

MODULE 1: ACCOUNTS DEPARTMENT

1. Requirements and Descriptions

M1 Req1: Process Salary

Description: The system shall facilitate the seamless processing and payment of salaries for both faculty members and non-teaching staff employed within the organization. For example: We can select from the menu and enter details to process salary

M1 Req2: Faculty Salary

Description: The system shall provide a feature that allows authorized accountants to select the role of staff as "faculty" and subsequently initiate the processing and payment of salaries for faculty members. This requirement is focused on ensuring efficient payroll management for faculty members within the organization.

M1 Req3: Head of Departments (HODs) Salary

Description: The system shall enable the smooth and efficient processing of salaries specifically for the Heads of Departments (HODs) within the BIT Deoghar. This requirement specifies that the accountant role will have the capability to process the salaries for HODs.

M1 Req4: Professors Salary

Description: The system shall enable the smooth and efficient processing and payment of salaries specifically for the professors within the departments of college. This requirement specifies that the role of an accountant will have the capability to process salaries for professors.

M1 Req5: Lab Assistant Salary

Description: The system shall enable the smooth and efficient processing and payment of salaries specifically for the Lab Assistants within the various departments of the college. This requirement stipulates that the "accountant" role will possess the capability to process the salaries for Lab Assistants.

M1 Req6: Staff Salary

Description: The system shall provide a feature that allows authorized accountants to select the role of staff as per their designated position (e.g., clerical, administrative, technical) and subsequently initiate the processing and payment of salaries for non-teaching staff. This requirement aims to streamline payroll management for non-teaching staff within the organization, accommodating various job roles and compensation structures.

M1 Req7: Security Salary

Description: The system shall provide a feature that allows authorized accountants to initiate the processing and payment of salaries for security contractors. This requirement is focused on ensuring efficient payroll management specifically for security contractor personnel within the organization.

M1 Req8: Student Fees

Description: The system shall provide comprehensive functionality for the management of student fees within the educational institution.

M1 Req9: B.Tech Student Fee Payment

Description: The system shall provide a comprehensive suite of functionality for the efficient management of student fees specifically for B.Tech students within the educational institution. This requirement encompasses the handling of various types of fees, including but not limited to tuition fees, miscellaneous fees, and any other charges associated with the enrolment and education of BTECH students.

M1 Req10: B.C.A. Student Fee Payment

Description: The system shall provide a comprehensive suite of functionality for the efficient management of student fees specifically for B.C.A. students within the educational institution. This requirement encompasses the handling of various types of fees, including but not limited to tuition fees, miscellaneous fees, and any other charges associated with the enrolment and education of BTECH students.

M1 Req11: B.B.A. Student Fee Payment

Description: The system shall provide a comprehensive suite of functionality for the efficient management of student fees specifically for B.B.A. students within the educational institution. This requirement encompasses the handling of various types of fees, including but not limited to tuition fees, miscellaneous fees, and any other charges associated with the enrolment and education of BTECH students.

M1 Req12: Bill Payments

Description: The system shall provide comprehensive functionality for the efficient management of bill payments, encompassing various types of bills and payments made by users or entities interacting with the system.

M1 Req13: Electricity Bill Payments

Description: The system shall offer comprehensive functionality for the efficient management of electricity bill payments. This requirement covers the handling of various types of electricity bills and payments made by users or entities interacting with the system.

M1 Req14: Transportation Bill Payments

Description: The system shall deliver comprehensive functionality for the efficient management of transportation bill payments. This requirement encompasses the handling of various types of transportation bills and payments made by users or entities interacting with the system.

M1 Req15: Maintenance Bill Payments

Description: The system shall offer comprehensive functionality for the efficient management of maintenance bill payments, covering various types of bills associated with hostel and college maintenance, sanitation, fooding, and lodging. This requirement encompasses the handling of bills and payments made by users or entities interacting with the system.

M1 Req16: Newspaper Bill Payments

Description: The system shall deliver comprehensive functionality for the efficient management of newspaper bill payments, covering various types of newspaper subscription bills and payments made by users or entities interacting with the system.

M1 Req17: Cafeteria

Description: The system is expected to provide an all-encompassing suite of features designed for the seamless handling of cafeteria bill payments. This requirement encompasses the management of diverse cafeteria-related expenses and the processing of payments from individuals or entities engaged with the system.

M1 Req18: Purchase Management

Description: The system shall provide a comprehensive purchase management functionality for the procurement of a wide range of items, including but not limited to instruments, classroom equipment, hostel utilities, sports utilities, sanitary items, and other necessary supplies. This requirement encompasses the entire procurement process, from item requisition to purchase approval and inventory management.

