B.M.S. COLLEGE OF ENGINEERING BENGALURU

Autonomous Institute, Affiliated to VTU

Lab Record

Object Oriented Analysis and Design

Submitted in partial fulfilment for the 6th Semester Laboratory

Bachelor of Technology

in

Computer Science and Engineering

Submitted by:

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1BM17CS096

Department of Computer Science and Engineering B.M.S. College of Engineering Bull Temple Road, Basavanagudi, Bangalore 560 019 Jan-May 2020

B.M.S. COLLEGE OF ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the Object-Oriented Analysis and Design(16CS6DCOOM) laboratory has been carried out by Shivangi Balodia(1BM17CS096) during the 6th Semester Jan-May-2020.

Signature

LATHA N.R.

Department of Computer Science and Engineering
B.M.S. College of Engineering, Bangalore

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1. COLLEGE INFORMATION SYSTEM

Problem statement

To build an efficient system to manage information about students, college departments, faculties and all other activities taking place in college. It maintains the courses taught by teachers and students enrolled in them. Admission records of student and Examination details and other important information related to college management is maintained.

Software Requirement Specification

Purpose

Its purpose is to automate and centralize the database for College Information System. We are attempting to improve our existing system that runs on pen and paper.

Functional Requirements

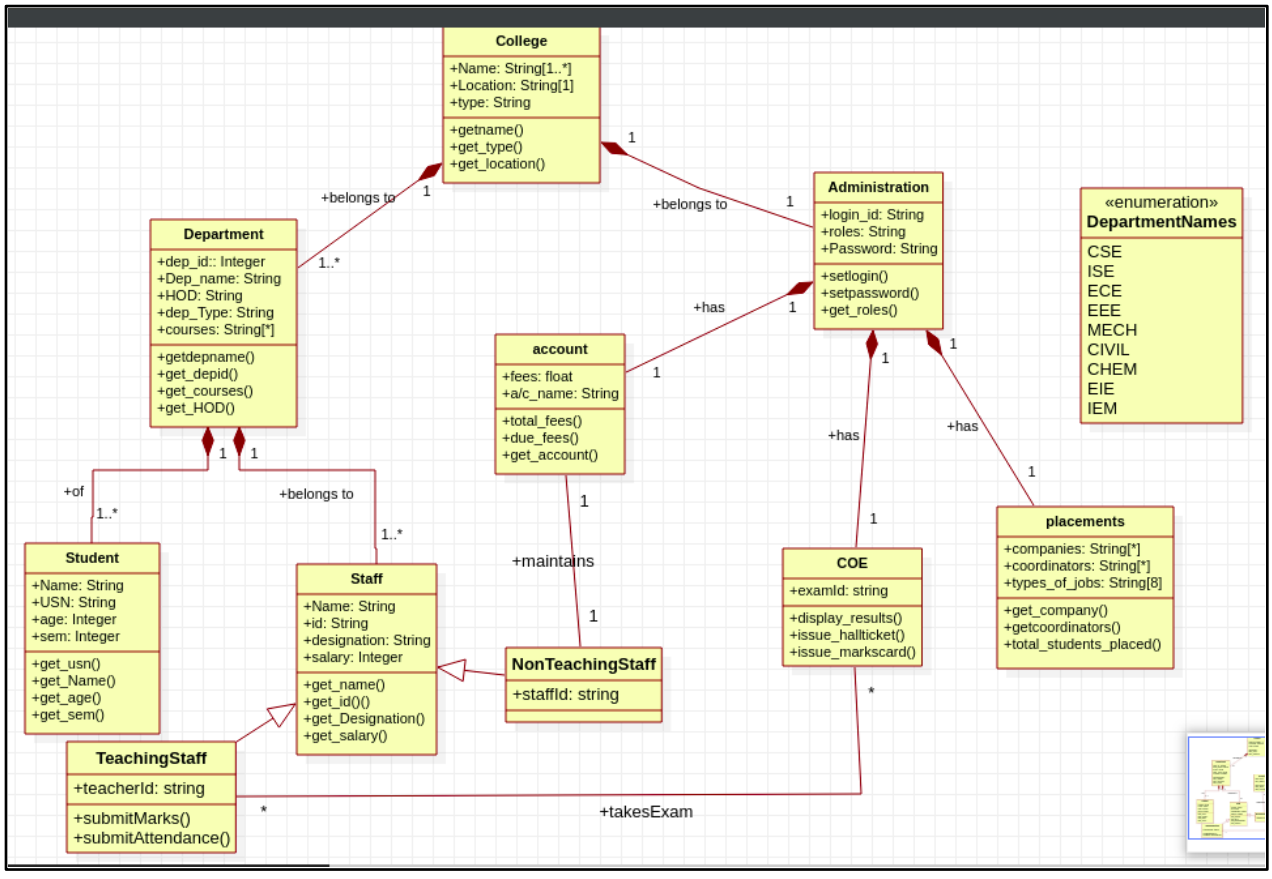
- College information system has admin who manages the staff , student and department.
- In this system, user authentication will be done by login by user name and password and classified by user type.
- Admin can view and modify the student's records like student's profile, attendance, fee, results, and details of teachers and other employees in college, their personal information and their attendance for their salaries.
- Staff in college teach more than one course to many students and the staff who are teachers conduct examinations for students of the college
- The students of the college register themselves in the department and for the courses they are interested in and join the college by taking admission and following all the admission procedures.
- There are different types of examination conducted by the college for the students. Internals and semester end examination are two of them.
- Every course has a name and its unique name. Every course has different subjects and every subject has its own unique name.

- Department will provide the details about departments within a college with their name and every department have its Department name.

Non-functional Requirements

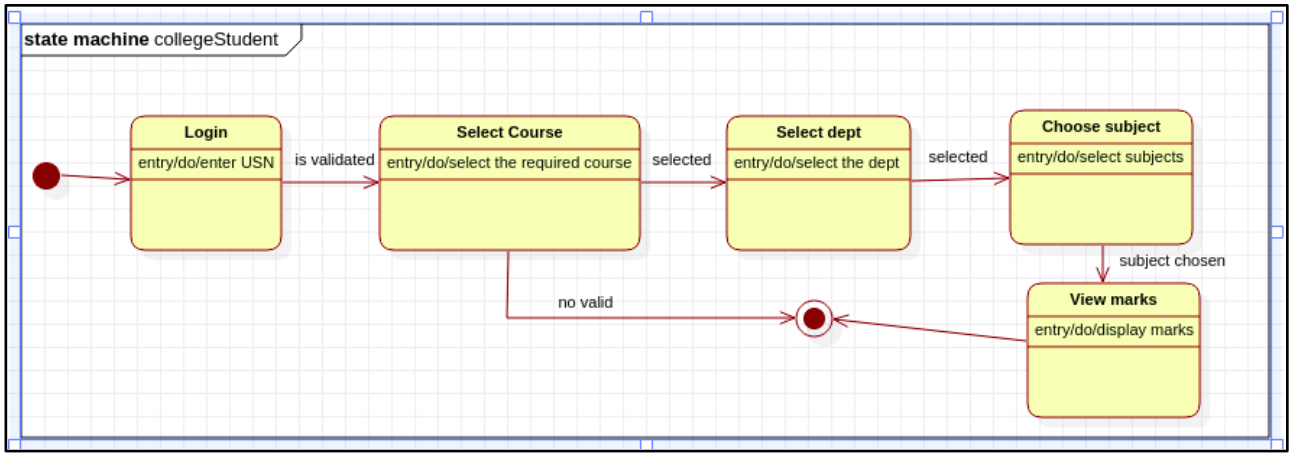
- System should give expected performance results.
- The response time should be small.
- The system should be easy to handle.

