Birla Institute of Technology,Mesra

SOFTWARE ENGINEERING LAB ASSIGNMENT 01

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ROLL NO. →BTECH/60017/19

COMPUTER SCIENCE ENGINEERING 5TH SEMESTER

Module selected for Computerization of B.I.T Mesra - Deoghar Campus

1. Computer Science Engineering Module (CSE Module)
2. Examination Module
3. Boys Hostel Management Module
4. Planning and Development Module

Q1. Write Requirements for the four selected modules for Computerization of B.I.T Mesra - Deoghar Campus

Answer:-

(1) Computer Science Engineering Module (Cse Module)

- Student Details
- Cource Structure for Cse Department
- Fetching of Data
- Assigning Professors/Teachers to a particular cource or subject
- Class scheduling
- Syllabus
- Minor/In Depth Specialization of students
- Attendence of Students
- Mentor Assigning to students for personal support and help
- Class room allotment
- User interface

(2) Examination Module

- Syllabus according to CBCS Guidelines
- Question Paper Preperation
- Invigilator or professor allotment for each exam hall
- Exam Room and seating arrangement process
- Answer Key Declaration
- Portal for handling unfair means during examination (Black Dot)
- Date Modification
- Correction Of Papers

- Result Declaration
- GPA calculation for particular Semester
- Distribution of Report Card
- Rexamination of students who failed to clear the examination or caught for unfair means for Summer or running semester.

(3) Boys Hostel Management Module

- Boys Student Detail For Every Years (1st ,2nd ,3rd and 4th)
- Room Allotment
- Warden assigning to different hostels
- Complain Portal for every Hostel
- Mess Management
- Room Cleaning Management
- Security Management
- Common room Meeting management
- Store room Equipment details
- Hostel entry and exit Permission
- Anti Ragging complain

(4) Planning and Development Model

- Fetching data and information
- College Development group
- Discussion forum
- Budget allotment
- Supervising committee
- Labour Cost details
- Design team
- Material cost
- Time Scheduling
- Final Report Submission
- Feedback Form distribution for the review

Q2. Write the Full Description of Requirements of Selected Four Modules for Computerization of B.I.T Mesra - Deoghar Campus

Ans:

For the Computerization of BIT Mesra Deoghar Campus → Selected Four Modules are Computer Science Module ,Examination Module, Boys Hostel Module and Planning and Development Module. We will create a common database for software login/register and entry of different data related to the modules specified above

Common Requirements are :-

- Data base Management System -> This will be achieved by using Mysql data base workbench where the relational model will be created and data will be saved accordingly
- User Interface for Input/Output -> Proper user interface should be developed to take data from the user and give desired output to the user.
- Common Access –> Common access will be provided to two modules ie, Computer Science module and Examination Module or we can create a Boys Hostel Management System with a slight reference to Hotel management database and user interface
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(I) Computer Science Module (CSE MODULE)

- ✓ Student Details -> In this we will be needing the details of the student who have taken admission in BIT Mesra -Deoghar Campus in Computer Science Department
- ✓ Cource Structure -> For this we require the cource structure of all the semester of Computer Science Department.
- ✓ Fetching Data -> In this a proper Data base has to created so that efficient queries can be written so that the appropriate data can be fetched from the database
- ✓ Assigning Professors/Teachers -> For each cource subject different professor are so this requirement needs the data of the professors teaching in the college so that they can be assigned to their particular subject specification
- ✓ Class scheduling -> Class Scheduling is important so a proper time table has to schedule for the class of the CSE Student to be conducted efficiently.
- ✓ Minor/In Depth Specialization of students -> This requirement is needed for those students who are in 5^{th} semester of their college and given an option of In depth specialization but on one condition that is having an aggregate GPA of 8.0 or above from 1^{st} to 4^{th} semester.
- ✓ Attendence Of Students -> This data is needed to keep a check of student who are attending classes properly and efficiently.
- ✓ Mentor Assigning to students -> This requirement is needed so that every student is provided with a guide who can help them when in need.Mentors are actually the professors
- ✓ Class Room Allotment -> Which class room should be scheduled to the student has to be maintained that's why are proper data must be there for its developments