2. UML Diagrams

1. Use case Diagram

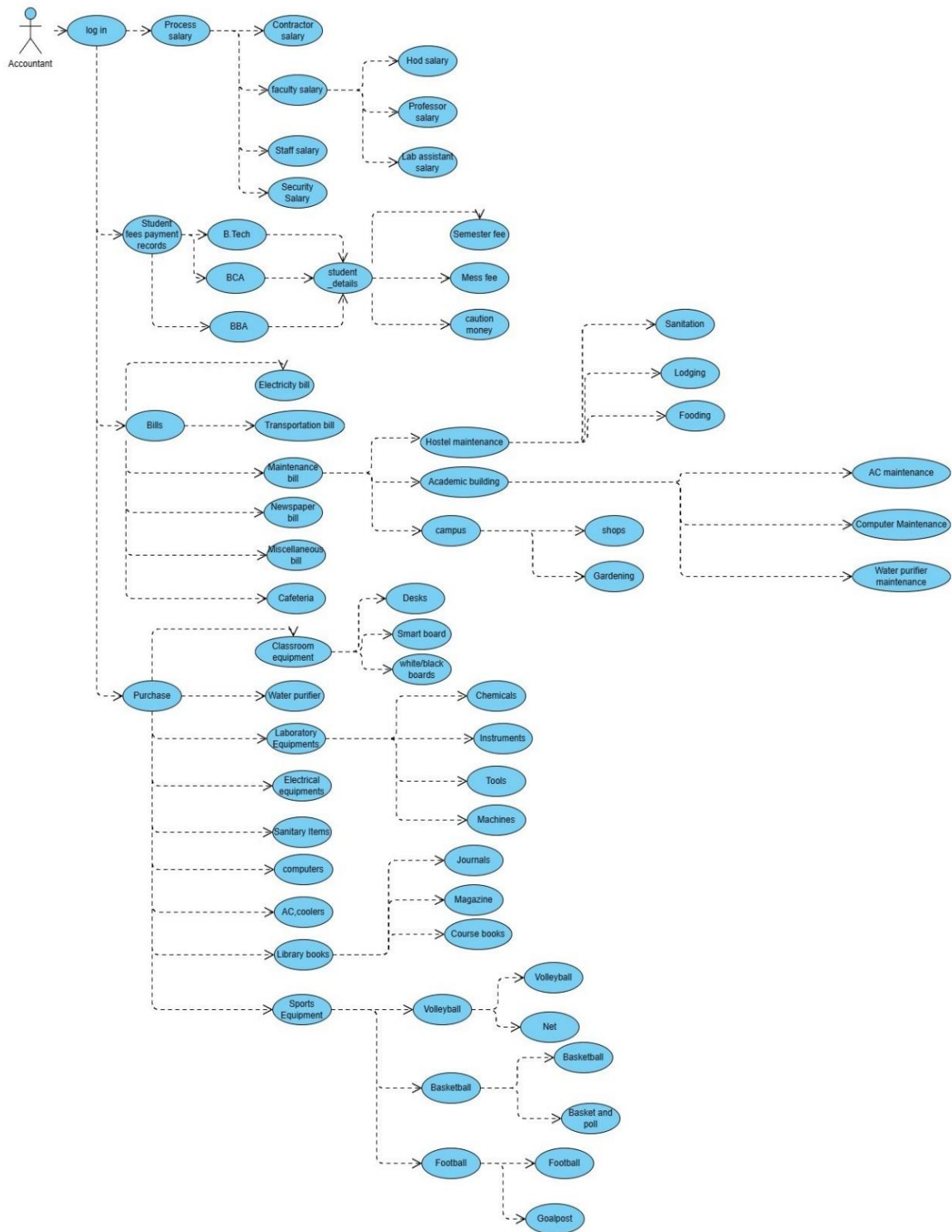


Fig 1.1: Use Case Diagram: Accounts Department

2. Activity Diagrams

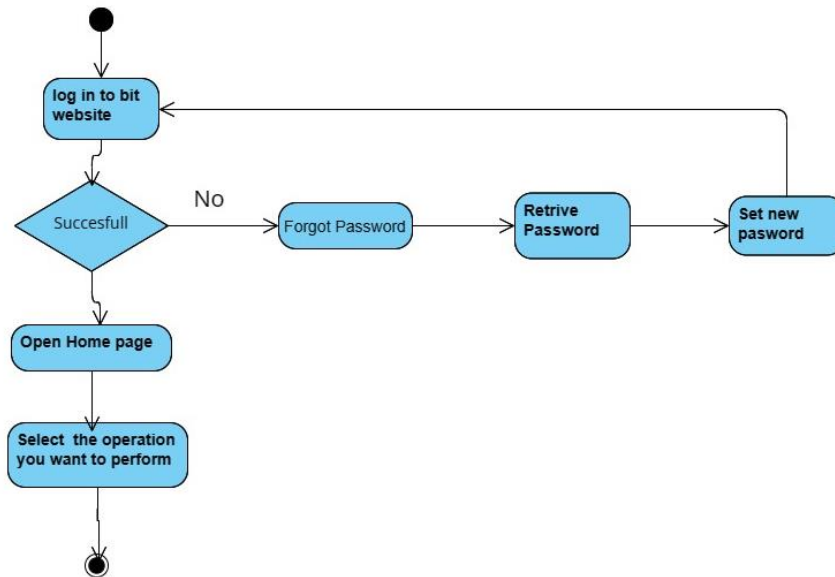


Fig 1.2: Activity Diagram: Login to Portal

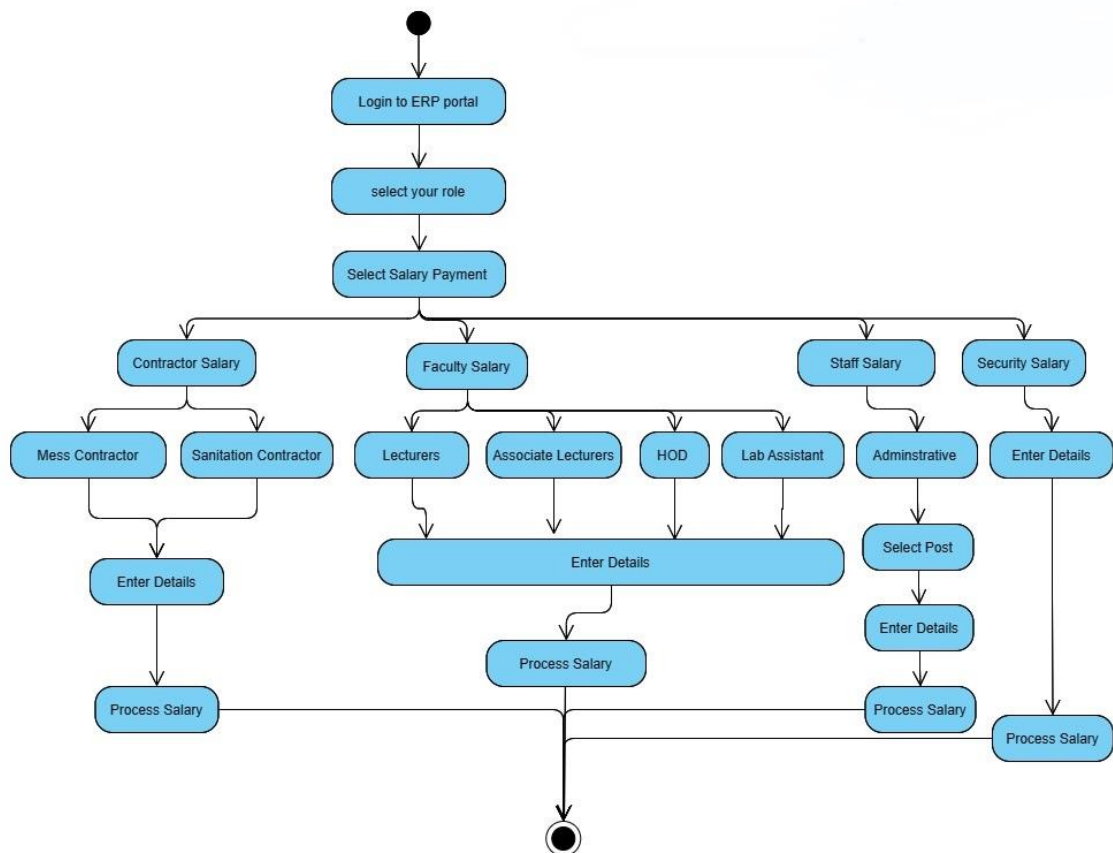


Fig 1.3: Activity Diagram: Process Salary

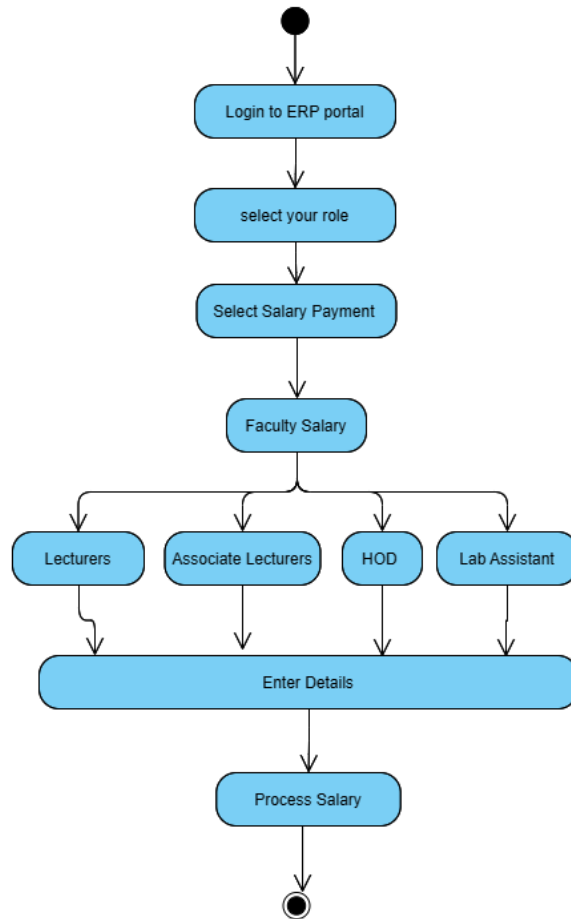


Fig 1.4: Activity Diagram: Faculty Salary

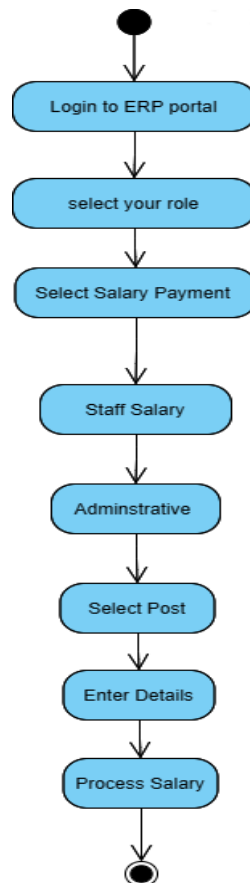


Fig 1.5: Activity Diagram: Staff Salary

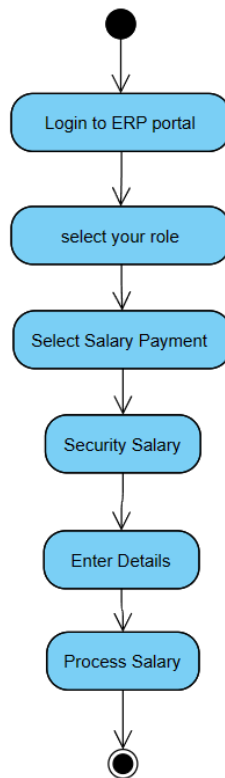


Fig 1.6: Activity Diagram: Security Salary

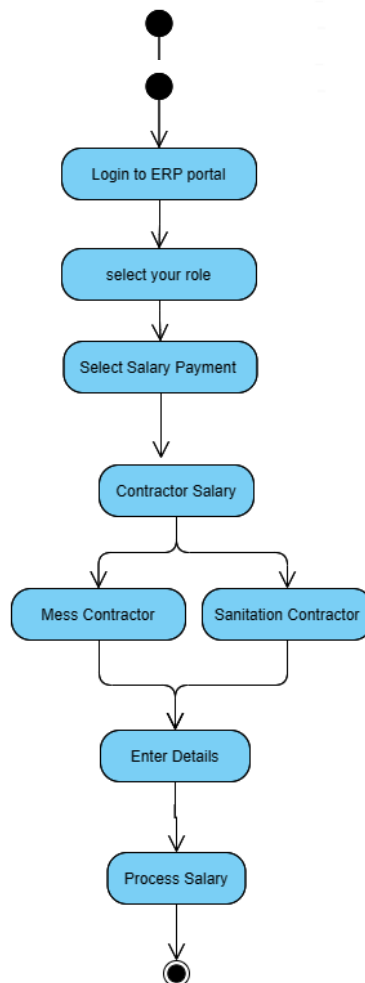


Fig 1.7: Activity Diagram: Contractor Salary

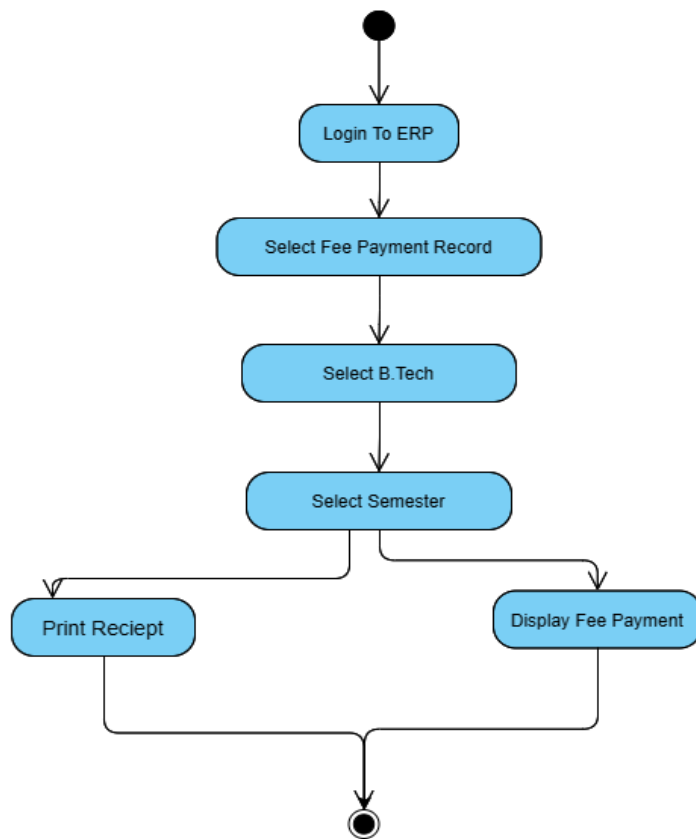


Fig 1.8: Activity Diagram: B.Tech Fee Payment

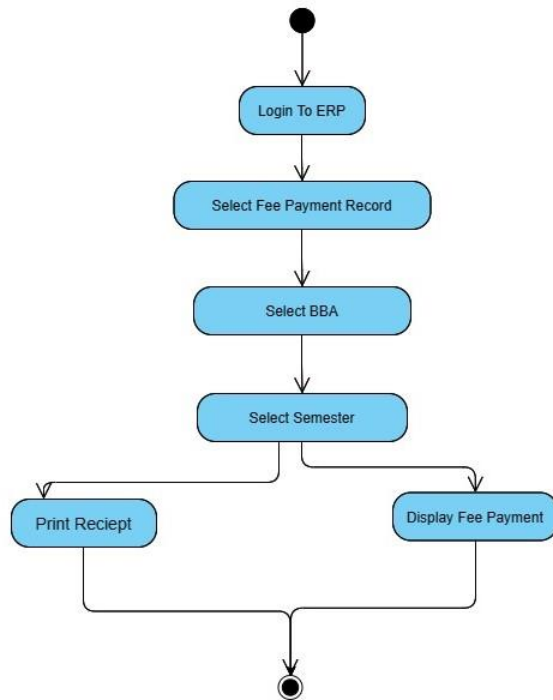


Fig 1.9: Activity Diagram: B.B.A. Fee Payment

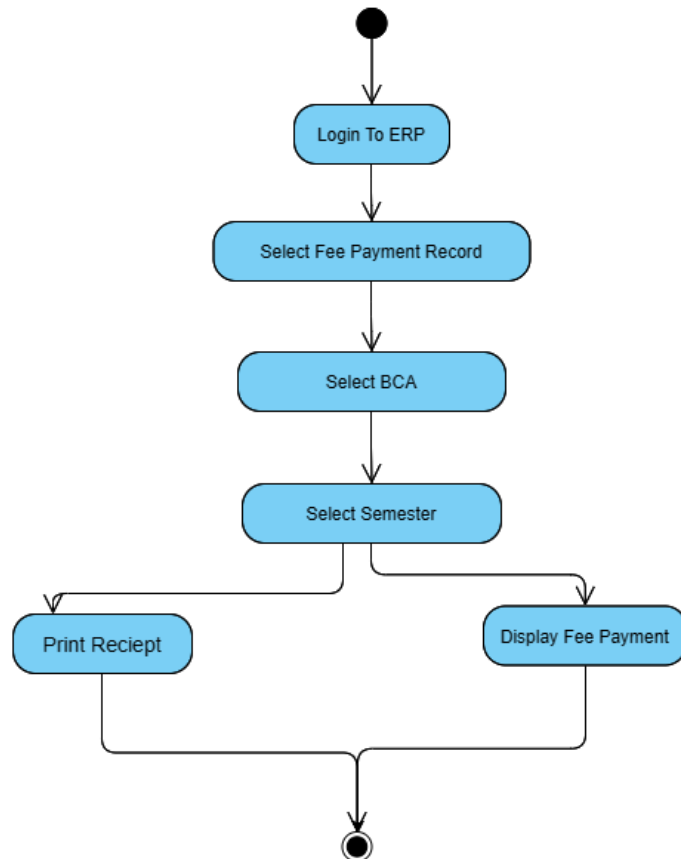


Fig 1.10: Activity Diagram: B.C.A. Fee Payment

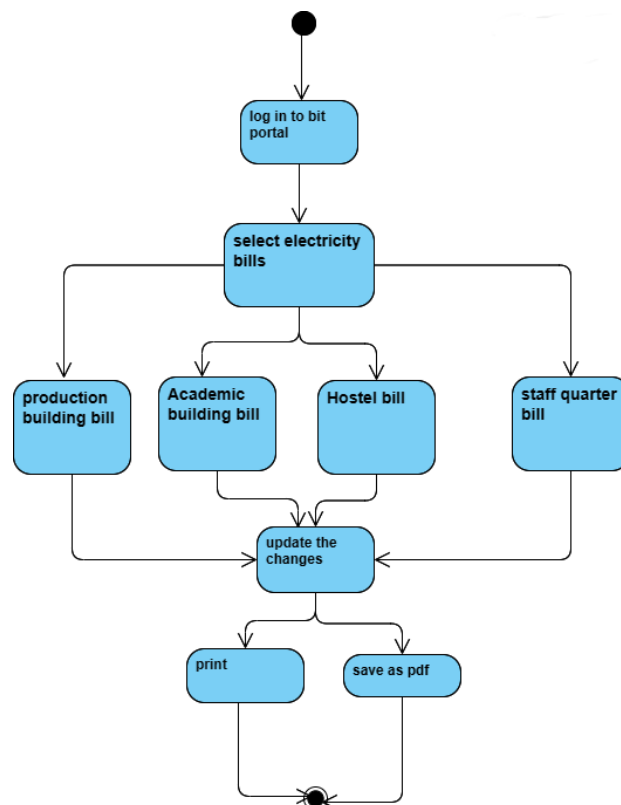


Fig 1.11: Activity Diagram: Electricity Bill Payment

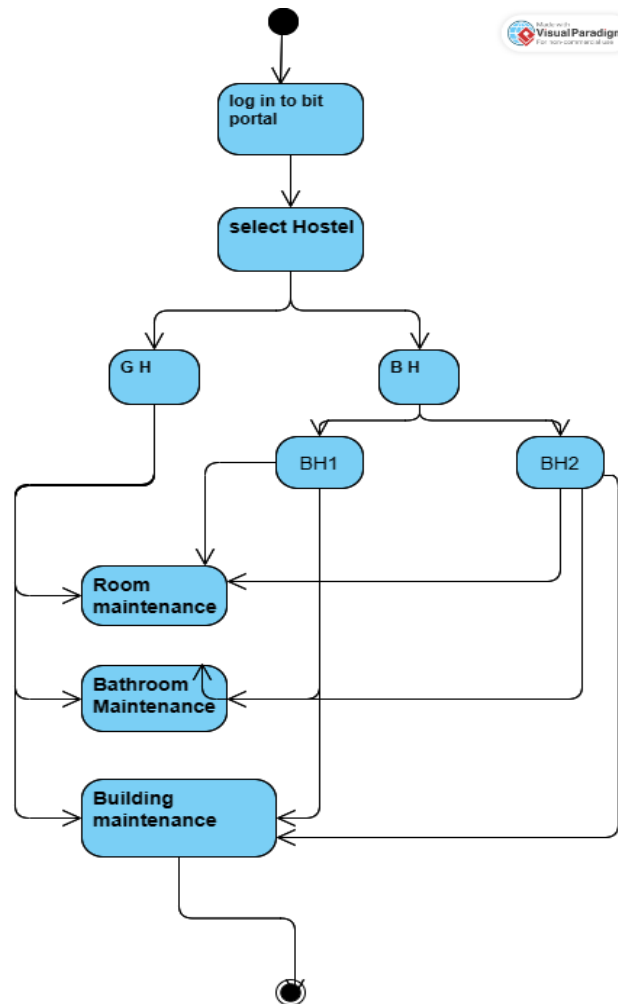


Fig 1.12: Activity Diagram: Hostel Maintenance bill

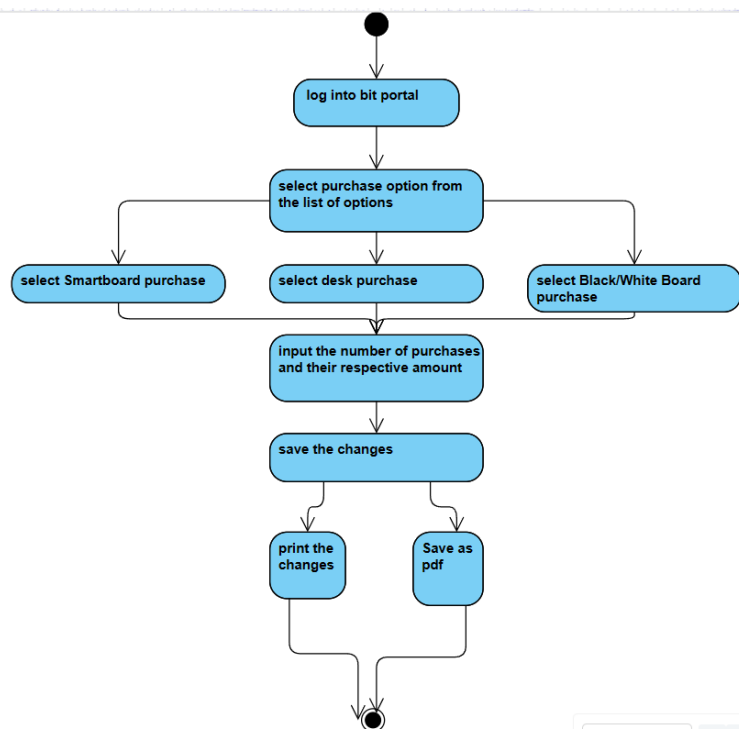


Fig 1.13: Activity Diagram: Classroom Equipment Purchase

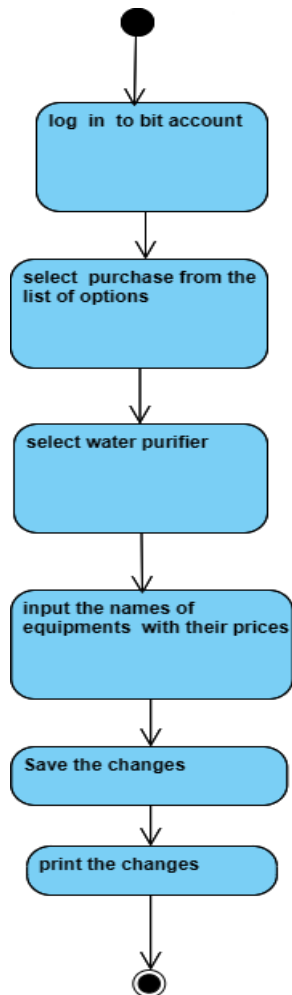


Fig 1.14: Activity Diagram: Water Purifier purchase

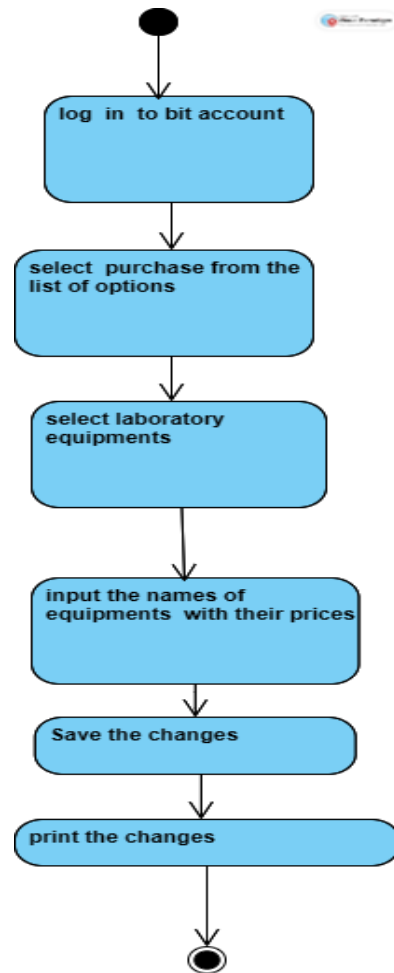


Fig 1.15: Activity Diagram: Water Purifier purchase

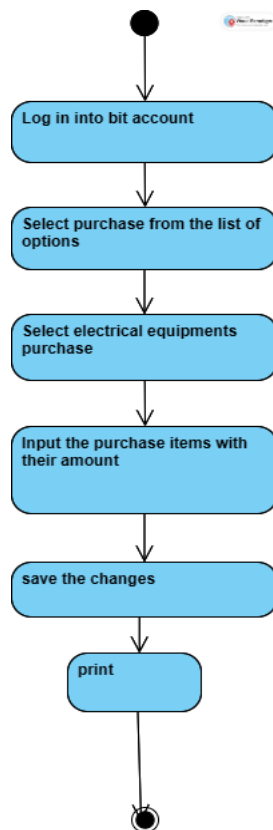


Fig 1.16: Activity Diagram: Electrical Equipment purchase

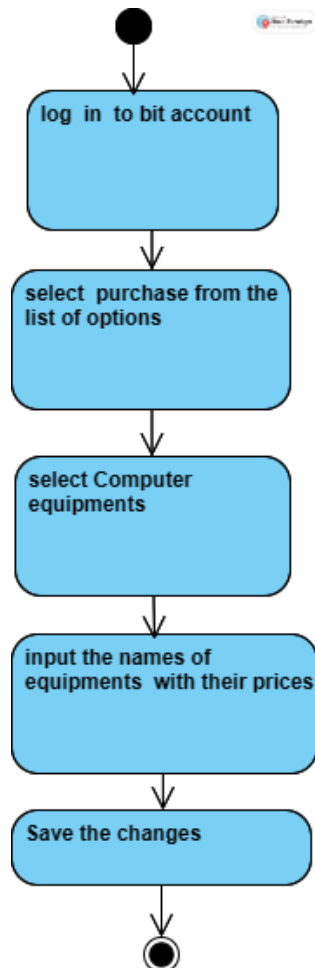


Fig 1.17: Activity Diagram: Computer purchase

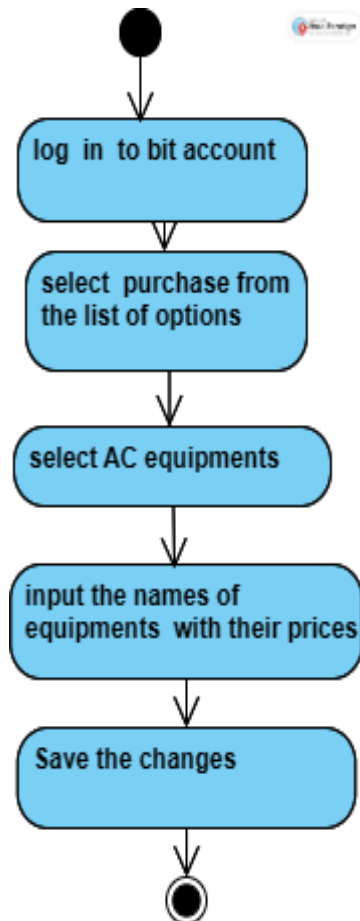


Fig 1.18: Activity Diagram: AC purchase

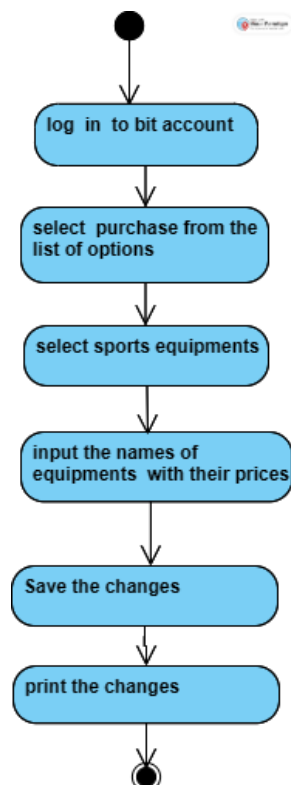


Fig 1.19: Activity Diagram: Sports Equipment purchase

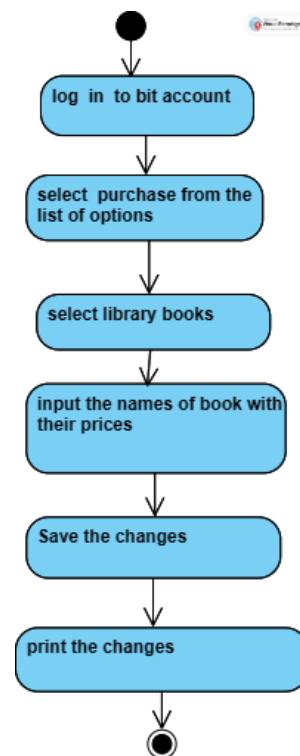


Fig 1.20: Activity Diagram: books purchase

3. Sequence Diagram

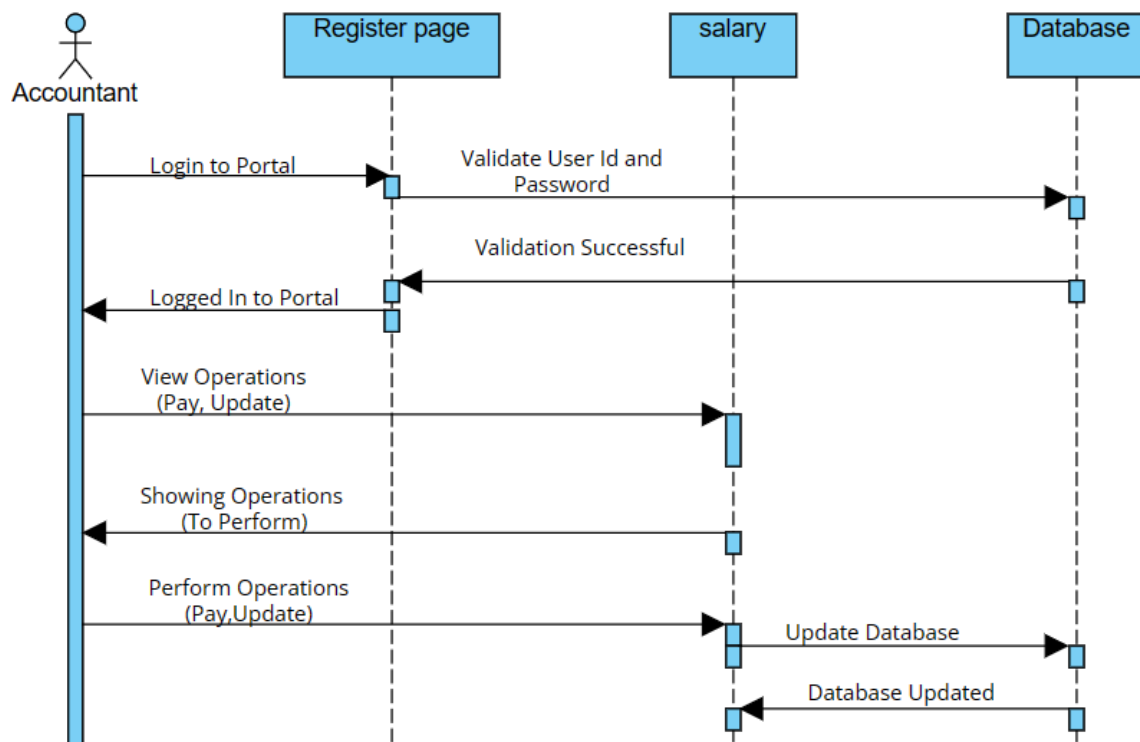


Fig 1.21: Sequence Diagram: Salary Payment

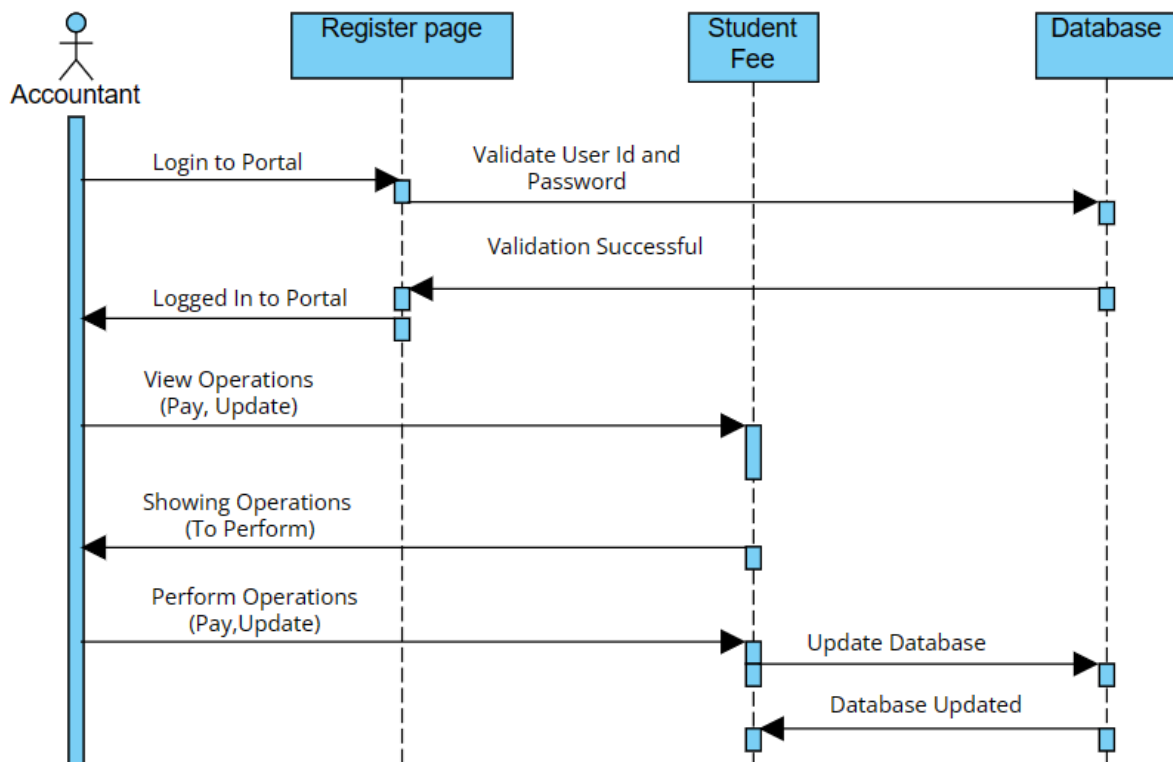


Fig 1.22: Sequence Diagram: Fee Payment

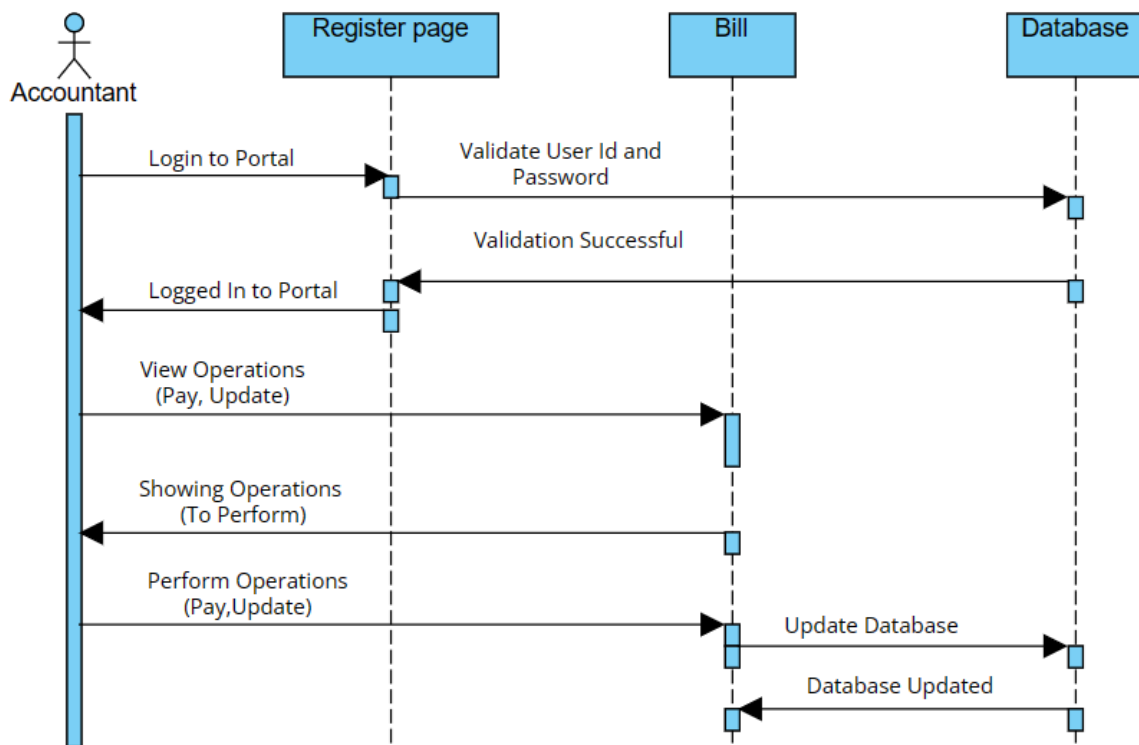


Fig 1.23: Sequence Diagram: Bill Payment

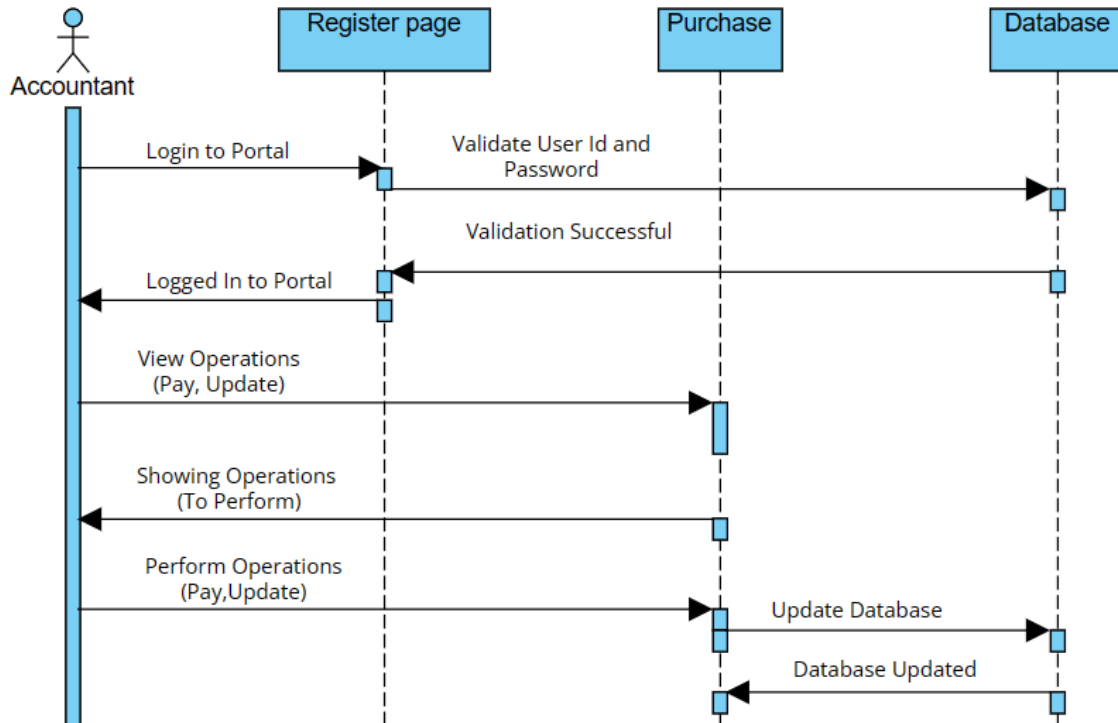


Fig 1.24: Sequence Diagram: Purchase Management

4. Class, Association, Aggregation, Super-class Sub-class Diagram

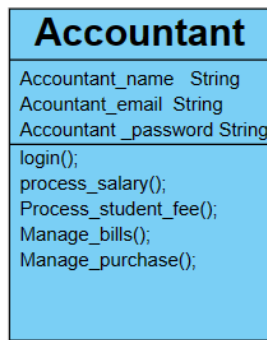


Fig: Account Class Diagram

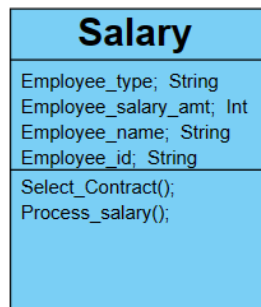


Fig: Salary Class Diagram

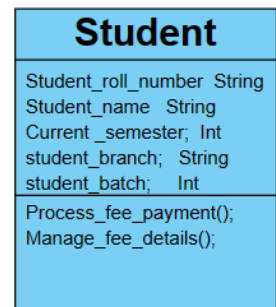


Fig: Student Class Diagram

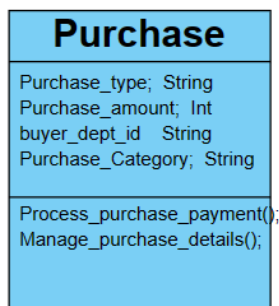


Fig: Purchase Class Diagram

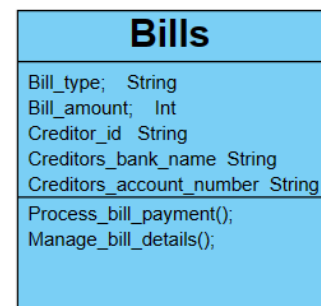


Fig: Bill Class Diagram

Fig 1.25: Class Diagram

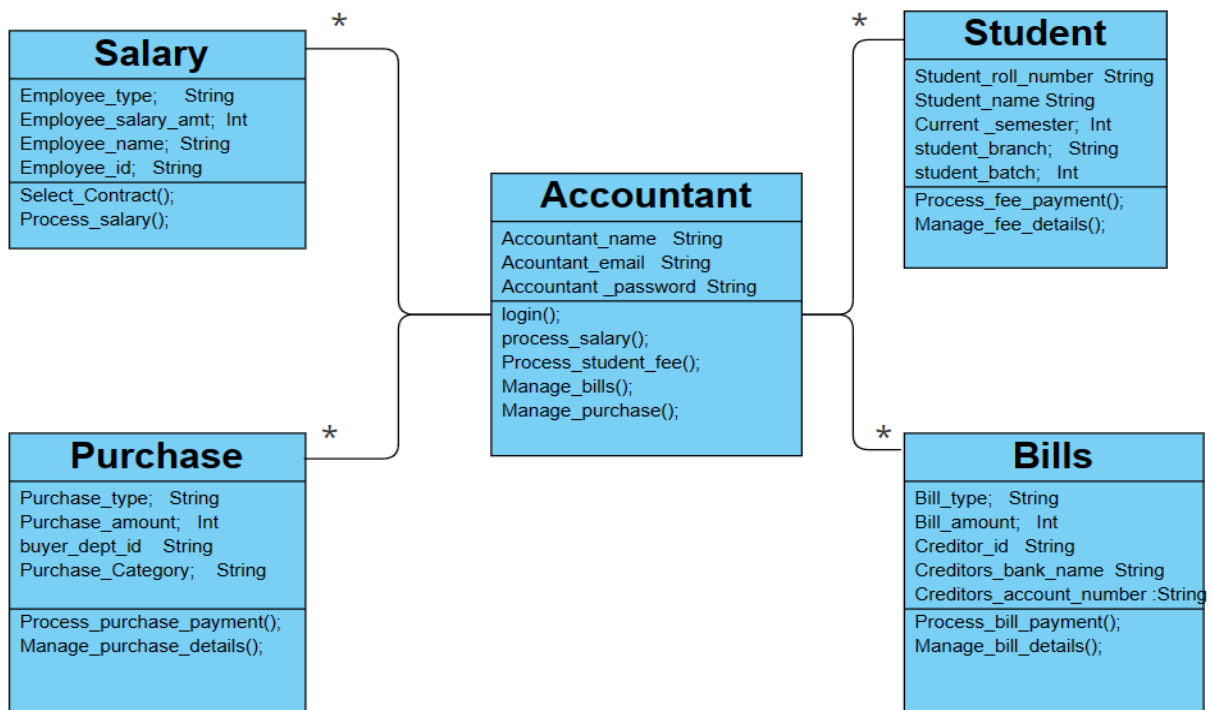


Fig 1.26: Association Diagram

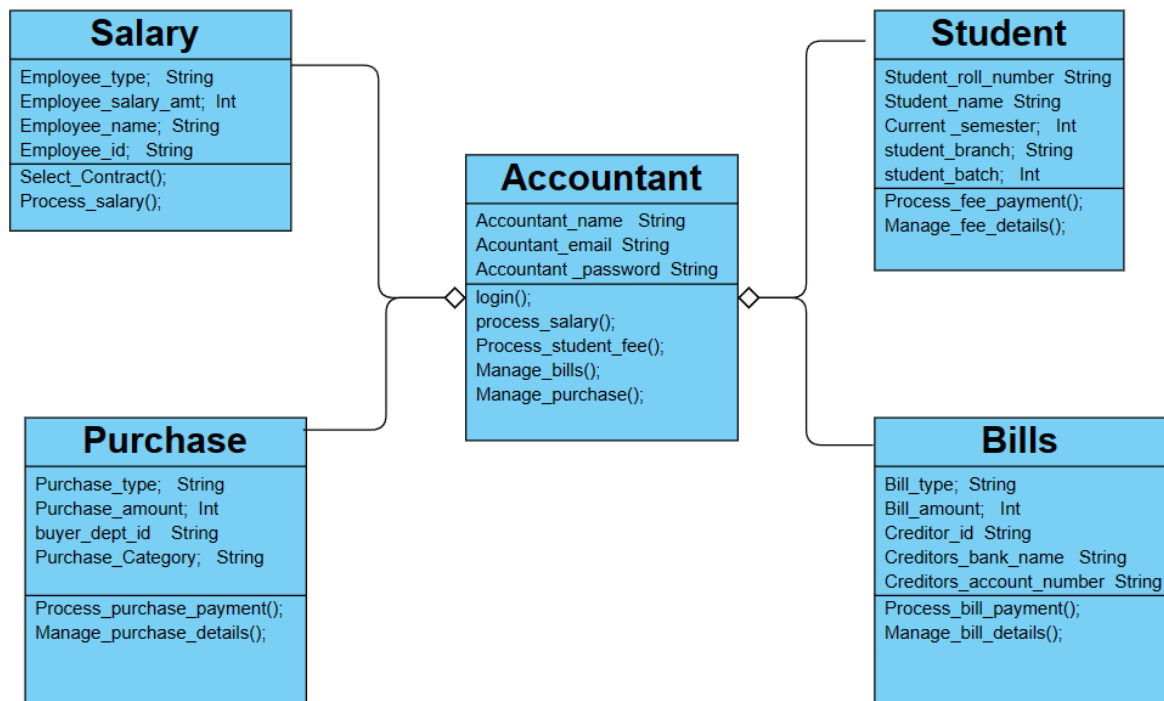


Fig 1.27: Aggregation Diagram

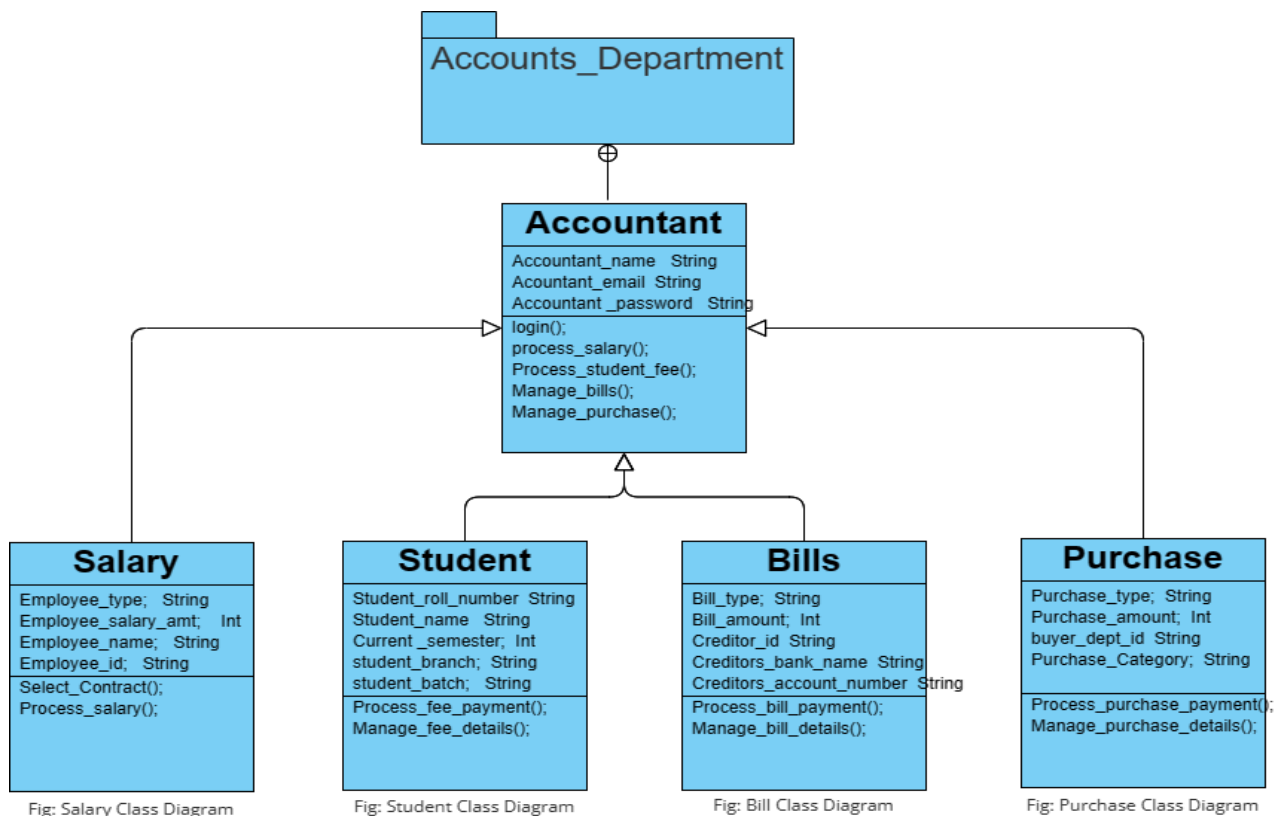


Fig 1.28: Superclass Subclass Diagram

MODULE 2: EXAMINATION DEPARTMENT

1. Requirements and Descriptions