Class Diagram

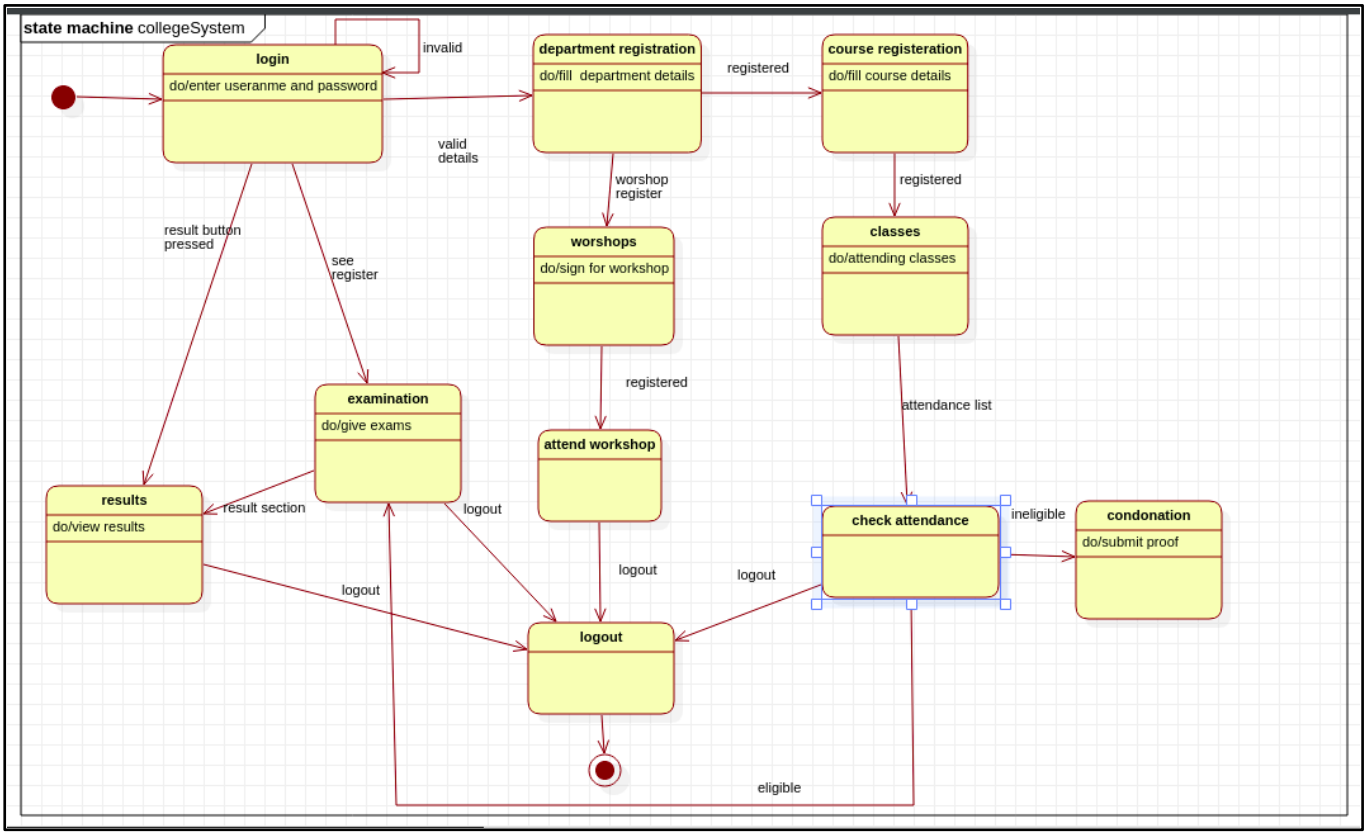


State Diagrams

Simple State Diagram



Advanced State Diagram



2. HOSTEL MANAGEMENT SYSTEM

Problem statement

This system will provide ease, comfort of use to the staff of hostel by performing all work on computer. This project also keeps details of the hostelers and applied students. It is headed by Warden. He will be the administrator. This document is intended to minimize human works and make hostel allocation an easier job for students and hostel authorities by providing online application for hostel.

Software Requirement Specification

Purpose

Its purpose is to automate and centralize the Hostel Management System. We are attempting to improve our existing system that is carried out manually.

Functional Requirements

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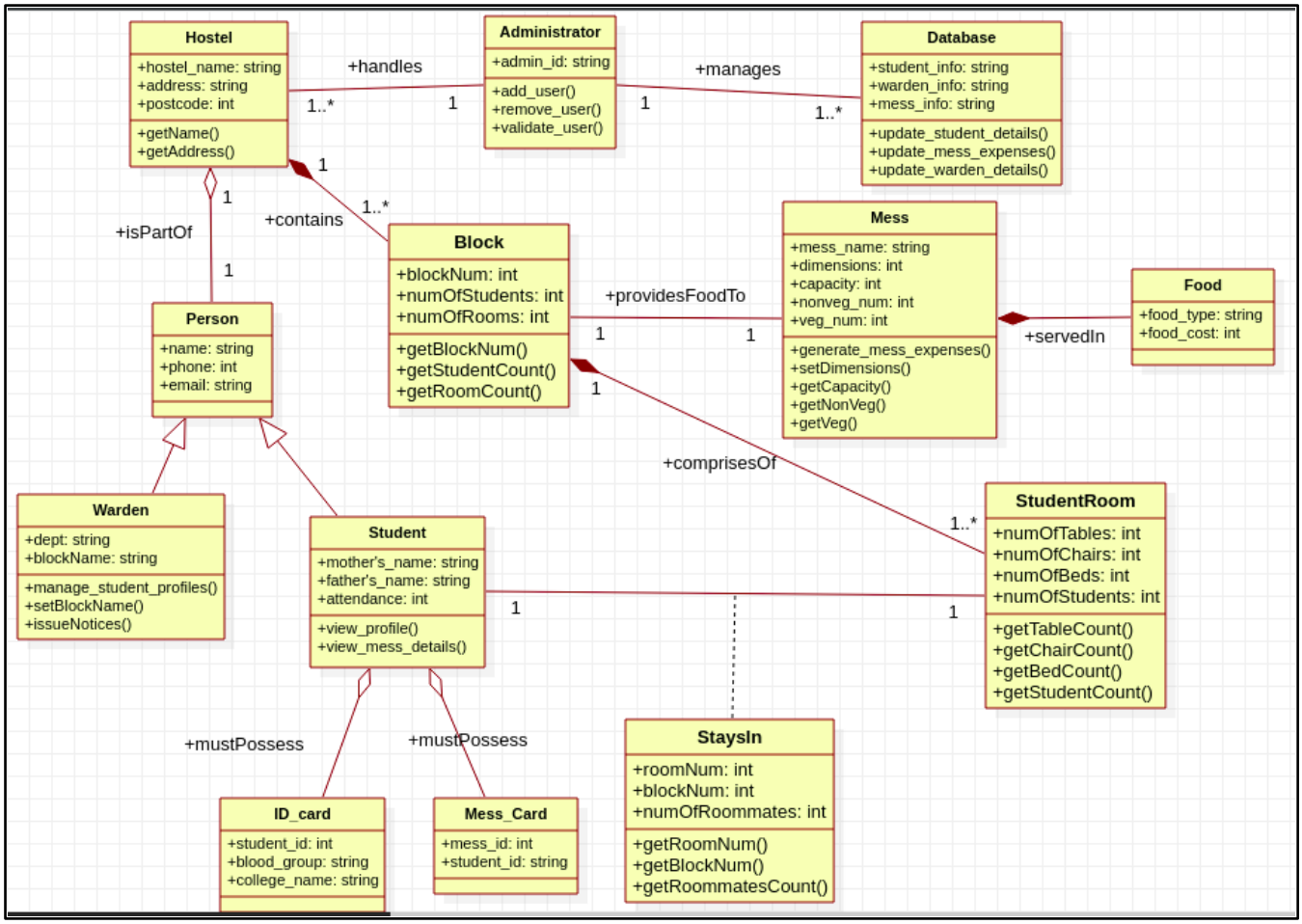
- Admin can login using credentials provided to him. The admin will also keep track of the payment made by the students.
- As the student's course is over they will vacate their rooms. So it is required for the administrator to remove their records from the database tables.
- The allot-es makes payment according to the bill generated which have the attributes bill number, type and date.
- The details of the students staying in the hostels like name, place, address, contact details is maintained in the database.
- The hostel is categorized into two types i.e boys and girls hostel. Each hostel type has different costs, warden and name.
- A hostel is made up of mess and rooms. A mess account will also generate. This account having the mess status of the whole month. On the base of this account monthly charges of mess of a student will be defined.

Non-functional Requirements

- System should give expected performance results.
- The response time should be small.

