P10 – Software Architecture, Requirements and Design

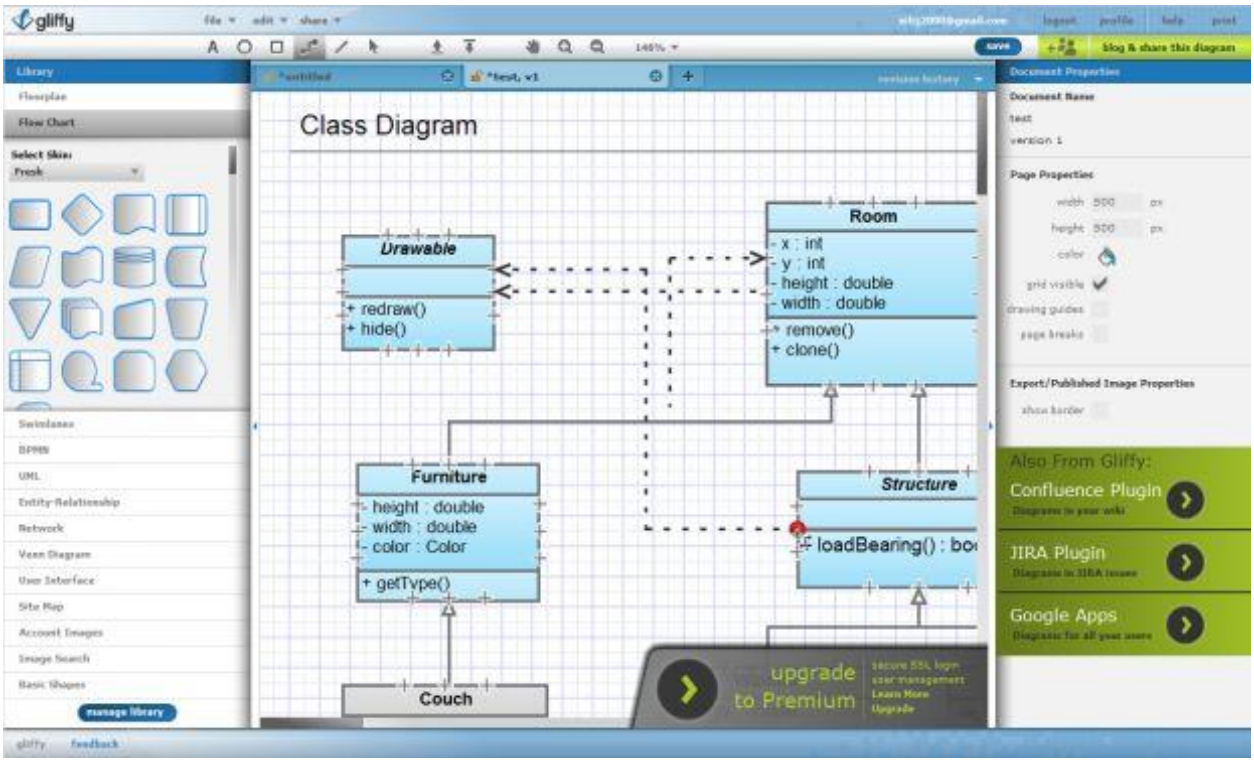
TOOL USED TO CREATE ARCHITECTURAL DESIGNS

Standard UML notation will be used to create object level architecture, layered architecture and framework based architecture. Object oriented design principles can be used UML (Unified Markup Language) .Since it's widely used and accepted this will be used in the project.

For the representation of layered architecture, diagrams will be used to differentiate between the separate layers.

For creating diagrams and representations Gliffy is used. Since it's open source and provides access to Google drive, this tool is preferred over others. Items required can be dragged and dropped from the menu. Therefore it saves a lot of effort and time.