M2 Req1: Role based Authentication page

Description: The system shall provide a role-based authentication page dedicated to the examination department of the college. This requirement aims to ensure secure access control and streamlined user authentication processes, allowing authorized personnel to perform their respective tasks within the examination department's domain.

The system shall define distinct user roles within the examination department, including roles for exam coordinators, administrators, faculty members, and support staff.

M2 Req2: Register for Examination

Description: The system shall provide a user-friendly "Register for Examination" feature, enabling students to autonomously register themselves for upcoming examinations. This requirement aims to streamline the examination registration process, ensuring that students can easily and accurately enroll in their desired exams.

M2 Req3: View Examination Schedule

Description: The system shall provide students with the capability to access and view their examination schedules. This requirement aims to ensure that students can easily and conveniently access detailed information about their upcoming examinations, including dates, times, venues, and any relevant instructions.

M2 Req4: View Result

Description: The system shall provide students with the capability to access their examination results and, if necessary, apply for re-evaluation of their results. This requirement aims to ensure that students can conveniently view their results and initiate the re-evaluation process for specific exam papers.

M2 Req5: Course Feedback

Description: The system shall provide students with the capability to submit course feedback for the courses they have completed. This requirement aims to gather valuable feedback from students to assess the quality of instruction and improve the educational experience.

Students shall have the option to provide feedback for each course by selecting the respective course entry.

The system shall provide a structured feedback form with fields for rating, comments, and specific feedback categories (e.g., content, instructor effectiveness, materials).

M2 Req6: Generate Examination Schedule

Description: The system shall provide administrators with the capability to generate and manage the examination schedule for the institution. This requirement aims to streamline the scheduling process, ensuring that examinations are organized efficiently and in accordance with academic calendars. Administrators shall have the ability to manually adjust the generated schedule as needed, accommodating special requests, conflicts, or unexpected events. Any manual changes shall be tracked and logged for audit purposes.

M2 Req7: Generate Hall Ticket

Description: The system shall provide the capability to generate hall tickets for registered students.

M2 Req8: Manage Question Paper