Class Diagram



State Diagrams

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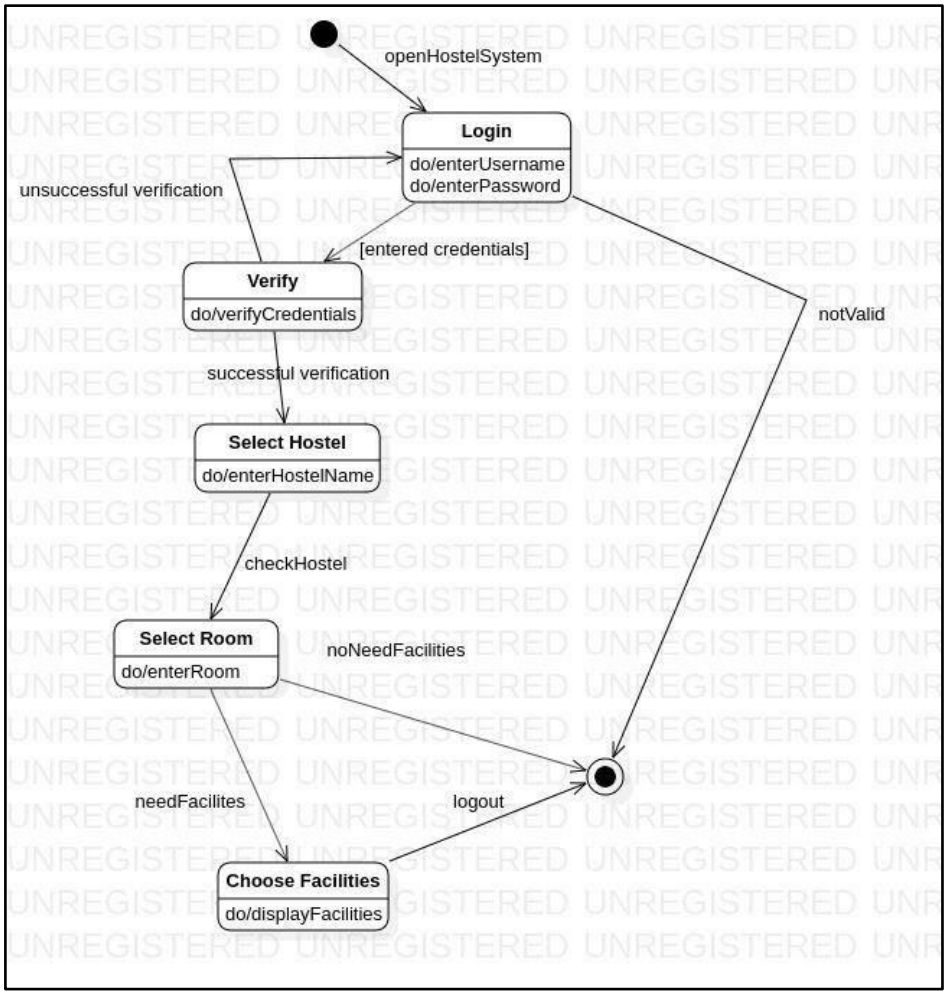
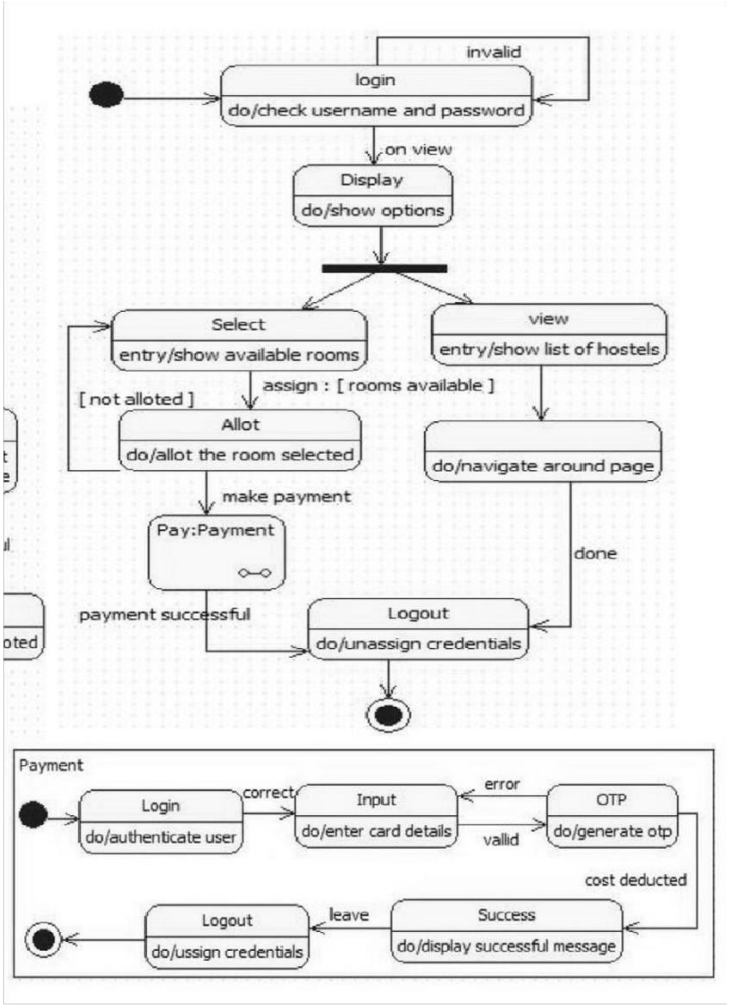


Advance State Diagram



3. STOCK MAINTENANCE SYSTEM

Problem statement

The stock maintenance system must take care of sales information of the company and analyse the potential of trade. The stock maintenance system is basically for the customers who access the information about the stock and retrieves the information. The stock maintenance system is to replace the existing maintenance system which is in efficient. The new stock maintenance system will allow the employee to record information of the products available in the store .The vendor deals with the information about the details of the suppliers giving product to the organization.

Software Requirement Specification

Purpose

A maintenance system is required to meet the demand of customers as the number of customers is increasing every year. This system maintains a centralized database to manage stock.

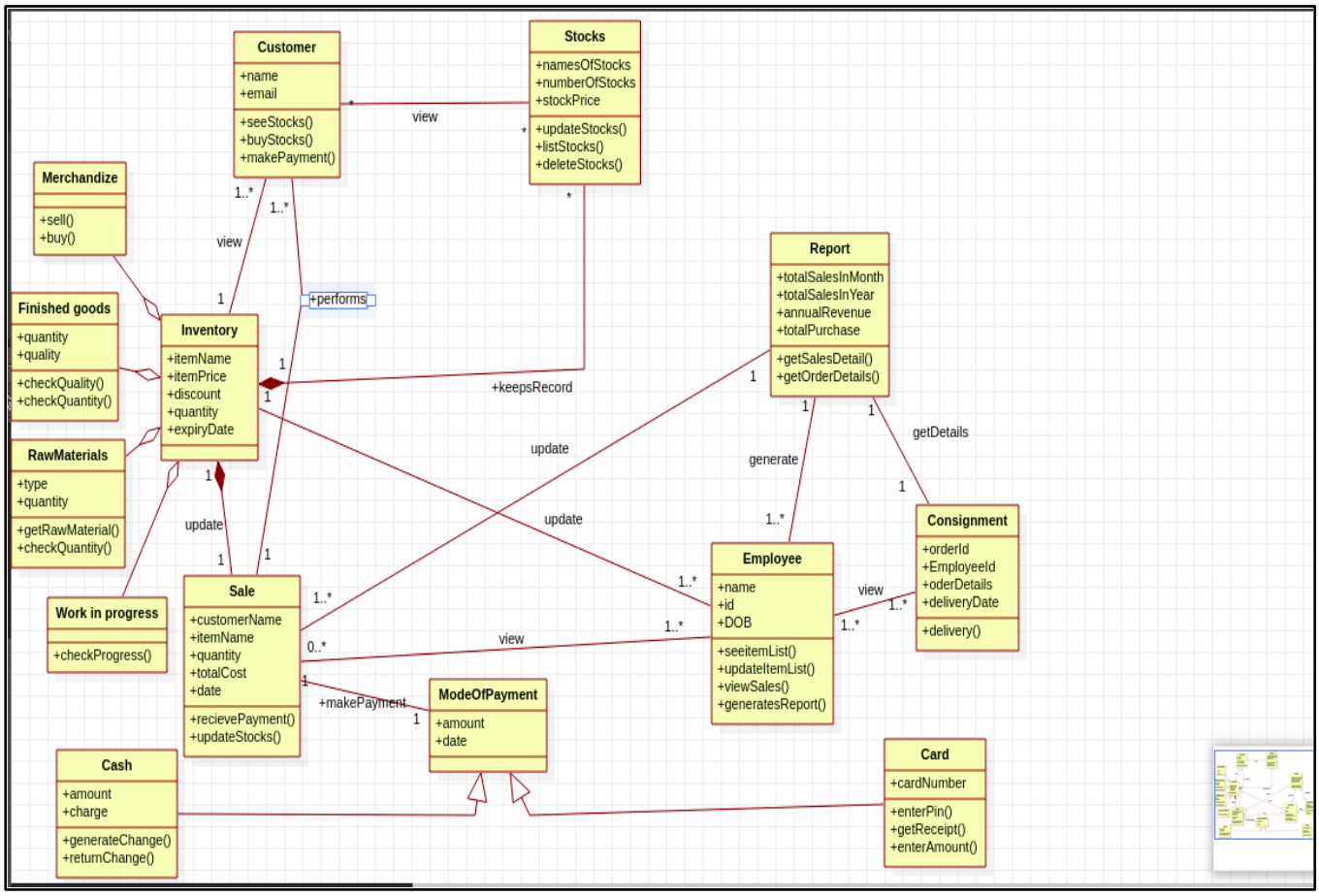
Functional Requirements

- The customer can purchase one or more product on any day, which will have a price and quantity.
- The customer will need to pay the bill for the products he or she has purchased, the bill number, type description and customer who is paying the bill is maintained.
- Stock consist of details such as the name of the product, id generated, quantity, cost, etc. This information is retrieved during the sales and purchase of a product.
- The vendor deals with the information about the details of the suppliers giving product to the organization.
- Vendor consist of details such as vendor name, address, email id, sales tax number etc. This information is retrieved when a Purchase is done

Non Functional Requirements

- The response time should be small.
- System should give expected performance results.
- The system should be easy to handle.

