsibility** |
| --- | --- | --- |
| Class10 | Best\_fit | it inhetr interface SelectConfiguration and implement selectSlot function |

| **Class ID** | **Class Name** | **Description & Responsibility** |
| --- | --- | --- |
| Class11 | First\_come | it inhetr interface SelectConfiguration and implement selectSlot function |

### Important Algorithm

screen class there where too complex because it have several functions and it interact with the user and it invoke many classes in it

## II. Sequence diagrams

Id : 1

Diagram

Description automatically generated

Id : 2

A picture containing chart

Description automatically generated

Id : 3

Diagram

Description automatically generated

Id : 4

Chart, box and whisker chart

Description automatically generated

### Class - Sequence Usage Table

|  |  |  |
| --- | --- | --- |
| Class Name | Sequence Diagram | Overall used methods |
| Screen | Seq(1,2,3,4) | view ticket () displayTotalIncome ()  displayTotalVechile ()  viewSlots() |
| ParkingSystem | Seq(1,2,3,4) | Parkin  parkOut |
| Vechile | Seq(2) | vechlie(name,model,year,width,depth)  setId |
| TotalnumberOfVechile | Seq(3) | getnumberVechile |
| Totalincome | Seq(3,4) | getincome()  addcost\_totalincome() |
| Ticket | Seq(1,4) | getTicket ()  totalHour ()  setpayAmount()  getstartTime() getEndTime () get paymentAmount ()setStartTime() |
| Slots | Seq(1) | setVechile() |

|  |  |
| --- | --- |
| Best\_fit seq(1) | SelectSlots() |
| First\_come seq(1) | SelectSlot() |
| Parking seq(4) | removeCar() |
|  |  |

# Ownership Report

|  |  |
| --- | --- |
| **Item** | **Owners** |
| Document Purpose and Audience Class diagrams  Class diagram tables Important Algorithm Sequence diagrams Class - Sequence Usage Table Source code | *Asala ehab Mohamed*  *20201020*  *Esraa osama Mohamed*  *20201014*  *Habiba ayman ehtahry*  *20200140*  *Dina Othman emam*  *20200173* |
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