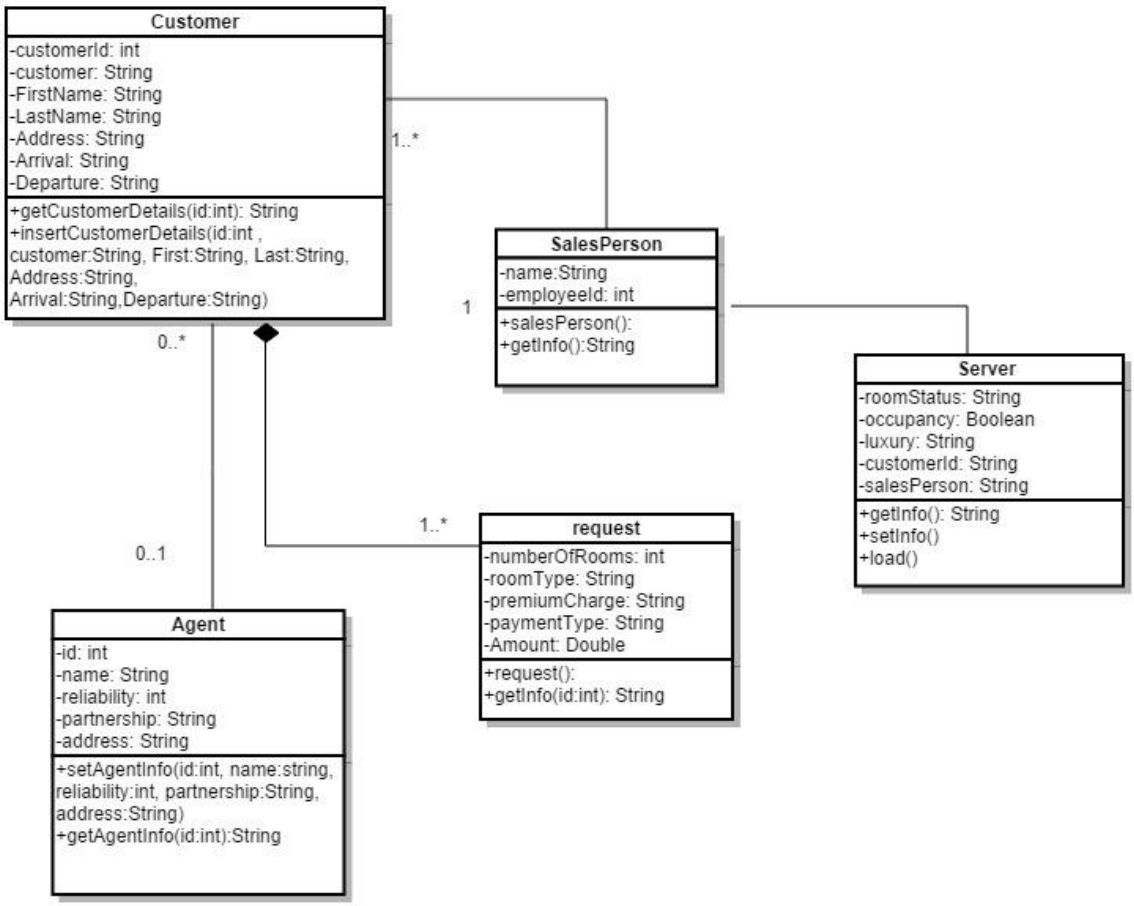
Gliffy interface:



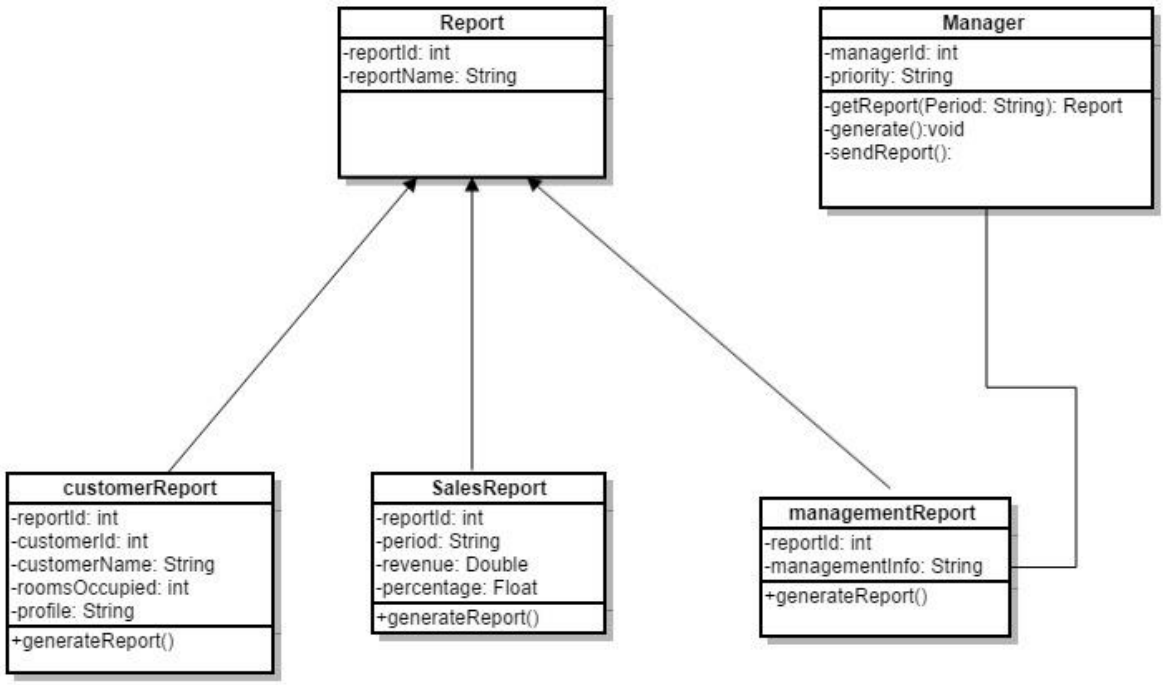
Object Level Architecture

In the object level architecture, UML notation is used to provide the software design for the whole project. This is also known as the micro level design. The attributes of the objects and the methods should are shown so that interactions can be understood clearly.