Class Diagram



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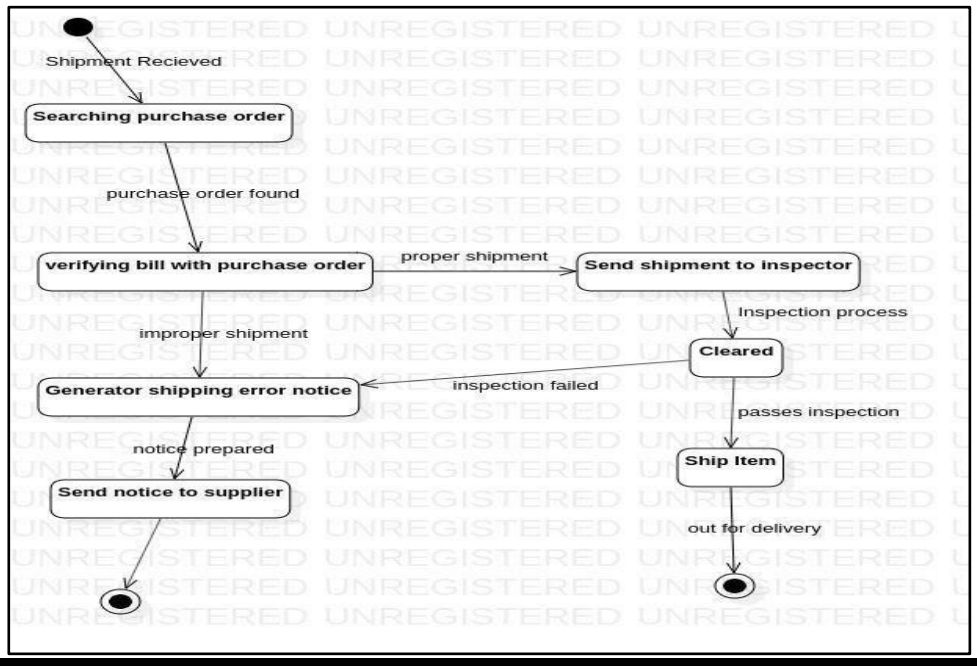

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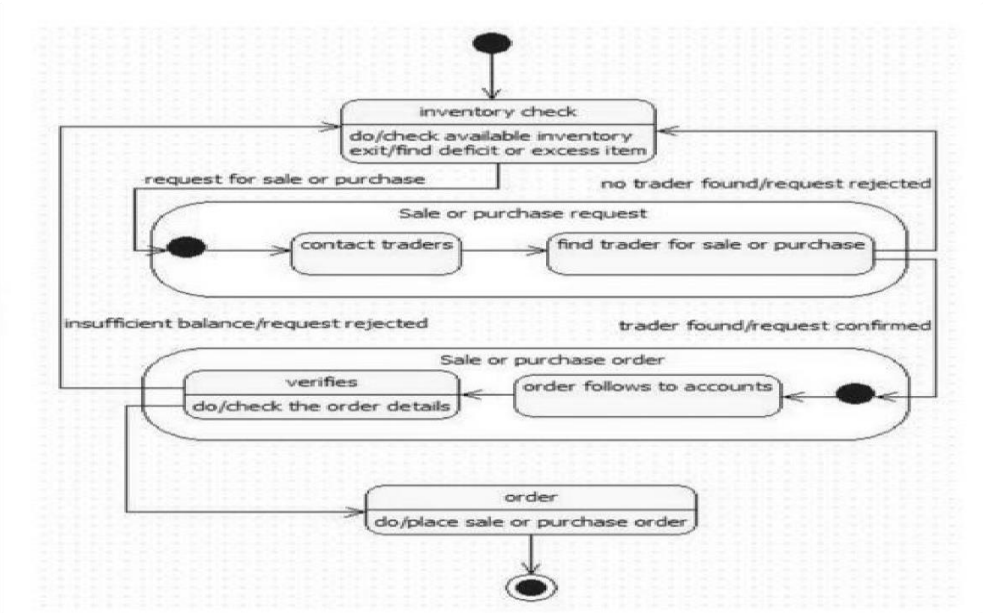

4. COFFEE VENDING MACHINE

Problem statement

To build a coffee vending machine for commercial purpose. The coffee vending machine is basically for the customers to buy coffee by themselves without any third person being involved. A coffee vending machine sells different types of coffee. Each type of coffee has a price and a name. A customer can buy their choice of coffee by selecting the button of their coffee and paying for the same through the coin box.

Software Requirement Specification

Purpose

Its purpose is to build a coffee vending machine that can prepare coffee by processing all its required ingredients.

Functional Requirements

- The vending machine must have money box, coin slot, display screen and products i.e coffee for the machine to be used.
- The user on selecting a coffee, the coffee machine must be able to dispense the selected coffee to the user.
- The user shall be able to purchase one kind of available drink at a time and get back the exact changes if he has put extra money. The user shall be able to quit the dispense of any beverage at any time during the dispensing.

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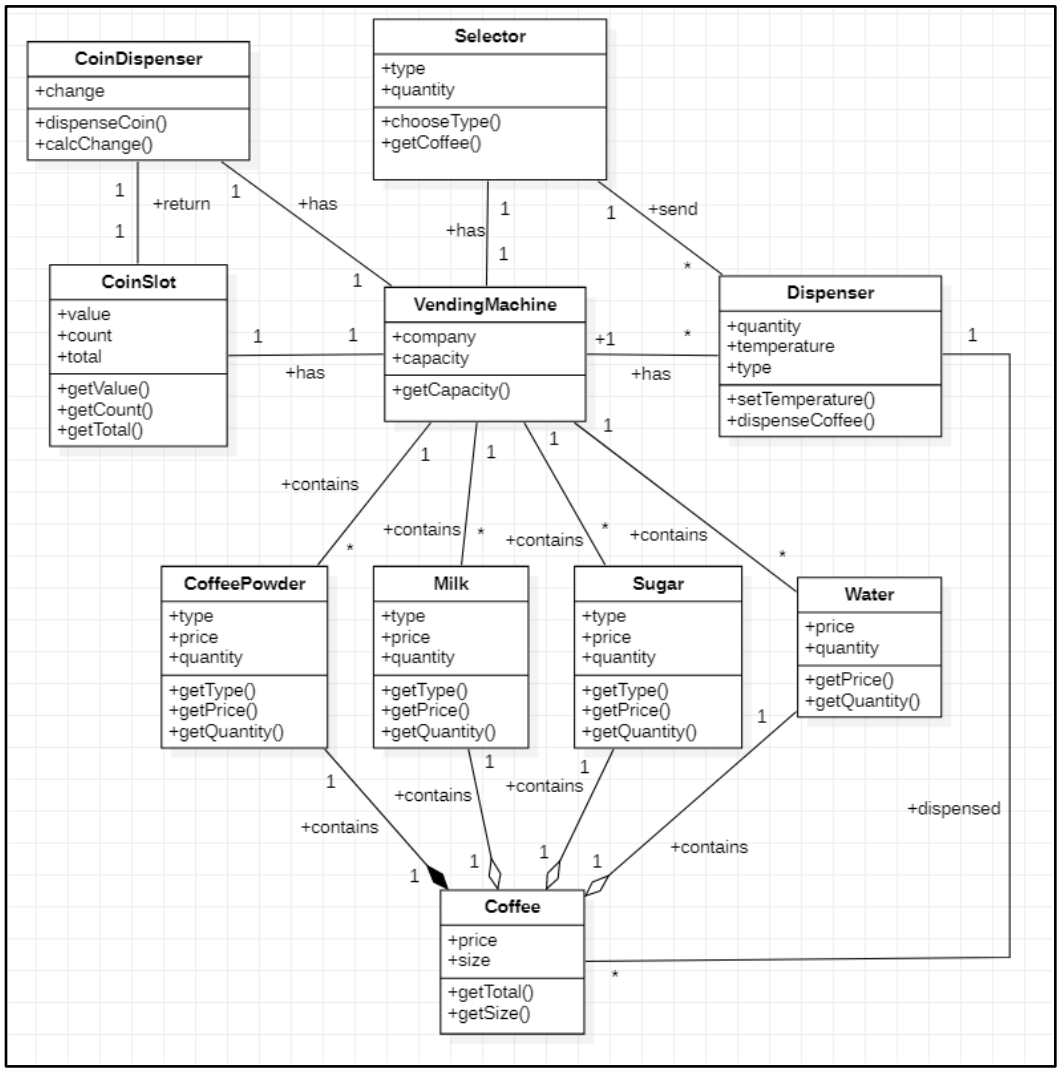
- The system shall be able to dispense coffee (or selected beverage) after a coin has been inserted.
- The system must check the validity of coins.

Non-functional Requirements

- System should give expected performance results.
- The response time should be small.
- The system should be easy to handle.