(II) Examination Module

- ✓ Syllabus according to CBCS Guidelines ->This details is necessary because without the syllabus examination is incomplete so this one of the most important requirement of Examination module
- ✓ Question Paper Preperation -> This requirement is needed to so that the admin knows to prepare the question paper along with few other professors and faculty members.
- ✓ Invigilator or professor allotment for each exam hall -> This requirement is important because for the smooth conduction of semester exams a supervisor or invigilator is allotted to every exam hall .
- ✓ seating arrangement process -> Seating Arrangements of the students has to be given so that they can give exam in the same place until all the semester papers are over . This reduces the confusion of the students that where to sit everyday before exam
- ✓ Answer Key Declaration -> This requirement is important because answer not only help the student where they were wrong during the exam but also gudes the professors who corrects the papers
- ✓ Unfair Means -> This requirement although non essential but still holds a huge impact in the examination process .If by any means a student is caught cheating then he/she might have to leave the exam and he/she end up failing in that subject.
- ✓ Correction of Papers -> This requirement is for the faculty members only
- ✓ Result Declaration -> After correction and evaluation result declaration portal has to be there so that student can go through their pros and cons and do well in the coming semester.
- ✓ GPA Calculator -> This is needed for the student who wants to get the knowledge about how they performed in the examination.
- ✓ Re-examinations Portal -> This requirement is for the students who failed or were medically unfit to be present in the exam.They will get another chance during the running semester or summer but for this they need to write an application for it and re-examination portal help them with it.

(III) Boys Hostel module

- ✓ Student Details -> In this we will be needing the details of the student(boys) who have taken admission in BIT Mesra -Deoghar Campus .
- ✓ Room Allotment -> This requirement is needed because for the next 4 years in the college the room number allotted to the student will be the formost location of him.
- ✓ Warden Assigning -> Every Hostel has a supervisor or we can say Warden who looks after the welfare and betterment of student in the hostel .
- ✓ Complain portal -> This requirement is necessary because any problem or unconfortibility is not tolerated in the college hostel , its has to resolved as soon as possible and for this there is portal for complains where student can file their complain and the superviser makes sure that every complains are entertained.
- ✓ Mess Management -> Boys Hostel and not talking about mess ,it cant happen.This requirement is the most important because student expect that their college will provide them good food to eat. This is ensured by the mess manager and cooks and staffs helping them.
- ✓ Room Cleaning -> This comes under complain portal but still it has a separate significance in the hostel . This ensures regular cleaning and hygine in the hostel so that student staying their don't face any difficulty.
- ✓ Security management ->This management for the hostel comes into power when the students left their rooms and went back to their home town for few days.
- ✓ Common Room meeting and Store room Equipment -> These are non essential requirements but still helpful to have it because common room is for meeting organization and equipments in the store room needed to be listed in the database for future reference.
- ✓ Hostel entry and Exit Permission -> This is essential for the hostel management to look after the presence and absence of student in and out of college during the night time because any misfortune to any student will at the end of the have to faced by the college official. So proper data base of entry and exit of students is necessary so that no student gets lost or end up in some problem which cant be resolved
- ✓ Anti Ragging Complain -> Any Ragging seen or done in hostel is informed to the anti ragging committee so that student don't get panicked while interacting with seniors .If someone is caught doing ragging then the circumstances has to be faced by the student himself .