Description: The system shall provide administrators with the capability to manage and access question papers prepared by faculty members. This requirement aims to centralize and streamline the question paper management process to ensure the quality and security of examination materials.

M2 Req9: Approve Special Request Consideration

Description: The system shall provide administrators with the capability to approve special requests submitted by students, faculty, or other stakeholders. This requirement aims to facilitate the efficient processing and management of special requests while ensuring transparency and accountability in the approval process.

M2 Req10: Generate Result

Description: The system shall provide administrators with the capability to generate academic results for students based on marks provided by faculty members and assign grades to students according to predefined grading criteria. This requirement aims to ensure accuracy and consistency in the assessment and grading process. The system shall calculate the overall result for each student based on the submitted marks and assessment scores, following predefined calculation formulas and weighting factors.

M2 Req11: Uploading Question Paper by the faculty members

Description: The system shall provide faculty members with the capability to upload and manage question papers for their respective courses, and administrators shall be able to access and review these uploaded question papers. This requirement aims to facilitate the efficient sharing of examination materials while ensuring that administrators have oversight and control. Faculty members shall have the capability to upload question papers for specific courses they are responsible for teaching.

The upload process shall include selecting the course, specifying the examination type (e.g., final exam, mid-term exam), and attaching the question paper document.

M2 Req12: Marks Submission by Faculty Members

Description: The system shall provide faculty members with the capability to submit marks and assessment scores for students enrolled in their respective courses. This requirement aims to streamline the process of recording and sharing student performance data.

The system shall provide an intuitive and user-friendly interface for faculty members to enter marks and assessment scores for individual students enrolled in the selected course.

Marks may include scores for assignments, quizzes, examinations, and other assessment components.

Faculty members shall have the opportunity to review and confirm the accuracy of the submitted marks before finalizing the submission.

Confirmation may involve verifying the marks for each student and making any necessary adjustments.

M2 Req13: Manage Question Paper

Description: The system shall provide administrators with the capability to manage and access question papers prepared by faculty members. This requirement aims to centralize and streamline the question paper management process to ensure the quality and security of examination materials.