Class Diagram



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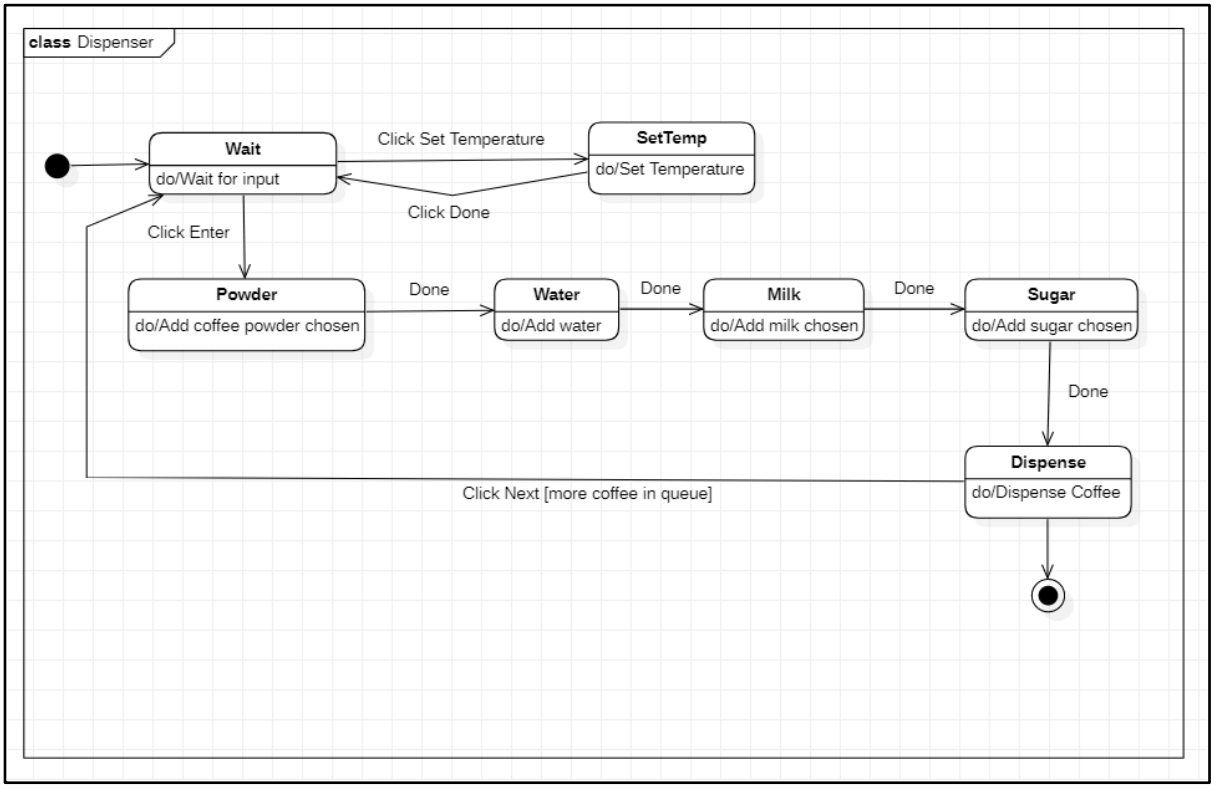
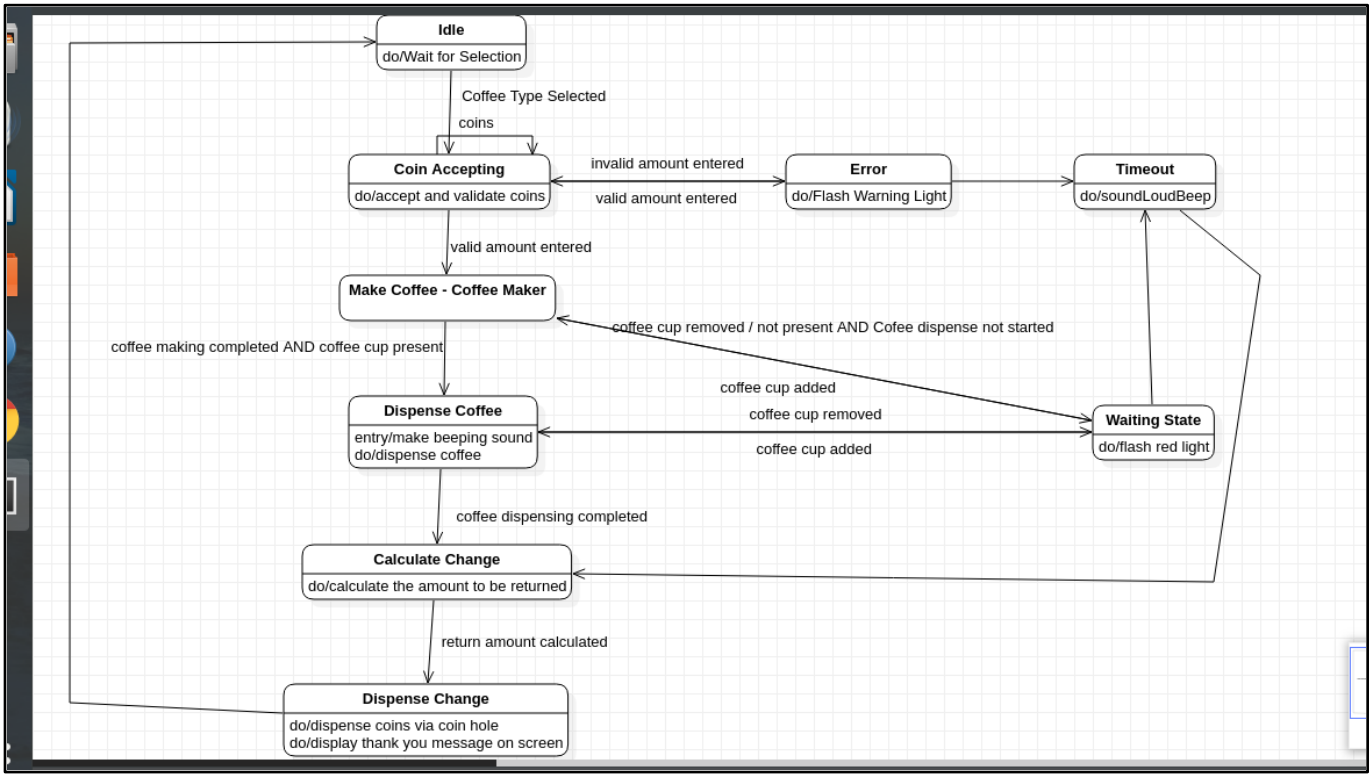


Advance State Diagram



5. ONLINE SHOPPING SYSTEM

Problem statement

To build an efficient system to enable customers to purchase the products online. The Online Shopping System for all kind of products web application is intended to provide complete solutions for vendors as well as customers through a single get way using the internet. It will enable vendors to setup online shops, customer to browse through the shop and purchase them online without having to visit the shop physically. This system allows the customer's to maintain their cart for add or remove the product over the internet.

Software Requirement Specification

Purpose

The Online Shopping System is intended to provide complete solutions for vendors as well as customers through a single gateway using internet as the sole medium.

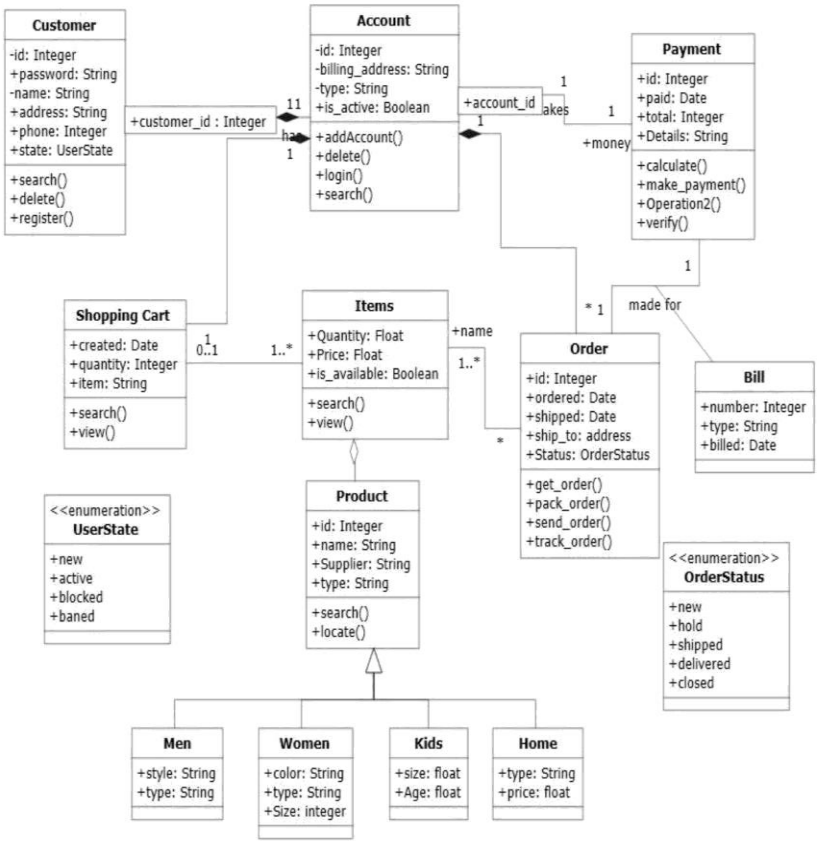
Functional Requirements

- The customer must have an account in the online website where he/she can purchase products.
- Customer can login using user credentials provided to him.
- If customer wants to buy the product then he/she must be registered, unregistered user can't go to the shopping cart.
- Changes to cart means the customer after login or registration can make order or cancel order of the product from the shopping cart.
- Customers can view all available products, compare them and make a choice for purchasing the products.
- After the payment of the product the customer will logged out.