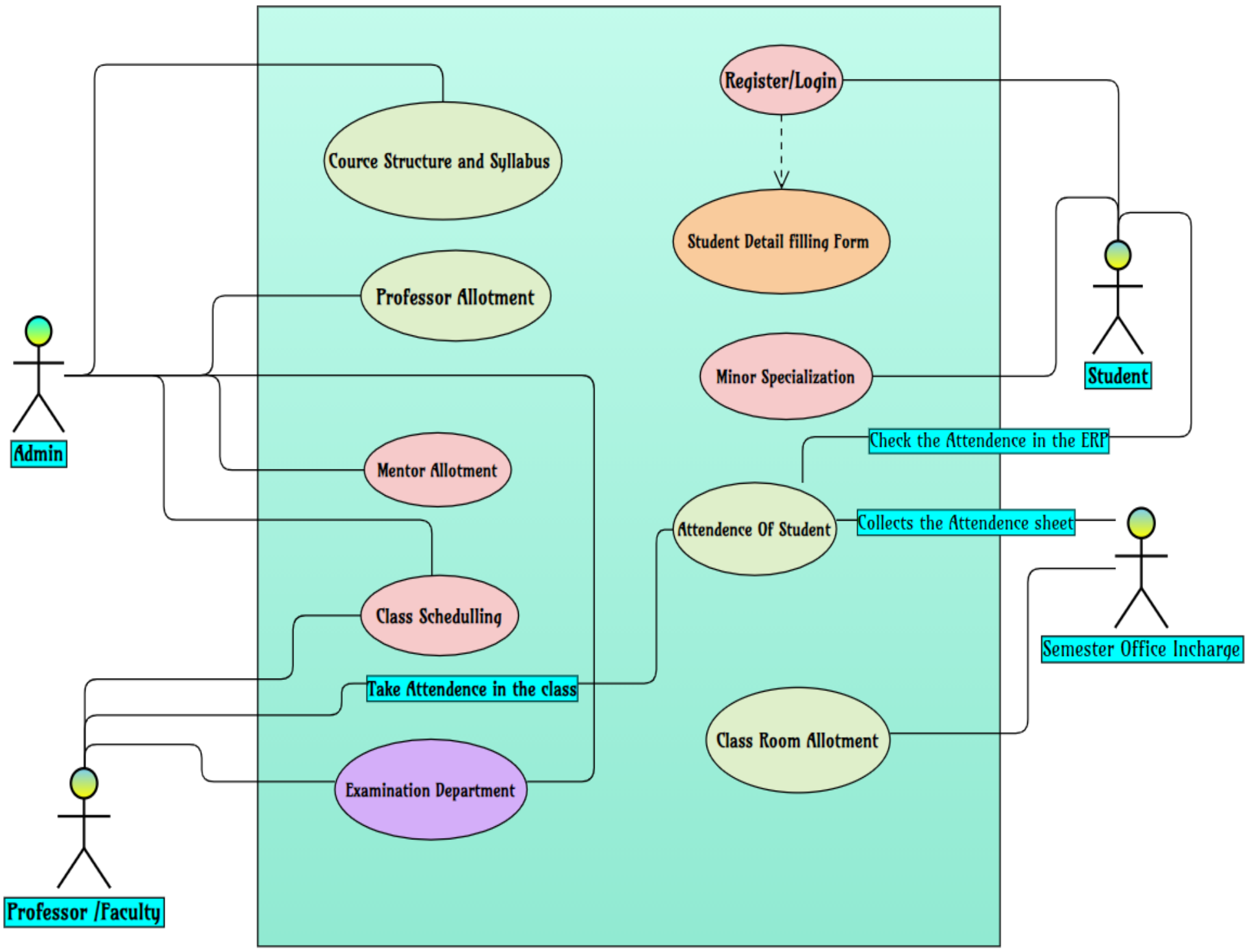
(IV) Planning and Development Module

- ✓ Fetching data And information -> This Requirement is the most important one as it deals with the data base fetching which helps the users to get a prior knowledge of the software
- ✓ College Development Group -> This group is important because this groups will intailize the development of the college infrastructure.
- ✓ Discussion Forum -> This is the part when the wing Adminitrator discusses the does and don't which needs to be done for the development of the college planning and architecture.This discussion should lead to a proper base for the beginning.
- ✓ Budget Allotment -> The budget is very important in terms of requirement as it says how much costing is needed for the infrastructure rebuilding and making new one focusing on labour cost, material cost and time scheduling because we all know that time is money/
- ✓ Design team ->This team will lead to the blueprint of the infrastructure building .Designers will make sure that the blueprint made is sufficient under the budget
- ✓ Supervising Committee -> This committee does the watch work so that everything goes well .They are the instructors , engineers who help each other fulfil the requirement of the college development. They try hard to make things under control so as to avoid any chaos.
- ✓ Final Report Submission -> This requirement is the summary of what is going to happen to the wing in future project. This report simplifies all the does and don't and has least margin of error.
- ✓ Feedback Form -> This form are for the student and faculty member who will at the end of the will be there in the college, so feedback has to be given by them .