2. UML Diagrams

1. Use case Diagram

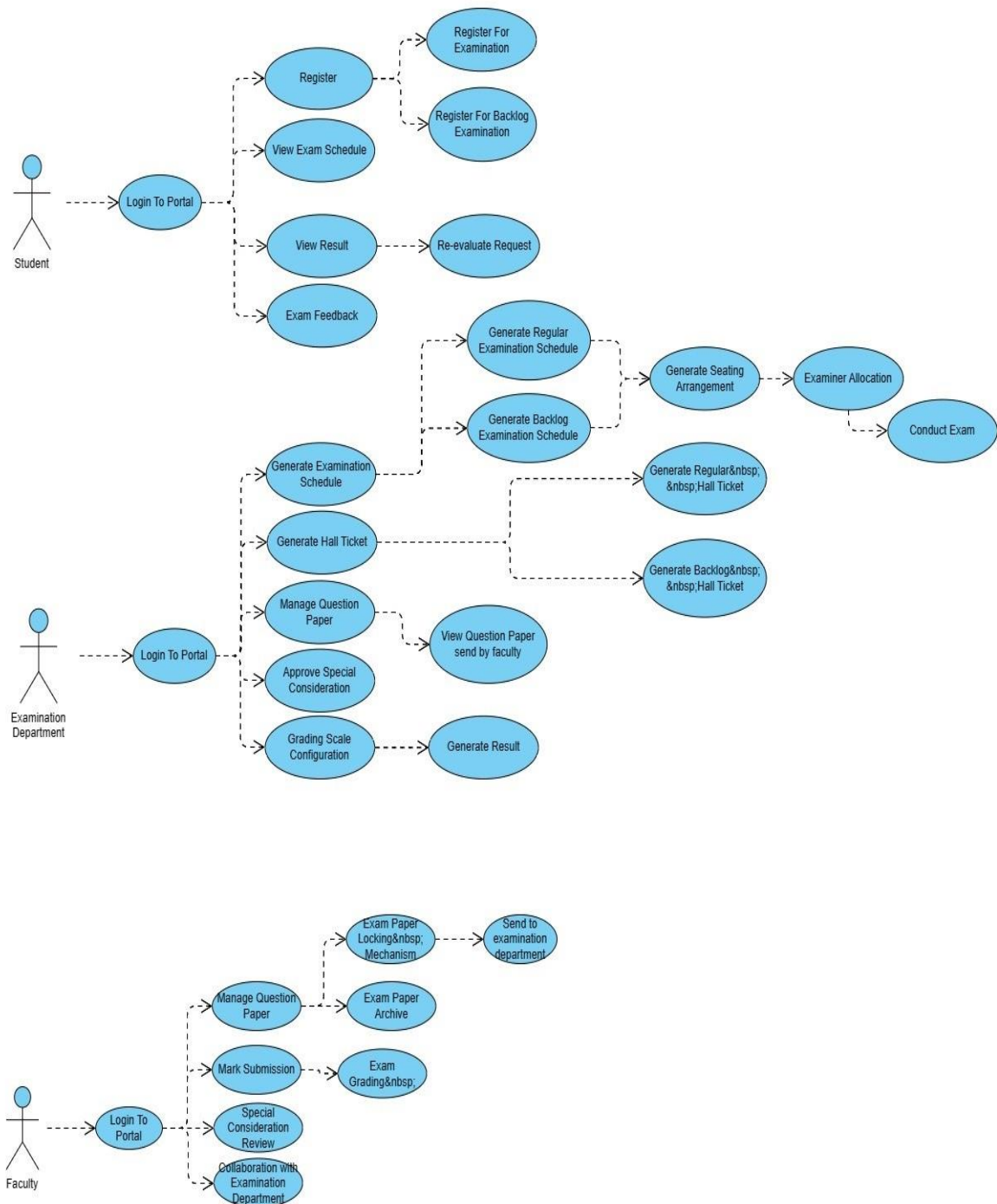


Fig 2.1: Use Case Diagram: Examination Department

2. Activity Diagrams

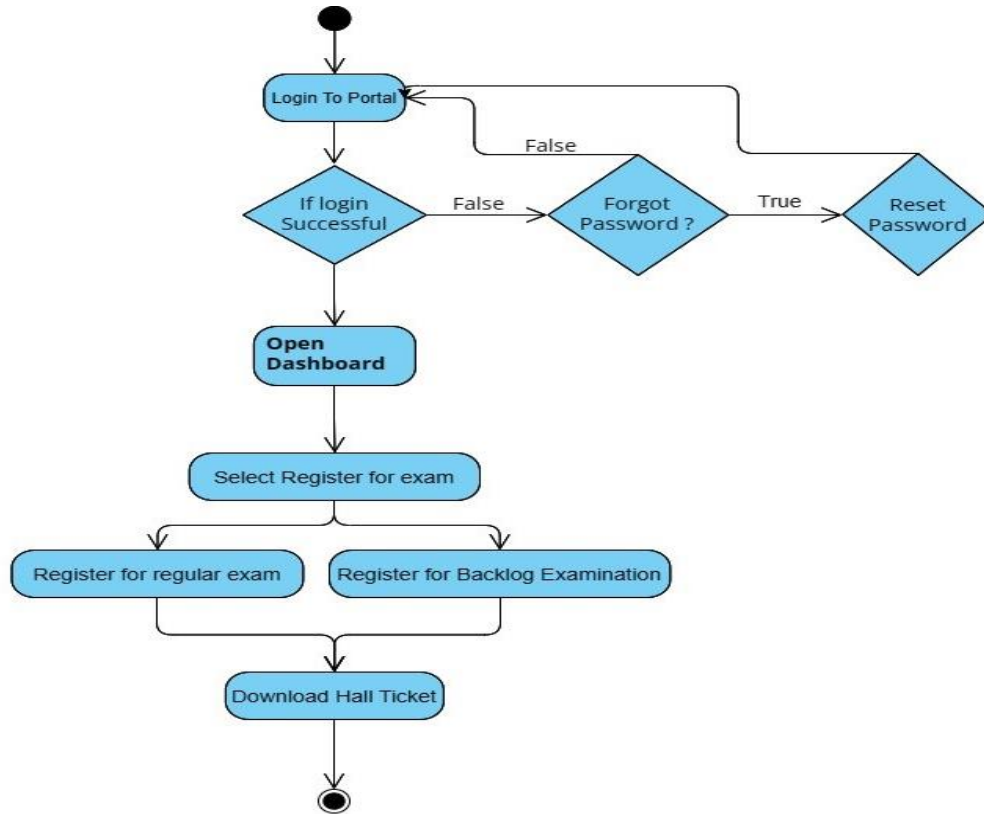


Fig 2.2: Activity Diagram: Download Hall Ticket

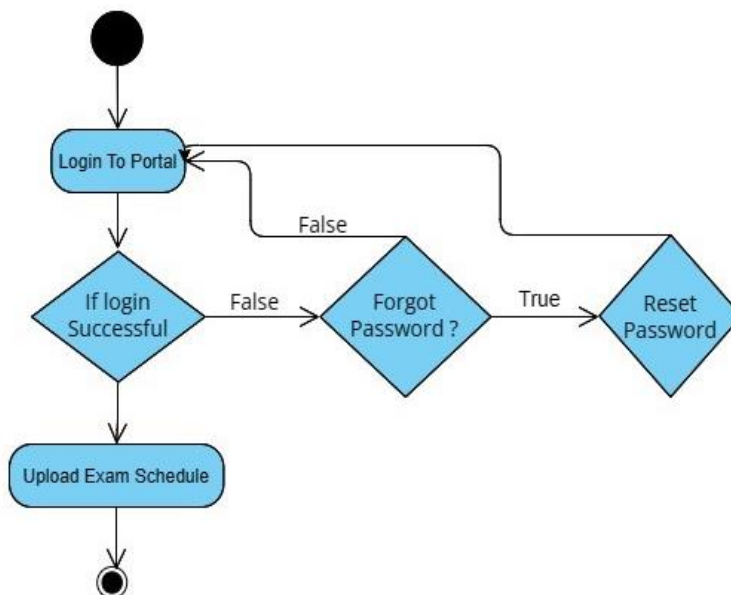


Fig 2.3: Activity Diagram: Exam Schedule

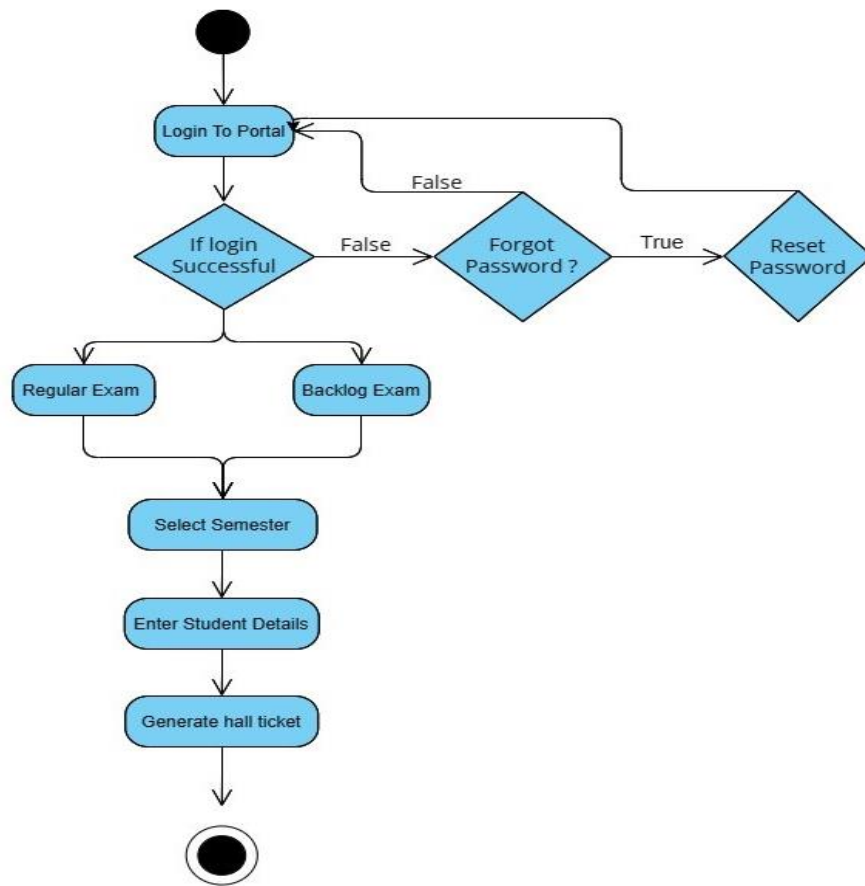


Fig 2.4: Activity Diagram: Generate Hall Ticket

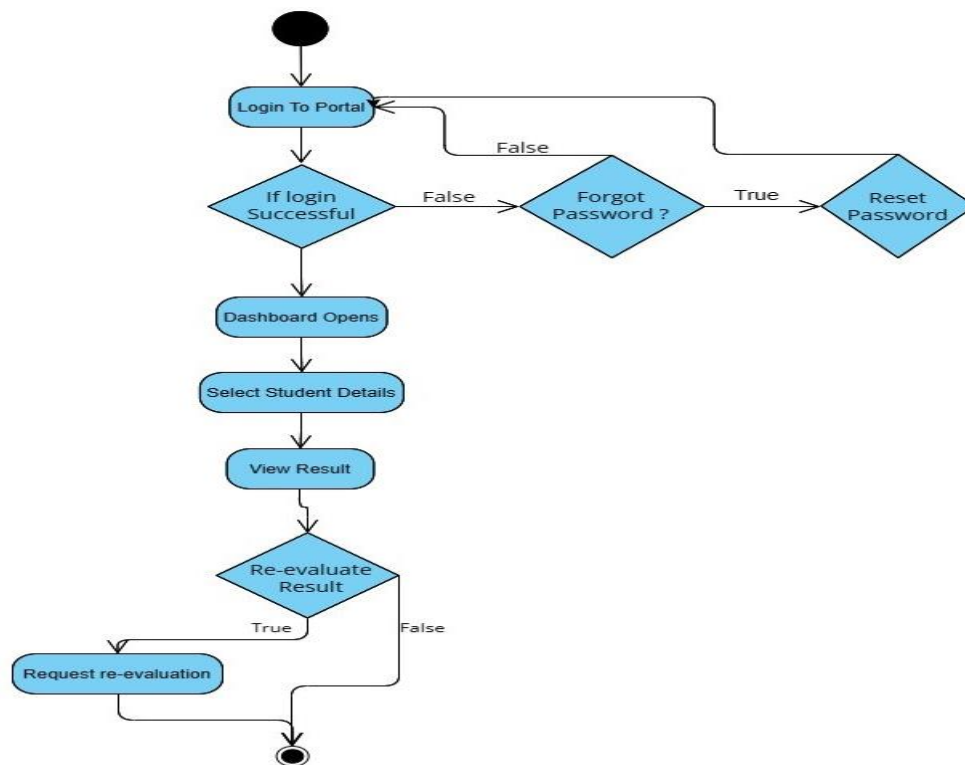


Fig 2.5: Activity Diagram: View Result

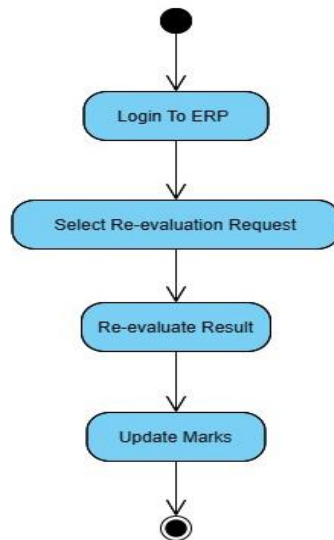


Fig 2.6: Activity Diagram: Re-evaluate Result

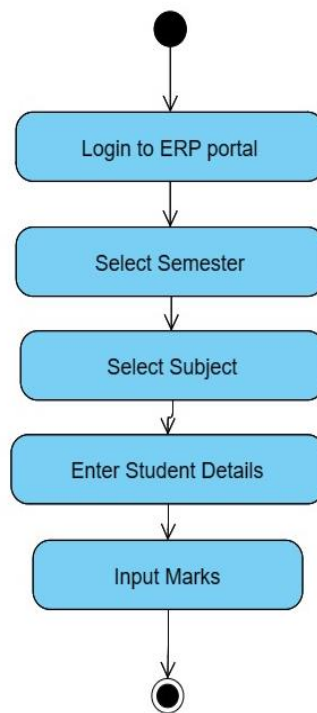


Fig 2.7: Activity Diagram: Mark update

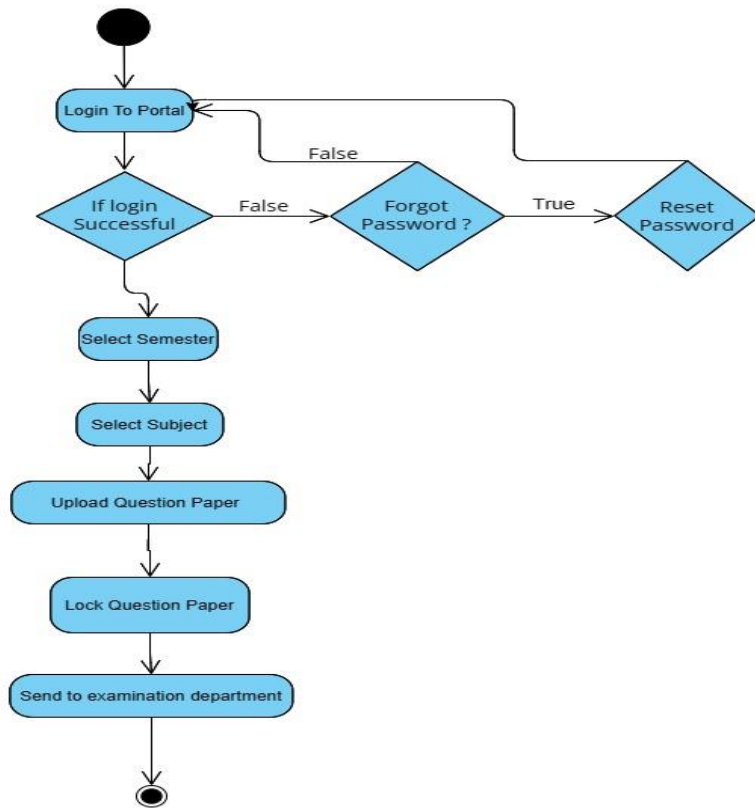


Fig 2.8: Activity Diagram: Question Paper

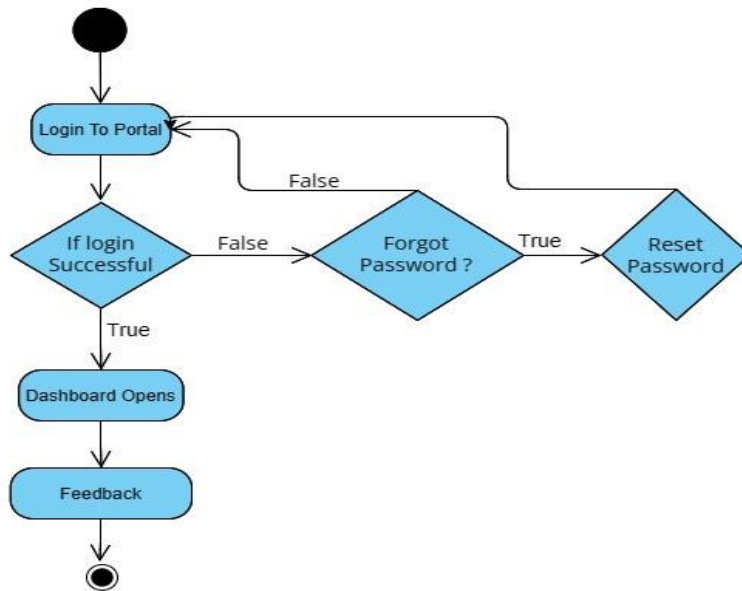


Fig 2.9: Activity Diagram: Feedback

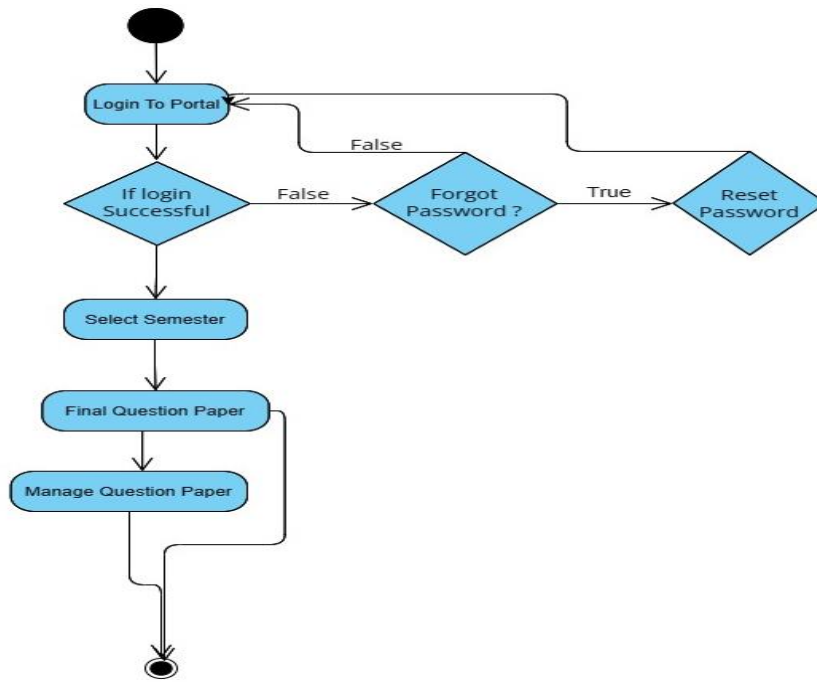


Fig 2.10: Activity Diagram: Manage Question paper:

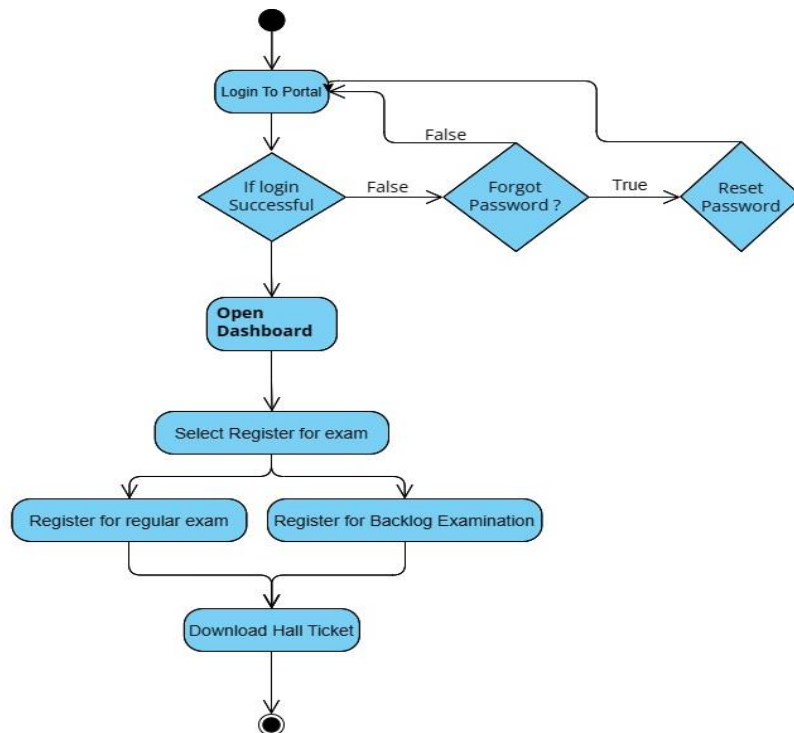


Fig 2.711: Activity Diagram: Download Hall Ticket

3.Sequence Diagram

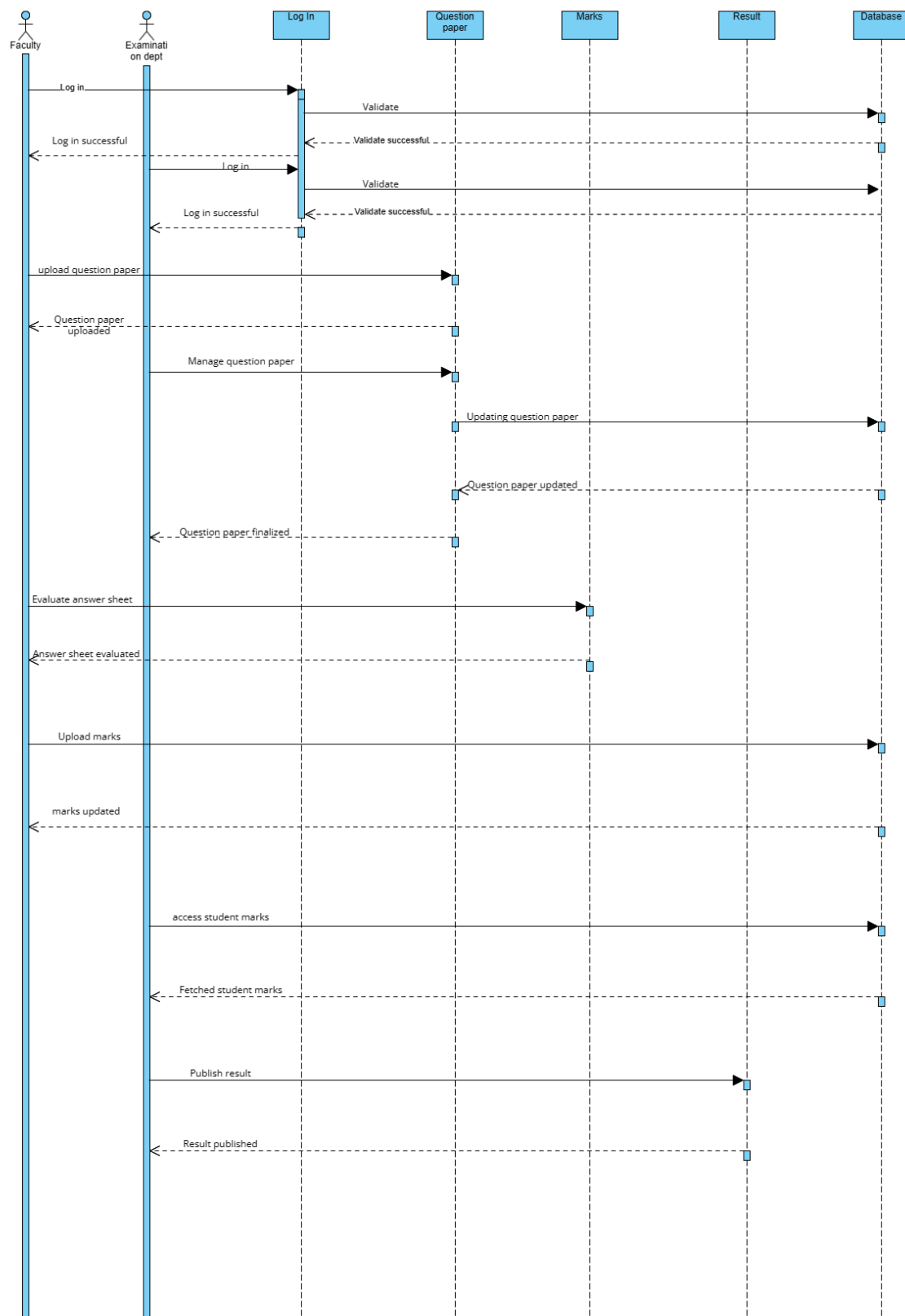


Fig 2.12: Sequence Diagram: Examination Department

4. Class, Aggregation, Association, Superclass- Subclass Diagram

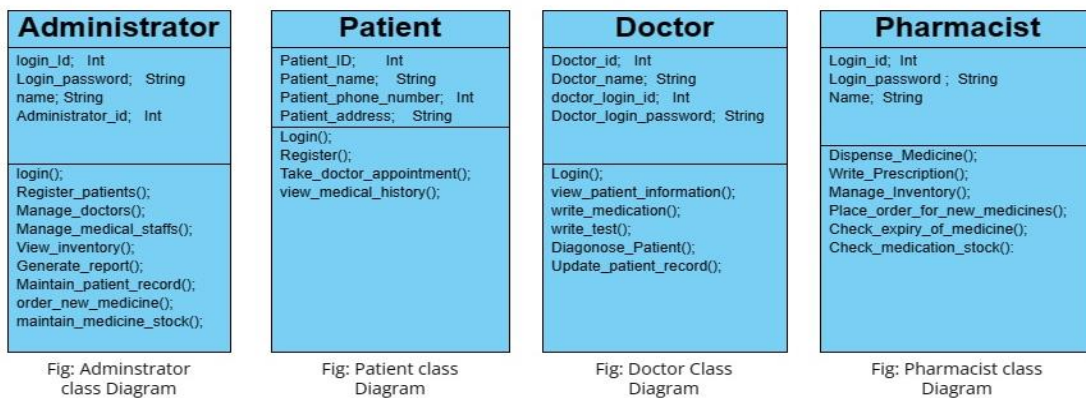


Fig 2.13: Class Diagram

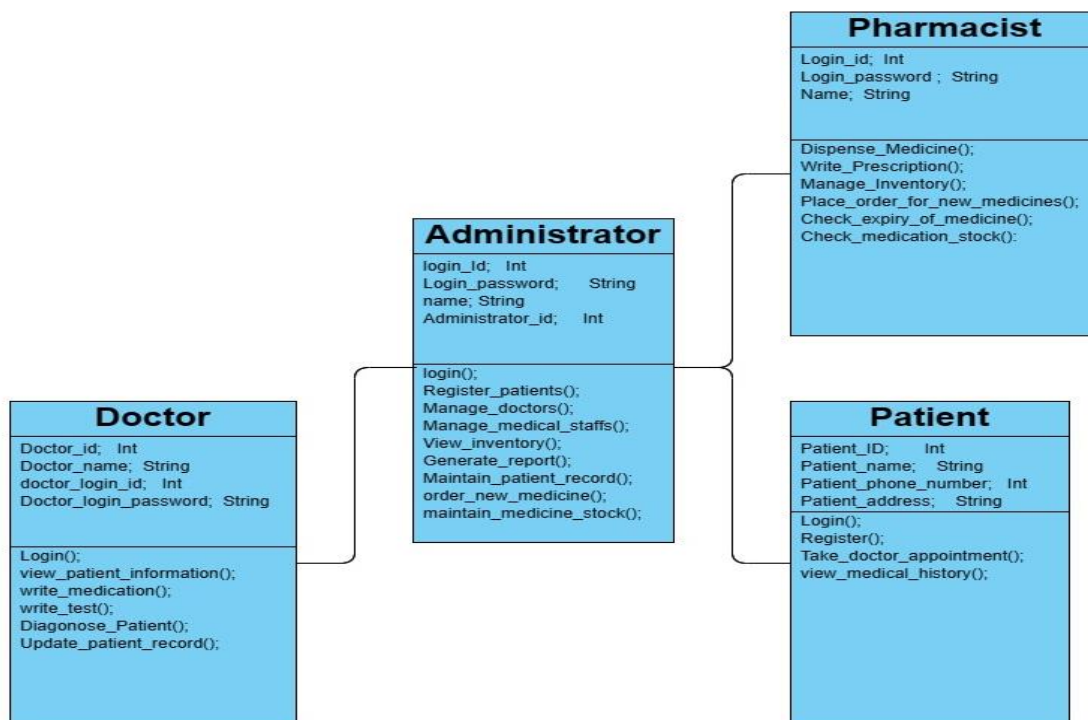


Fig 2.14: Association Diagram

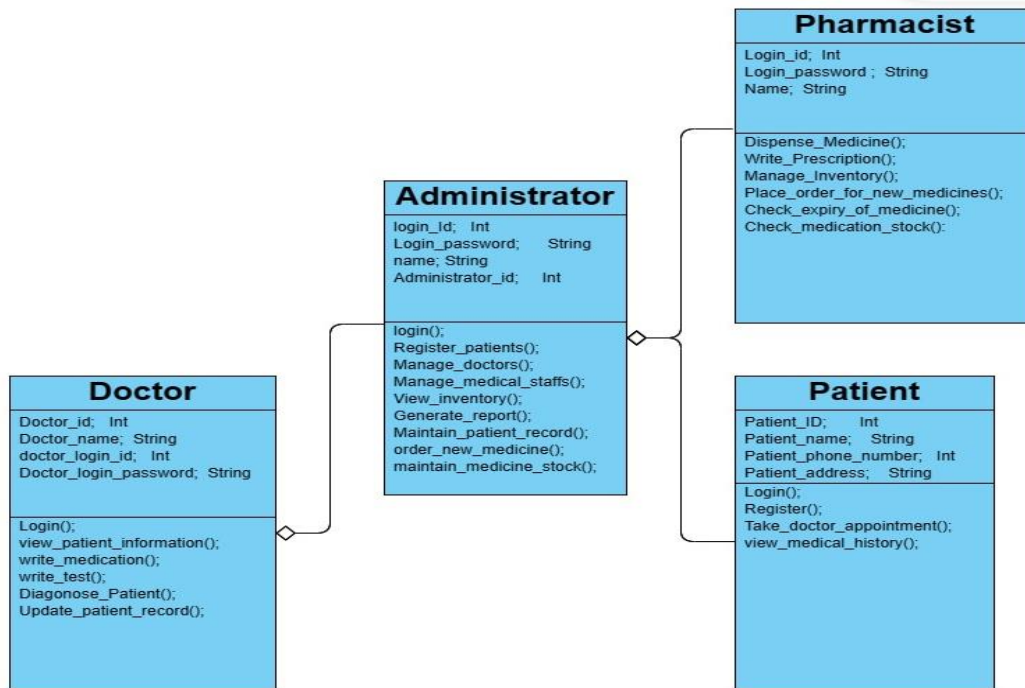


Fig 2.15: Aggregation Diagram

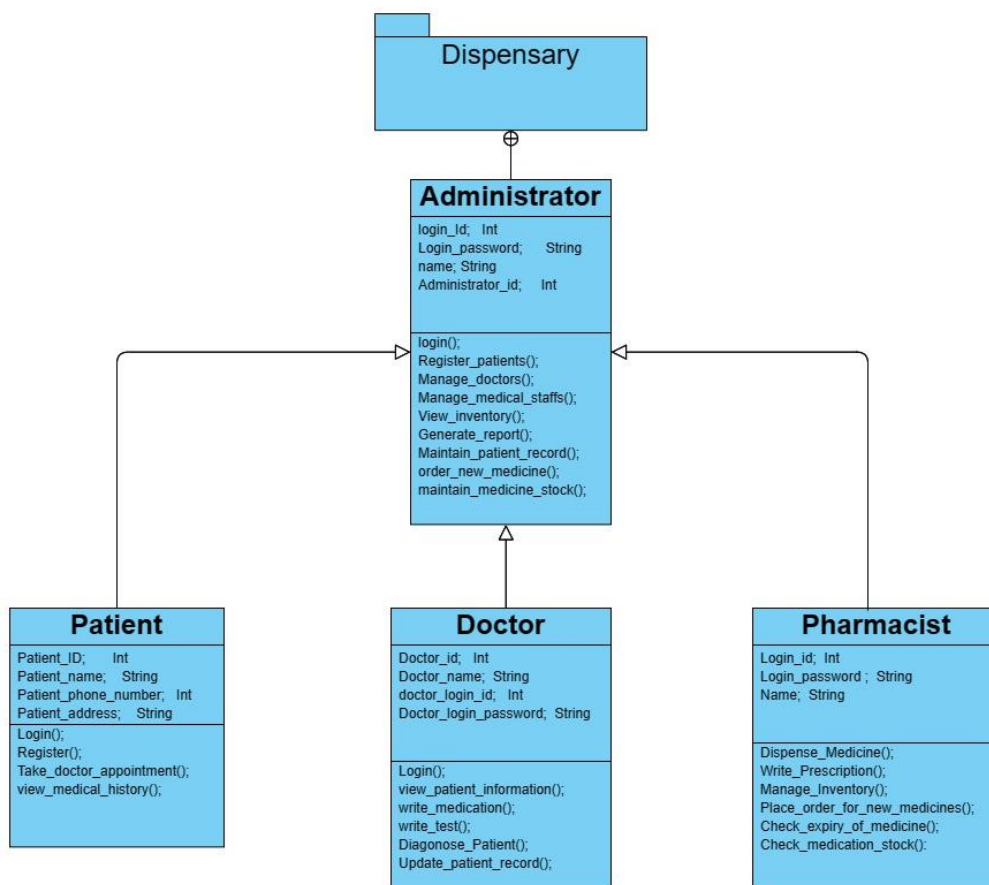


Fig 2.16: Superclass Subclass Diagram

MODULE 3: DISPENSARY

1. Requirements and Descriptions

M3 Req1: Register Patient

Description: The system shall provide administrators with the capability to register patients at the college dispensary. This requirement aims to streamline the patient registration process, allowing for efficient management of health records and medical care within the college.

M3 Req2: Doctor Schedule Management

Description: The system shall provide administrators with the capability to manage the schedules of doctors within the college's medical facility. This requirement aims to ensure efficient and organized allocation of doctor appointments and availability. The system shall maintain a list of doctors or healthcare professionals affiliated with the college's medical facility.

For each doctor, administrators shall have access to their schedules, including working hours, availability, and appointment slots.

M3 Req3: View Inventory

Description: The system shall provide authorized users with the capability to view the current inventory of the college's dispensary. This requirement aims to enable users to access real-time information about available medical supplies and ensure efficient inventory management.

The system shall categorize and list inventory items, including medications, medical supplies, equipment, and any other relevant items available in the dispensary.