Non Functional Requirements

- System should give expected performance results.
- The response time should be small.
- The system should be easy to handle.

Class Diagram



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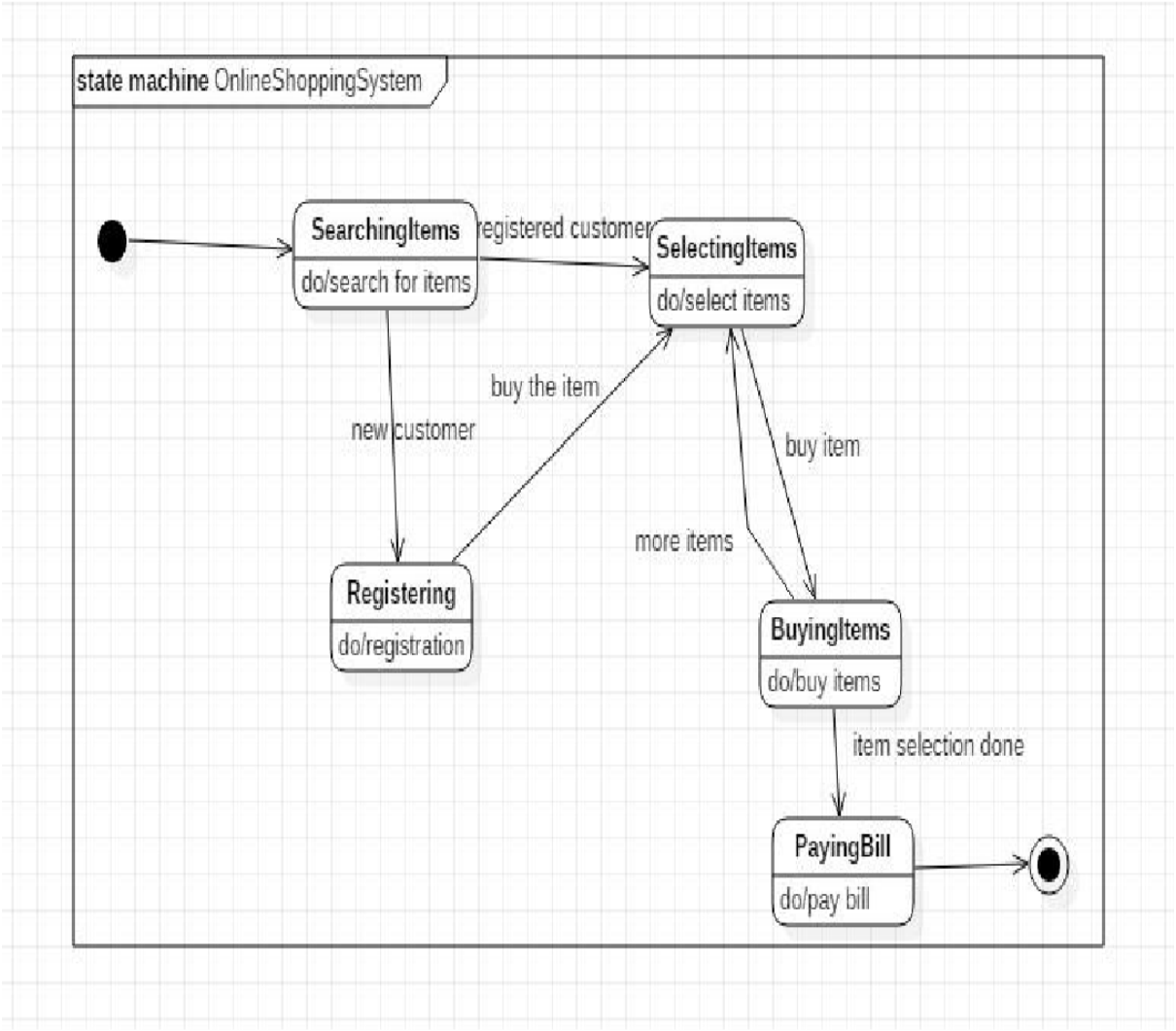

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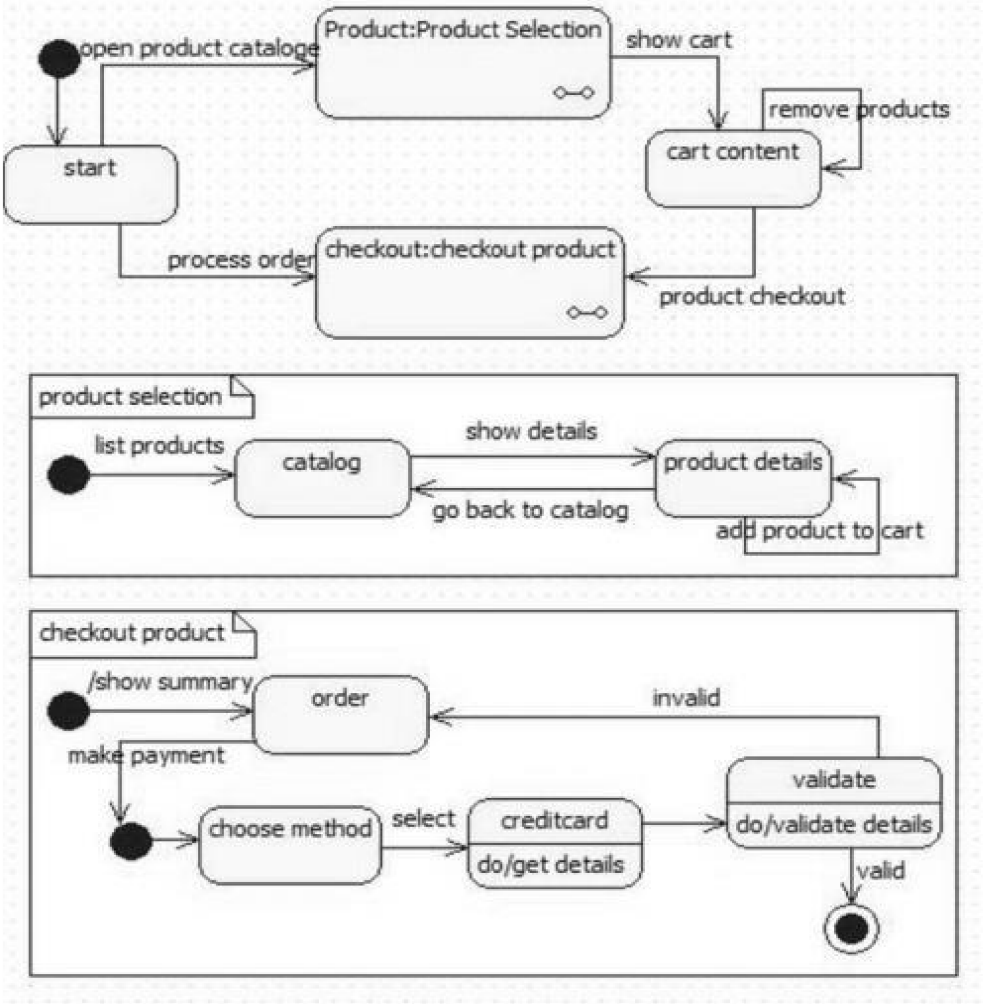


6. RAILWAY RESERVATION SYSTEM

Problem statement

Railway Reservation System is a system used for booking tickets over internet.Any Customer Can book tickets for different trains.Software has to be developed for automating the manual reservation system of railway. It should be designed to provide functionalists like booking of tickets in which a user should be able to applied for tickets of any train and of any class. The software takes the current system date and time as the date of issue and calculates the amount to be paid by the user. It also provide the functionality of cancellation of tickets.

Software Requirement Specification

Purpose

The purpose of this system is to describe the railway reservation system which provides the details regarding train availability and its timings, reservation, billing and cancellation on various types of reservations.