In an object oriented design, messages which are sent between the objects are focused upon. This allows to design databases and other required options accordingly.



The above diagram depicts how the application interface is connected with the other objects. The main application interface will be as above. (More details would be provided in the layered architecture)



The above diagram depicts the manager interface and how reports are generated through requests. Customer reports and Sales reports would be periodical.

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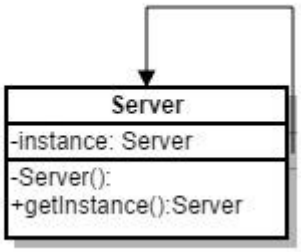
Design pattern Based Architecture

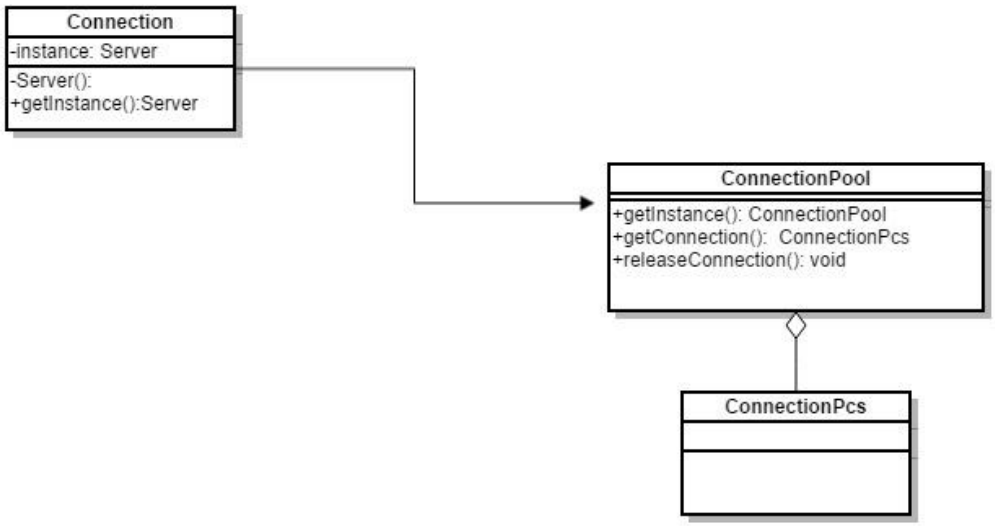
This is where problem and solution pairs are implemented. Commonly accepted design patterns are used to improve the overall design of the software.

In this section, design patterns which were identified in P-9 will be used. Detailed descriptions are included in P-9. Therefore a summary is provided.