Each inventory item shall be associated with specific details, such as name, quantity, expiration date (if applicable), and unit of measurement. Users shall be able to view real-time information about the availability of each inventory item, including the current quantity in stock.

M3 Req4: Order New Medicine

Description: The system shall provide authorized users, such as dispensary administrators or designated staff, with the capability to place orders for new medicines and medical supplies required for the college's dispensary.

This requirement aims to ensure the availability of essential healthcare resources. The system shall maintain a catalogue of available medicines and medical supplies, including item names, descriptions, quantities, pricing, and supplier information.

The catalogue may also include information about product availability and lead times.

M3 Req5: Generate Patient Report

Description: The system shall provide authorized users, such as healthcare professionals or administrative staff, with the capability to generate medical reports for patients based on their health records within the college's dispensary. This requirement aims to facilitate the creation of comprehensive and organized patient reports for medical documentation and communication.

M3 Req6: Generate Patient Report

Description: The system shall provide authorized users, such as healthcare professionals or administrative staff, with the capability to maintain and manage patient records within the college's dispensary. This requirement aims to ensure the accurate and organized documentation of patient health information.

Users shall be able to enter and update patient health information, including medical history, allergies, current medications, and past diagnoses.

Data entry shall be facilitated through user-friendly forms and interfaces.

M3 Req7: Doctor Appointment

Description: The system shall provide patients with the capability to schedule appointments with doctors through the system. This requirement aims to streamline the appointment booking process, improve patient experience, and ensure efficient doctor-patient interactions. Patients shall have the capability to browse and select from a list of available doctors or healthcare professionals based on specialization, availability, or location.

Doctor profiles shall provide information about their qualifications and available time slots. Patients shall be able to choose a preferred date and time for their appointment with the selected doctor.

The system shall display available time slots, preventing overbooking and conflicts.

M3 Req8: View Medical History

Description: The system shall provide registered patients with the capability to view their own medical history through the system. This requirement aims to empower patients with easy access to their health records for personal reference and informed decision-making.

Patients shall have the capability to access detailed medical records, which may include:

- Diagnosis information
- Treatment history
- Medications prescribed
- Laboratory test results
- Radiology reports
- Clinical notes and observations

M3 Req9: View Patient Details

Description: The system shall provide authorized doctors and healthcare professionals with the capability to view patient details through the system. This requirement aims to facilitate efficient patient care, enable informed medical decisions, and enhance the doctor-patient interaction. Doctors shall have the capability to search and select specific patients from a list of their assigned or relevant patients.

Patient selection may involve searching by patient name, medical record number, or other identifying information.

The system shall display basic patient demographic information, including the patient's full name, date of birth, contact details, and identification data.

M3 Req10: Medicine Dispensing and Prescription Writing

Description: The system shall provide authorized pharmacists with the capability to dispense medicine and write prescriptions through the system. This requirement aims to streamline the medication dispensing process, ensure accurate prescription records, and enhance patient safety.

M3 Req11: Inventory Management and Medicine Ordering

Description: The system shall provide authorized pharmacists with the capability to manage inventory and place orders for new medicines with administrators. This requirement aims to ensure efficient inventory control, timely replenishment of medicines, and seamless communication between pharmacists and administrators.

The system shall provide pharmacists with an overview of the current inventory, including available medicines, quantities, and expiration dates.

Pharmacists shall have the capability to place orders for new medicines when the inventory reaches predefined reorder points or when specific medicines are low in stock.

Orders may include details such as the name of the medicine, quantity, and preferred supplier/vendor.