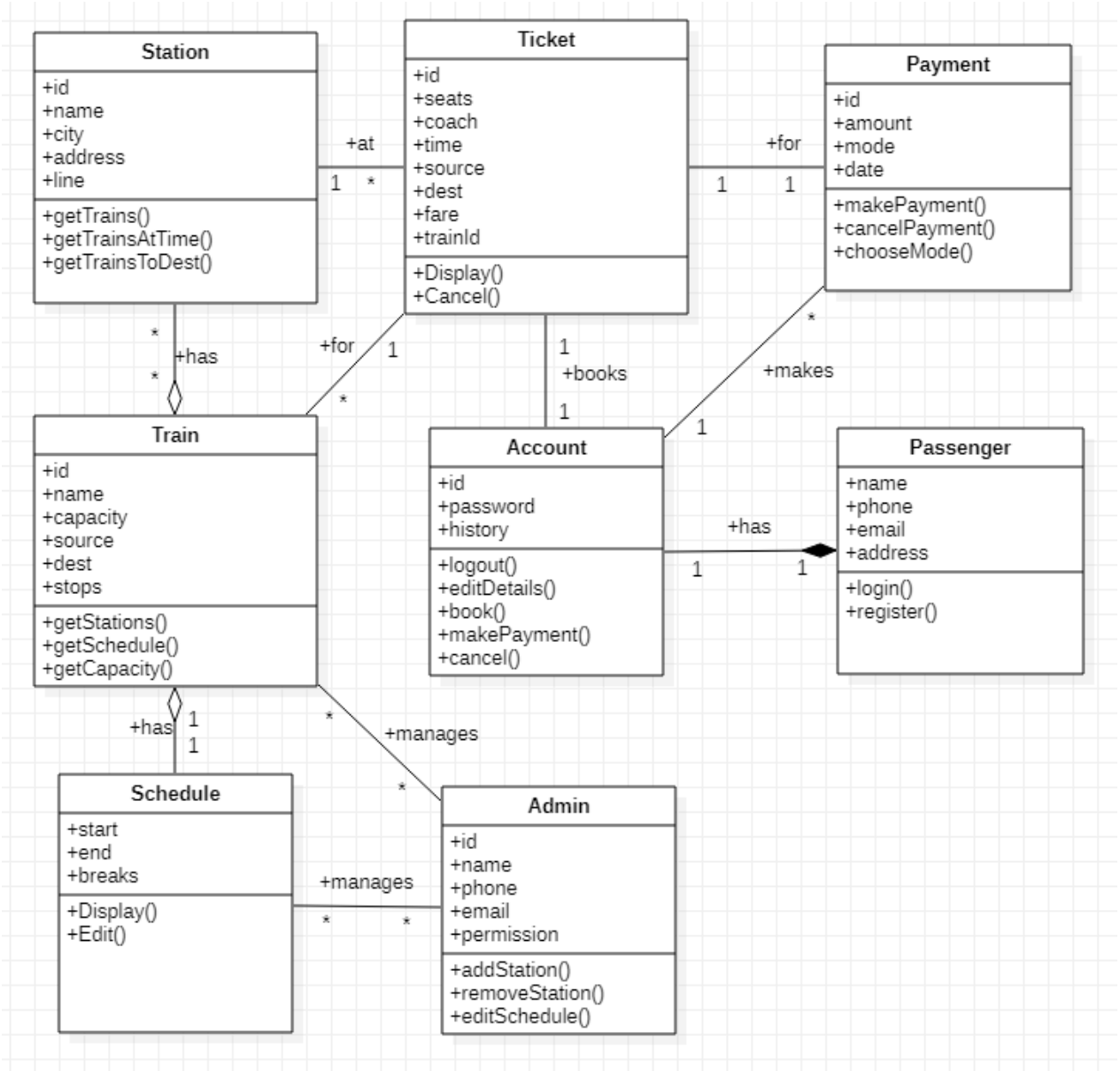
Functional Requirements

- Each user should have a user id and a password.Record of the users of the system should be kept in the log file. Provision should be made for full backup of the system.
- The customers can view the trains available at any day,the cost and number of tickets available for any train.
- After booking ticket the customer has to checkout by paying fare amount to clerk.
- The system displays the details of train of which user enter the name.The information is saved and the corresponding updating take place in the database.

Non Functional Requirements

- System should give expected performance results.
- The response time should be small.
- The system should be easy to handle.

Class Diagram



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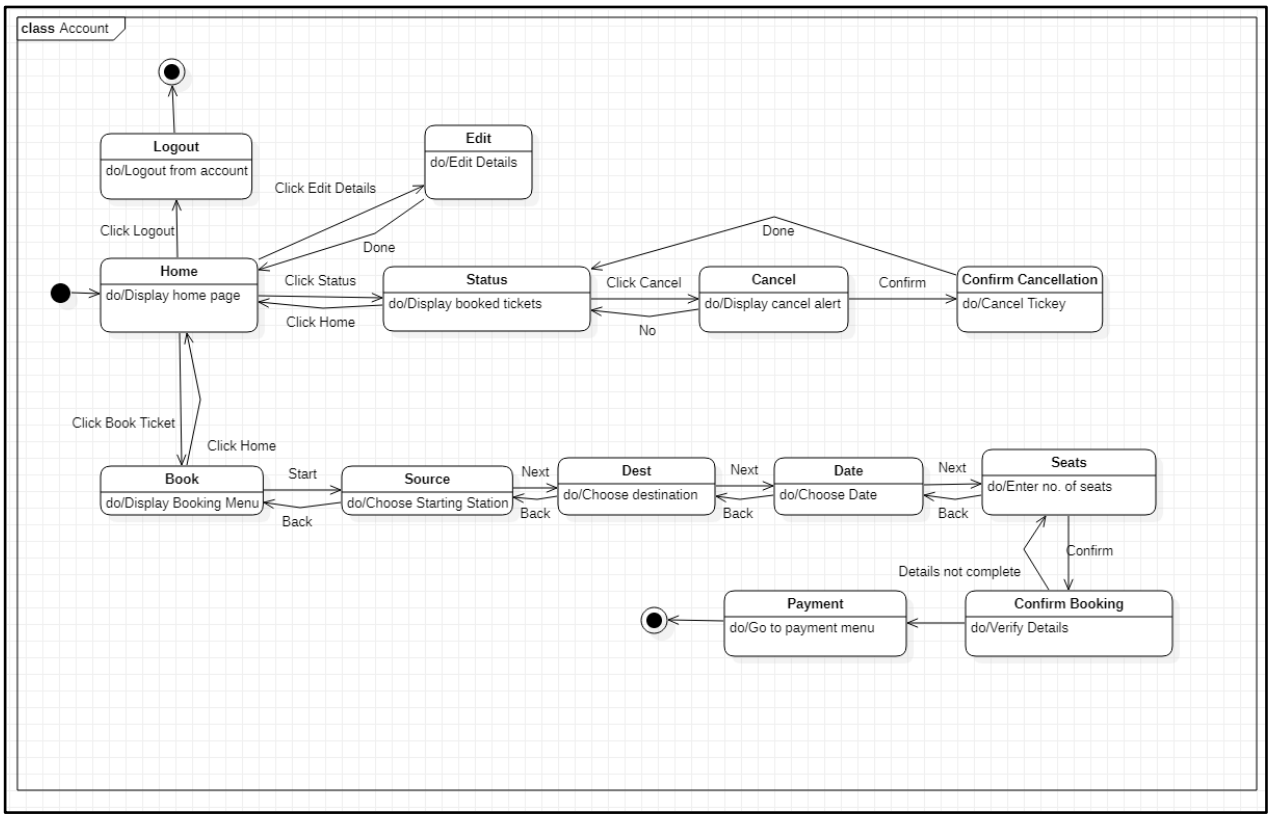

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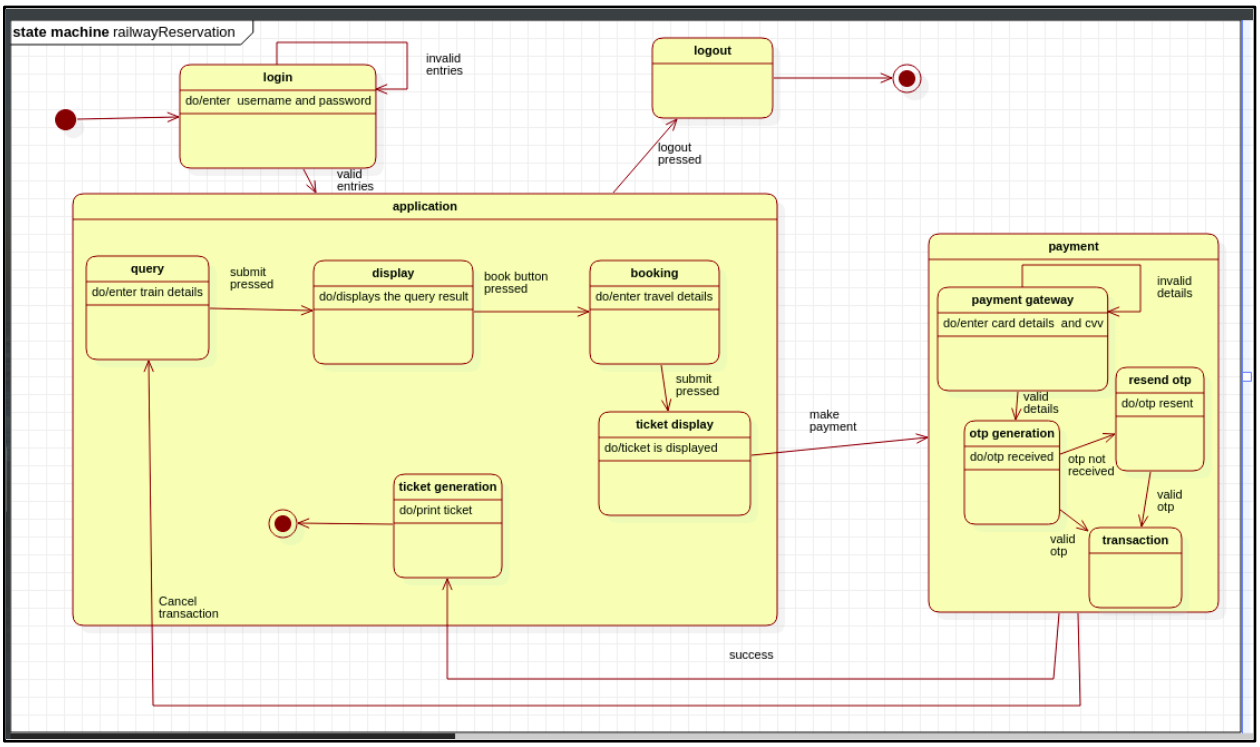