Singleton

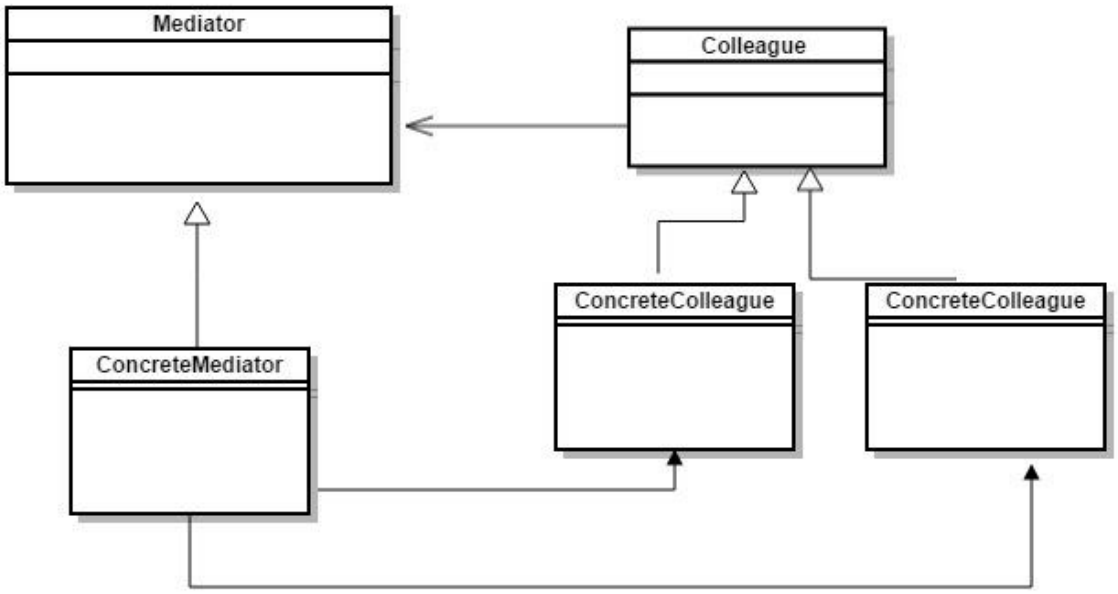


Object Pool



Mediator

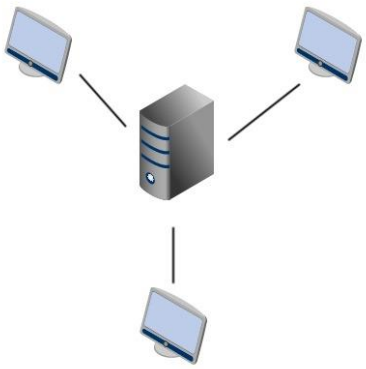
A mediator will be used when joining the new database with the existing database, since there will be compatibility issues.



Macro Level Architecture

Macro level architecture provides the overall framework upon which the whole software system operates. This depicts how the different layers communicate with each other.

The layered architecture can be depicted as above. A separate LAN server will be used to host the database, so that clients can access the database remotely.



Especially the focus is mainly on how the application would run in the business environment using a central server.

Sales assistants and the senior manager of a branch will have access to the database and based on the requirements the manager can generate reports based on the information available.

Software will have to be installed on each of the client computers, when implementing the software project.

Application Level Architecture

In the application level architecture, the user interface design and how the business logic is incorporated will be considered.

Business logic is kept separately because processing of data is done separately and the results are shown to the end user.

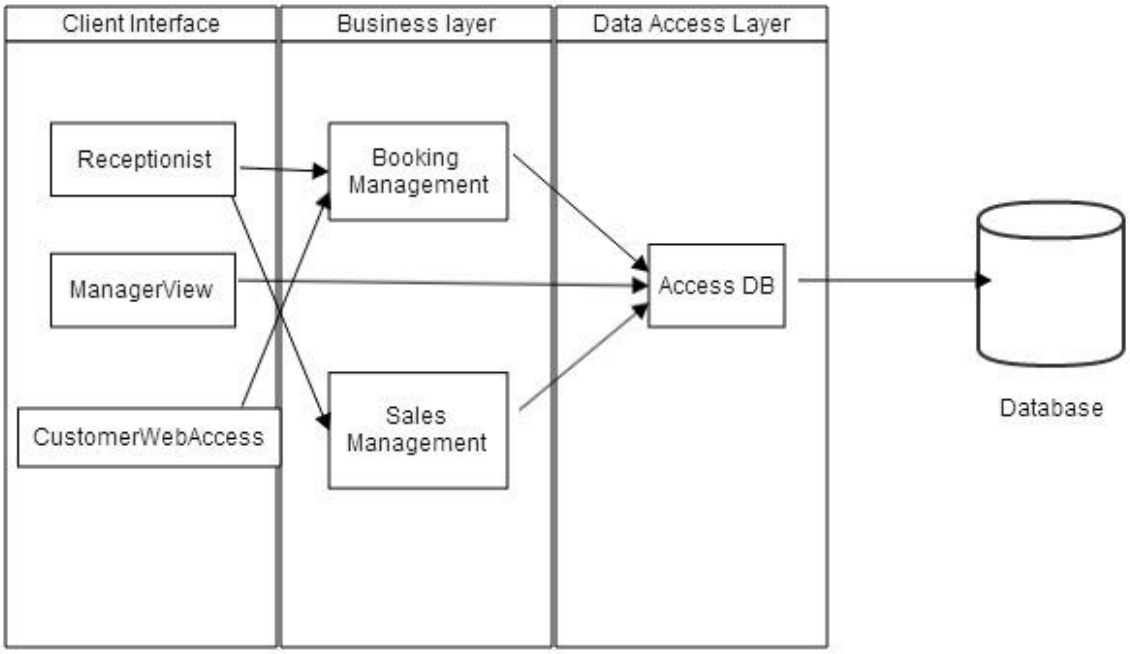


Figure 1 User interface

Micro level architecture was provided in the object architecture and pattern based architecture.

TRUE CODE TECHNOLOGIES

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