**Part 2 Requirements: - Class Diagram**

1. Open the Assignment (Part 2) student file. In the **Logical View**, create a class diagram under the appropriate package and rename the file as ***yourname\_Part2a\_(Class Diagram).uml****.* The diagram should include:

* The identified classes which as part of the object-oriented design methodology.
* Association between the classes must have name and multiplicities
* Association should consider be aggregation, composition or generalization whereas appropriate
* For each class identified, add attributes and appropriate data types
* Include visibility of the attributes (i.e. state data)
* Include navigability of the associations (if any)

A diagram of a computer

Description automatically generated with medium confidence

**b)**

1. Copy the StarUML model that you developed in Part a and name it ***yourname\_Part2b\_(Class Diagram refined).uml***. You are required to refine the class diagram to ensure the extra requirements are implemented, if it is not included in the design in Part 2a.

* All customers will have to provide the email address information.
* The registered monthly customer will have to specify their monthly billing cycle date.
* For all registered customers (either registered monthly customers or registered casual customers) will need to indicate their minimum balance to be notified if their current balance falls below that amount. Implement this design preference in your model.
* There is no need to instantiate the Registered Customer class. i.e. the Registered Customer class is abstract.
* The senior analyst would prefer the system to have implemented when the "RegisteredCar" object is destroyed, the corresponding registered customer will also be destroyed from the current memory. Implement this design preference in your model.
* Choose **3 classes** that they are **associated with each other**. Suggest at least **3 operations** **for each of these classes (e.g CarInCarPark, RegisteredCar** and **ParkingSpace)**. You **must** include:
* their operation signatures (if any) and return types.

Make sure that you do not pass more parameters than required.

* appropriate visibility of the operations (i.e. class services)

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1. In ***yourname\_Part2b\_(Class Diagram refined).uml*** model file, in the CarInCarPark class, design an operation so that it validates the current object has the charge method must be within the values of “RM”, “RC”, “C” or “W”. If it is not one of these values, return true otherwise false. Assign visibility so that these operations can only be called internally within the CarInCarPark class.

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**\*\* Note:** use separate StarUML model files for **Part 2a** & **Part 2b**. Do not use one single StarUML model to cover both parts. For submission, compress both **Part 2a** and **Part 2b** models into a zip file and upload to LEARN for marking.