7. GRAPHICS EDITOR

Problem statement

To build a Graphics editor software package to create line drawings involving several types of graphical entities. The graphics editor provides an Application Programmer's Interface that enables a programmer to develop their own graphical model editor for a specific type of model.

Software Requirement Specification

Purpose

Its purpose is to enable the users to create various graphical objects using the Graphics Editor. It can group several drawings into one i.e. complex drawing

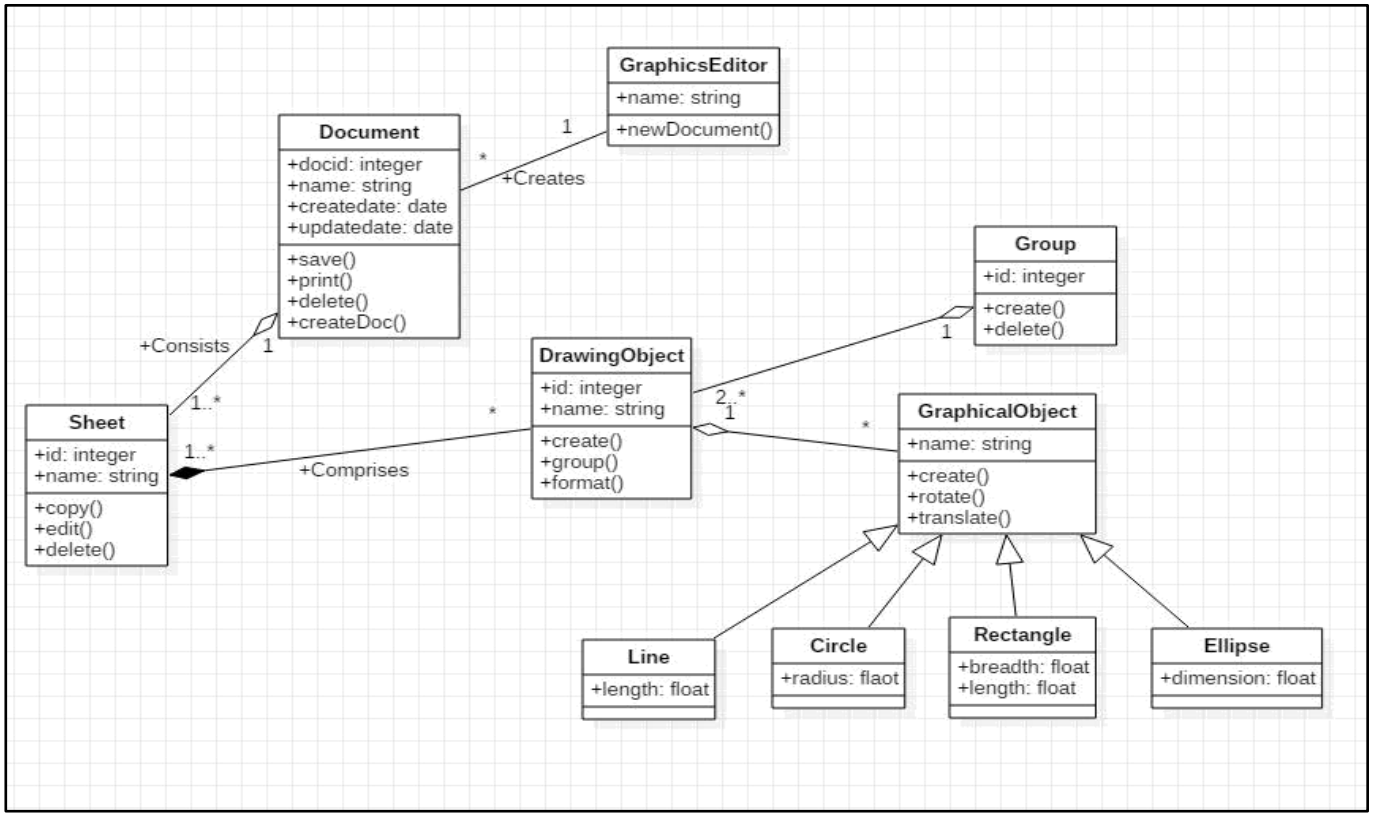
Functional Requirements

- The graphical document editor consists of many documents, where each document can be saved, opened, printed or create a new one .
- The graphical editor consists of a graphical document editor which can be used to create new document, delete, document, update or view the document.
- A document is made up of many sheets which can have graphics included in them.
- User can use different shadings of line tool.
- User can save, edit or delete the document containing graphical objects.

Non-functional Requirements

- System should give expected performance results.
- The response time should be small.
- The system should be easy to handle.

Class Diagram



State Diagrams

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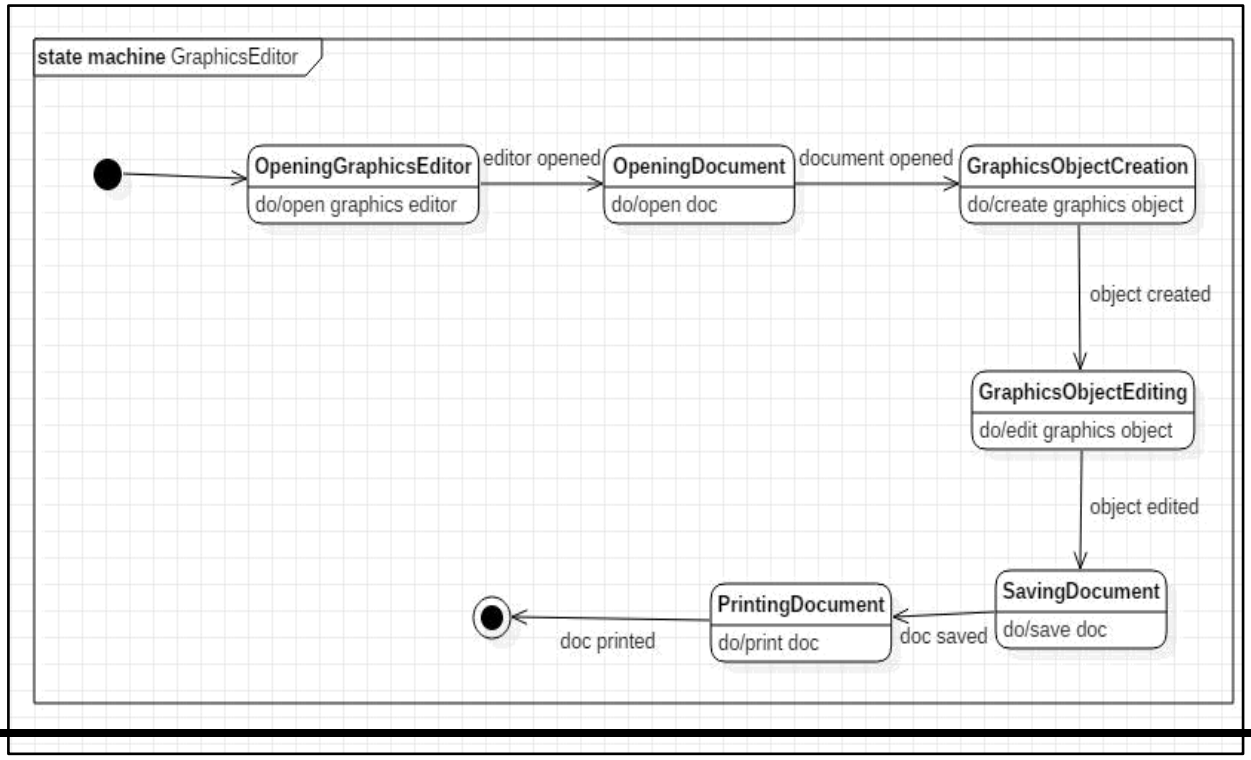

Advance State Diagram