2. UML Diagrams

1. Use case Diagram

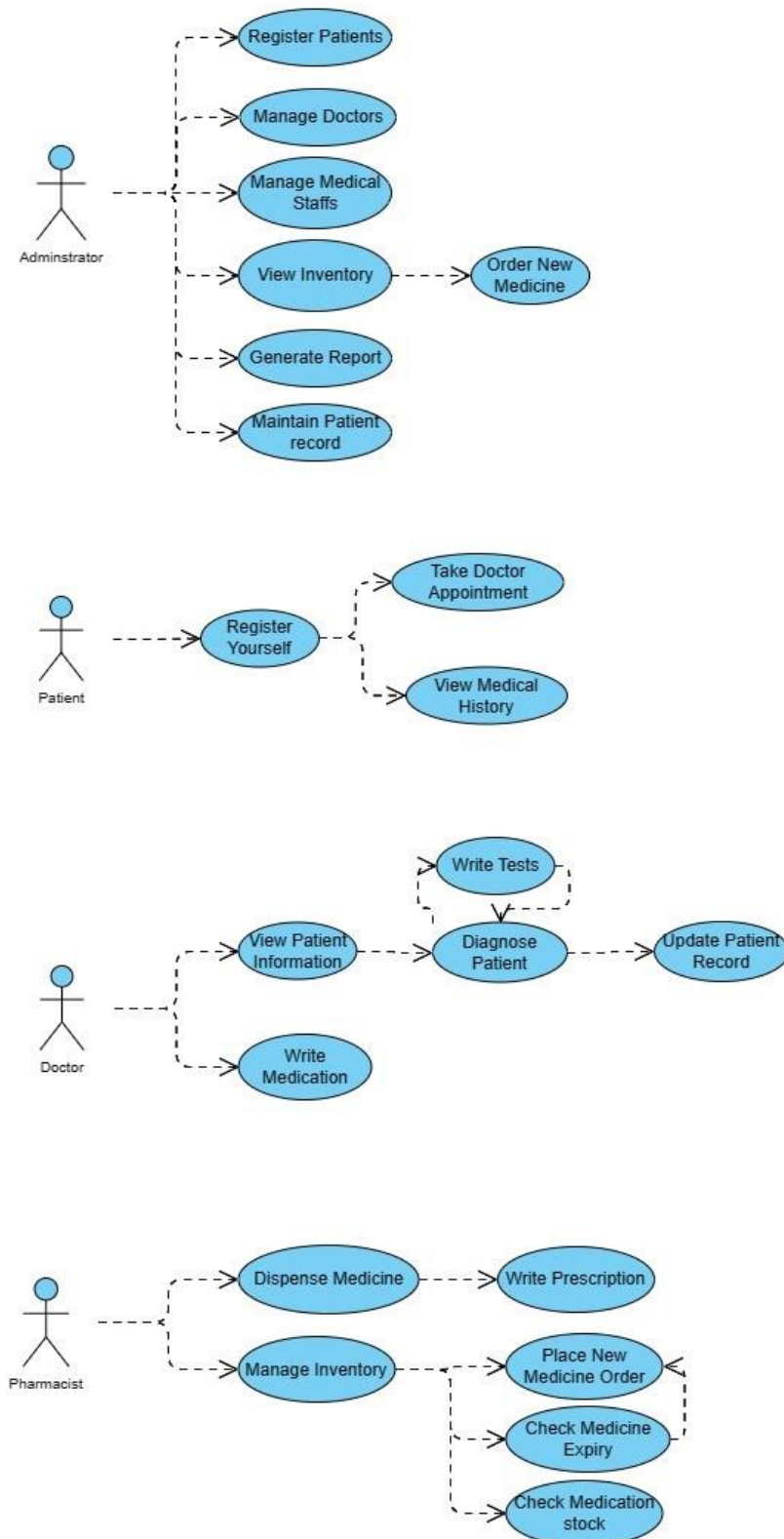


Fig 3.1: Use Case Diagram: Dispensary

2. Activity Diagrams

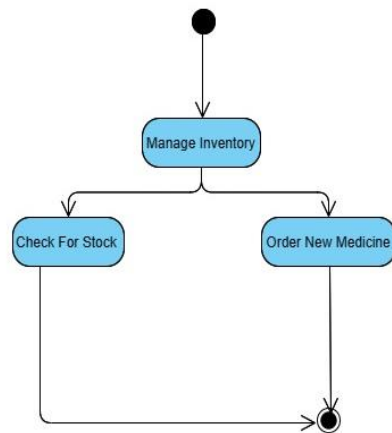


Fig 3.2: Activity Diagram: Order new medicine

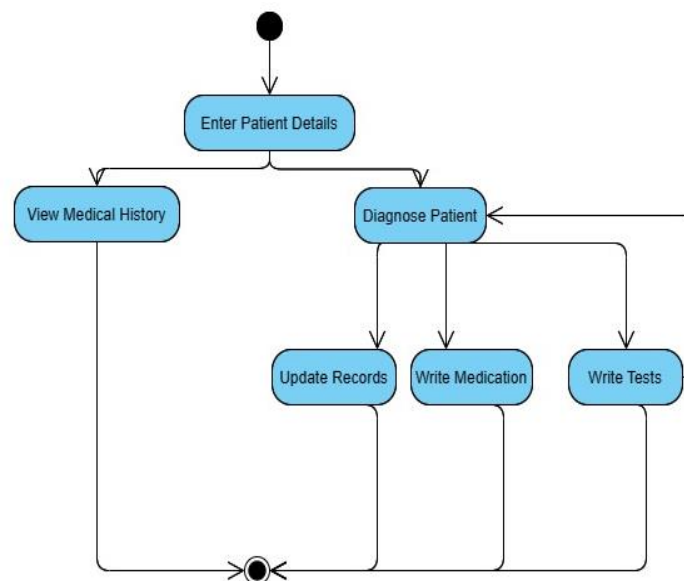


Fig 3.3: Activity Diagram: Patient Details

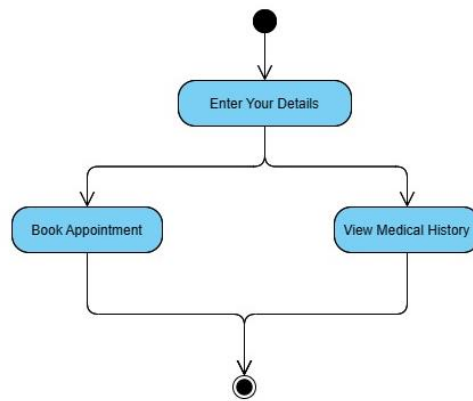


Fig 3.4: Activity Diagram: Examination Department

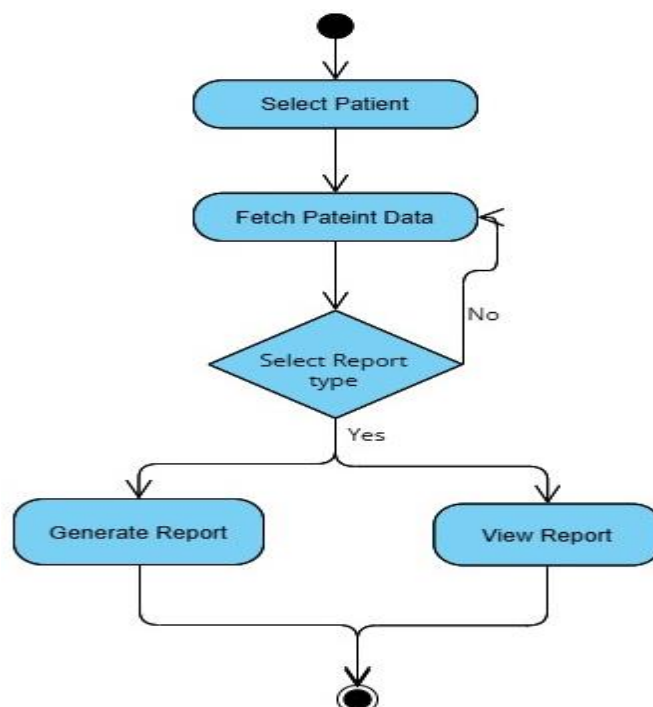


Fig 3.5: Activity Diagram: Report

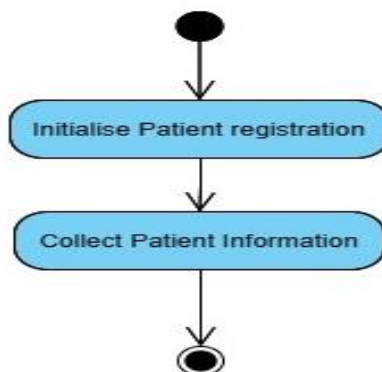


Fig 3.6: Activity Diagram: Patient Information

Fig 3.7: Activity Diagram: Prescription

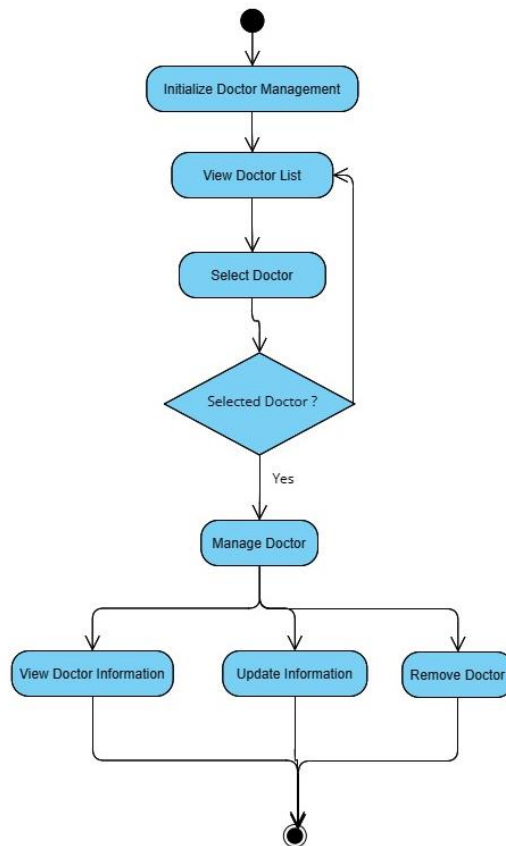


Fig 3.8: Activity Diagram: Doctor Management

2. Sequence Diagram

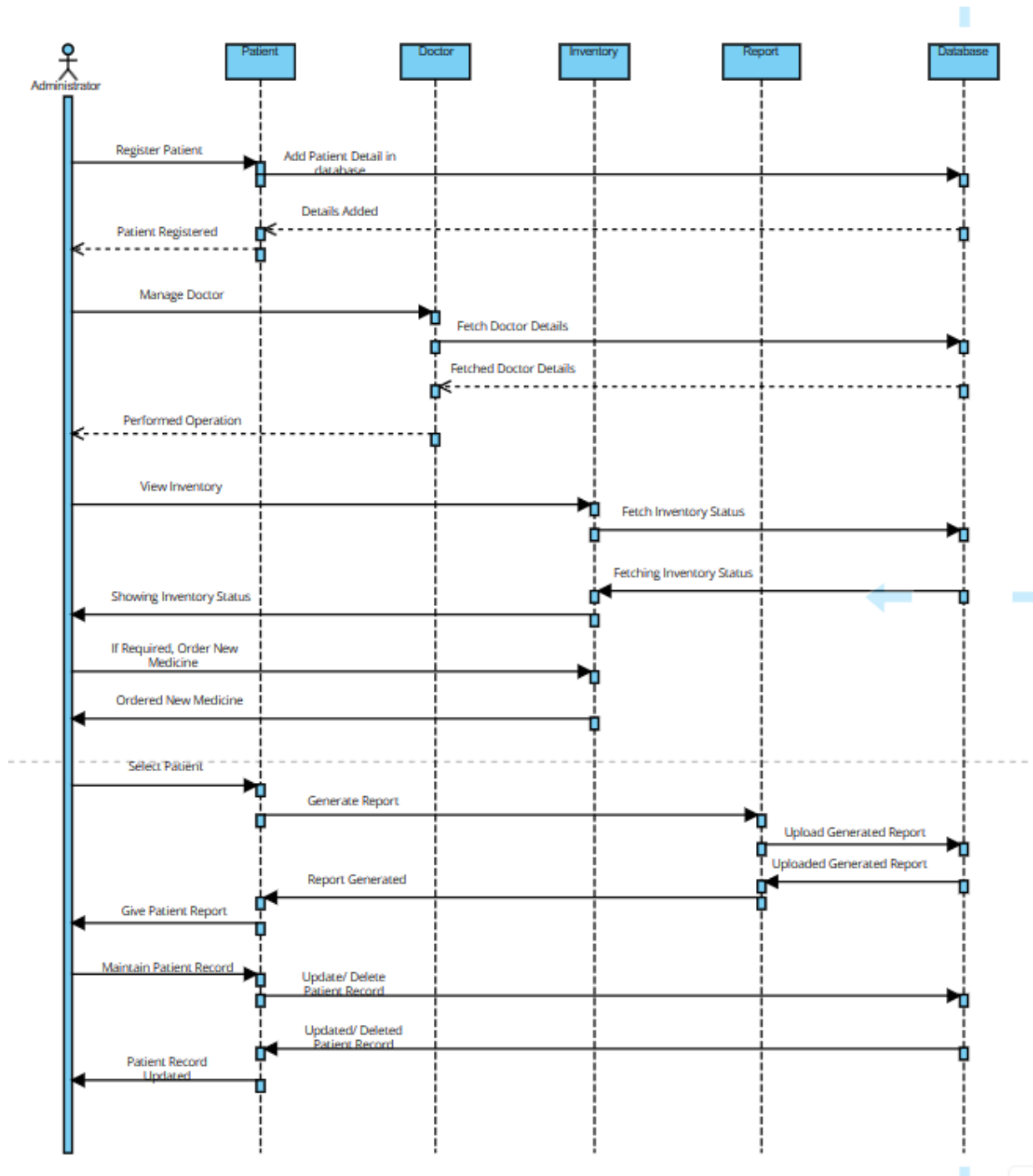


Fig 3.9: Sequence Diagram: Dispensary Administrator

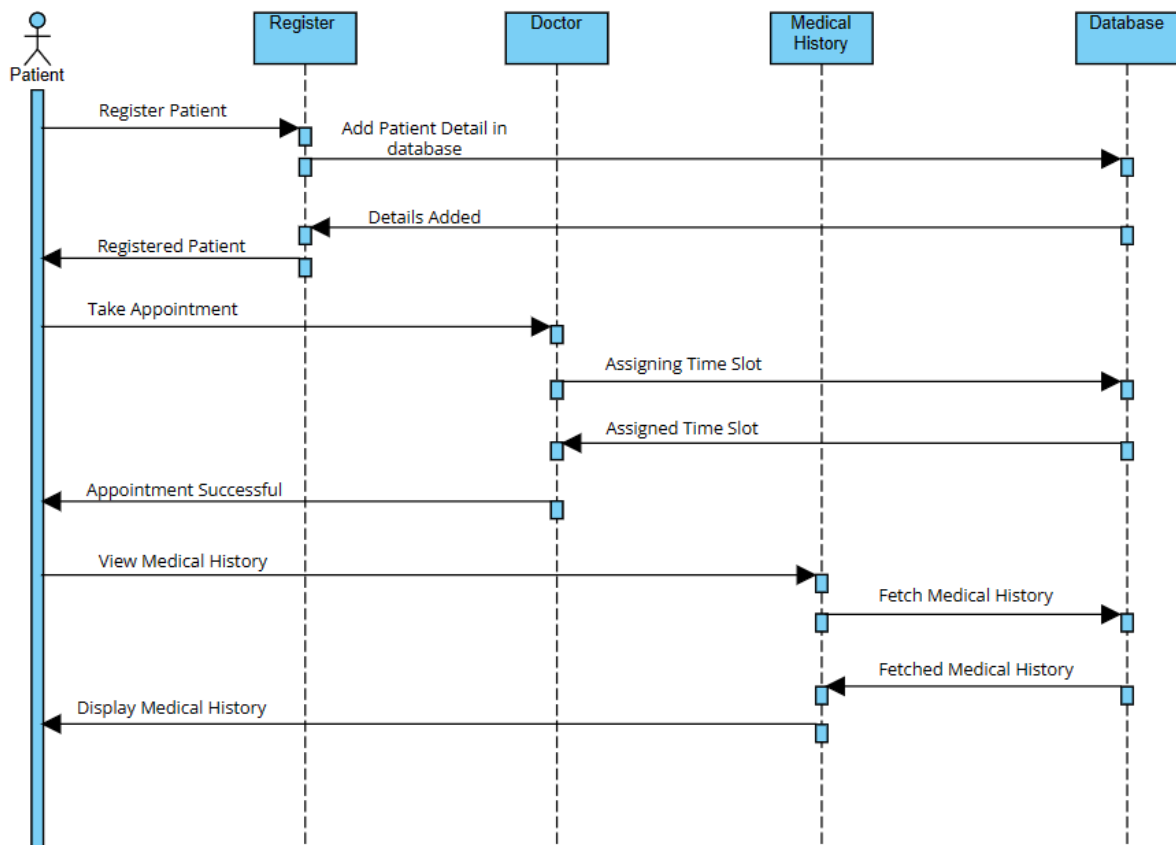


Fig 3.10: Sequence Diagram: Patient Detail

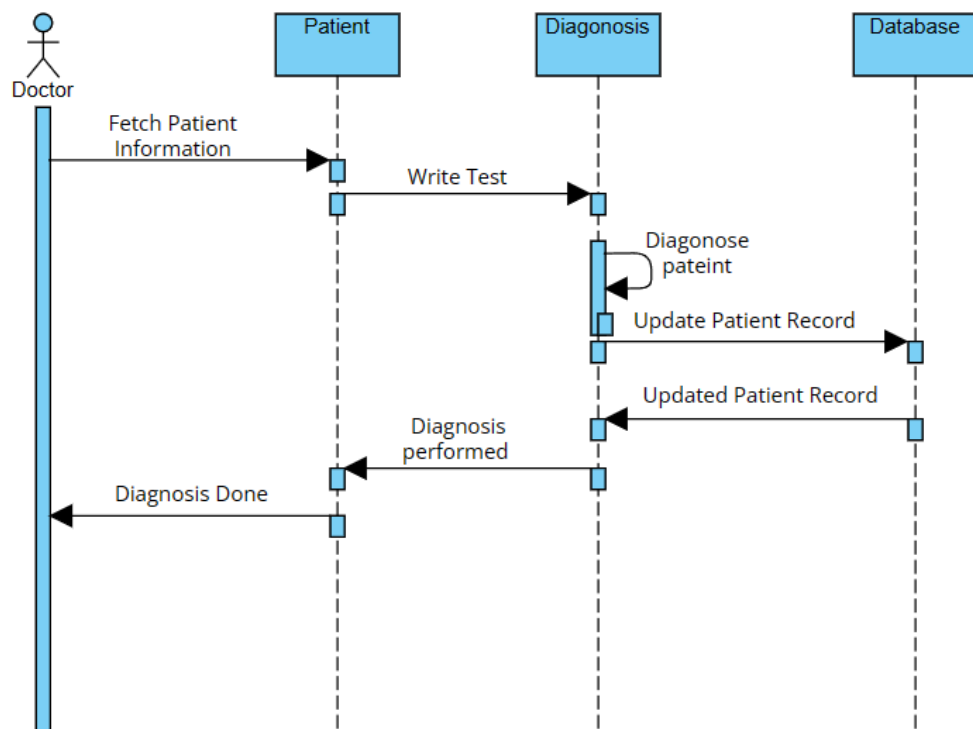


Fig 3.11: Sequence Diagram: Doctor

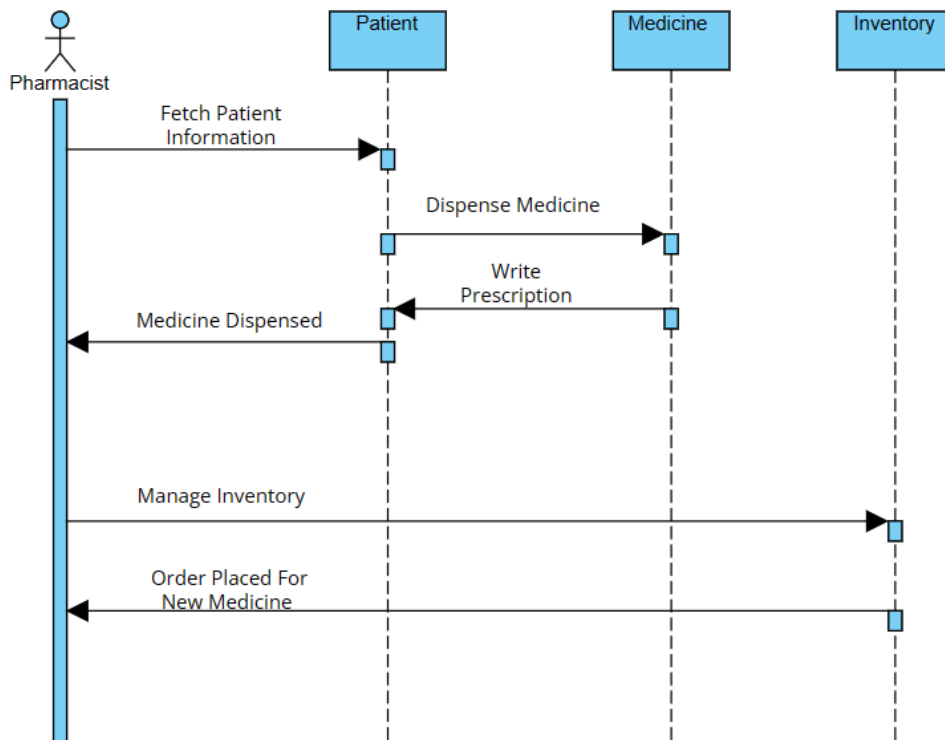


Fig 3.12: Sequence Diagram: Pharmacist

4. Class, Aggregation, Association, Superclass- Subclass Diagram

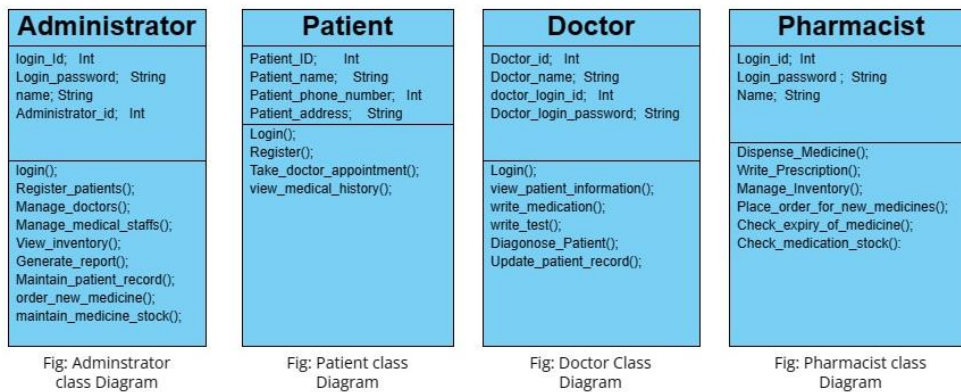


Fig 3.10: Class Diagram

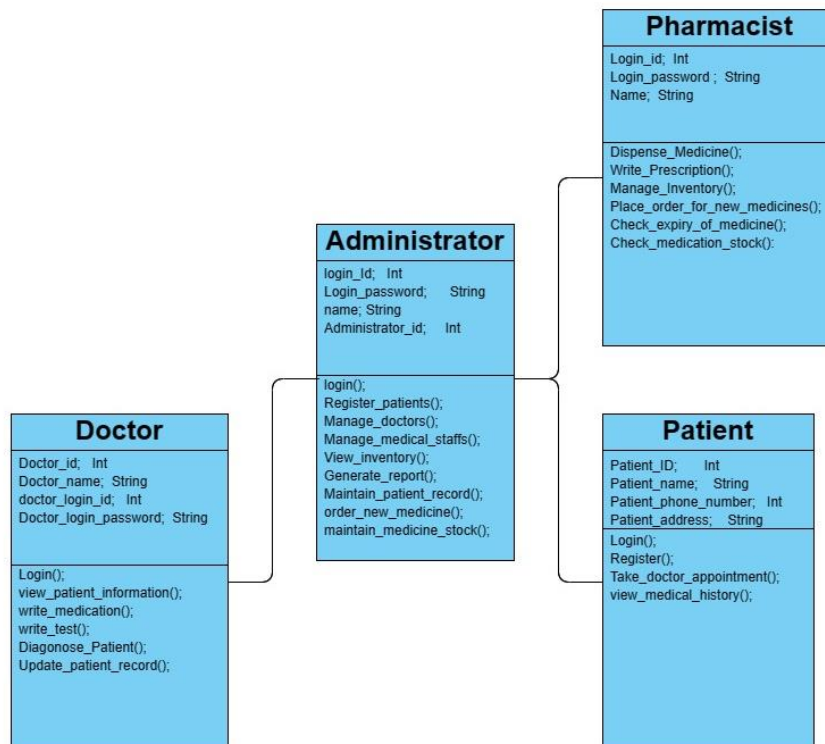


Fig 3.11: Association Diagram

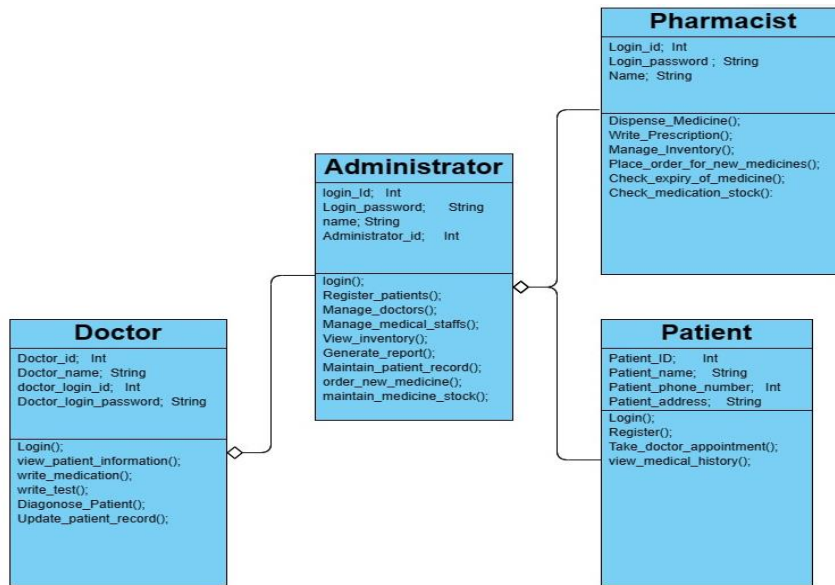


Fig 3.12: Aggregation Diagram

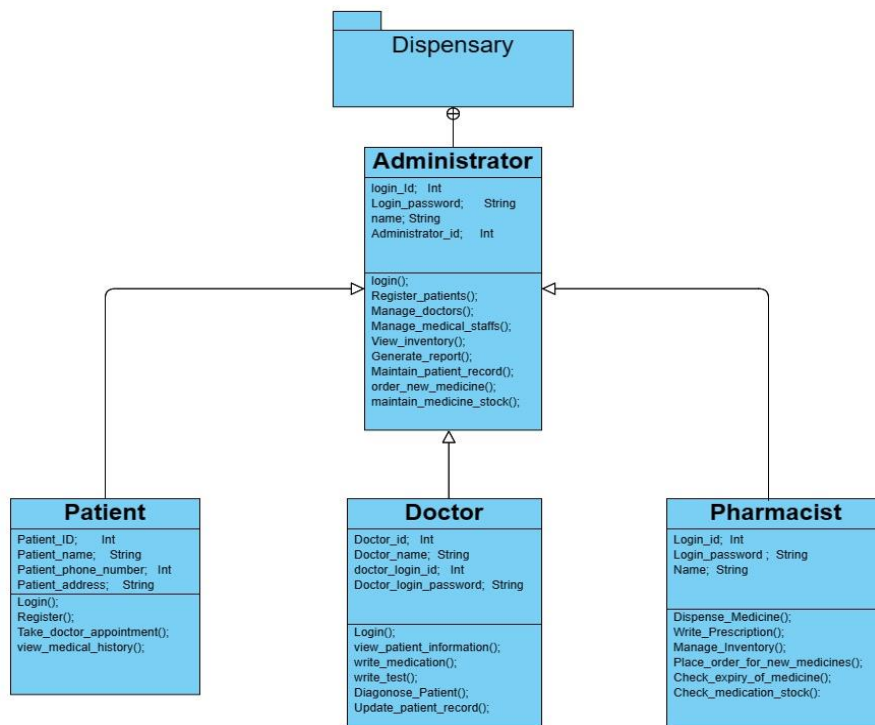


Fig 3.13: Superclass Subclass Diagram