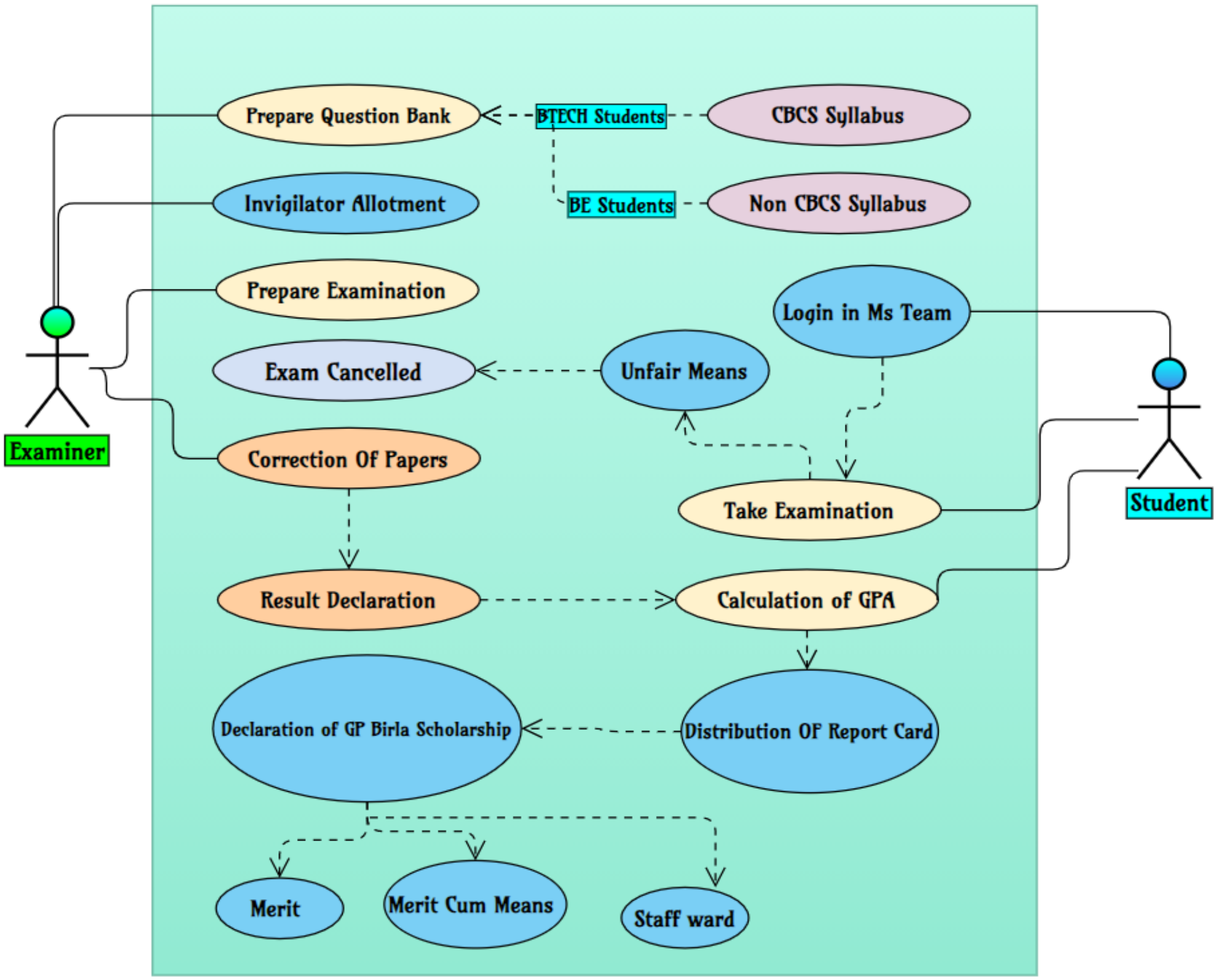
Q3. Use-case diagram for the selected module using visual paradigm software tool for the project titled 'Computerization of B.I.T Mesra - Deoghar Campus

Ans:-

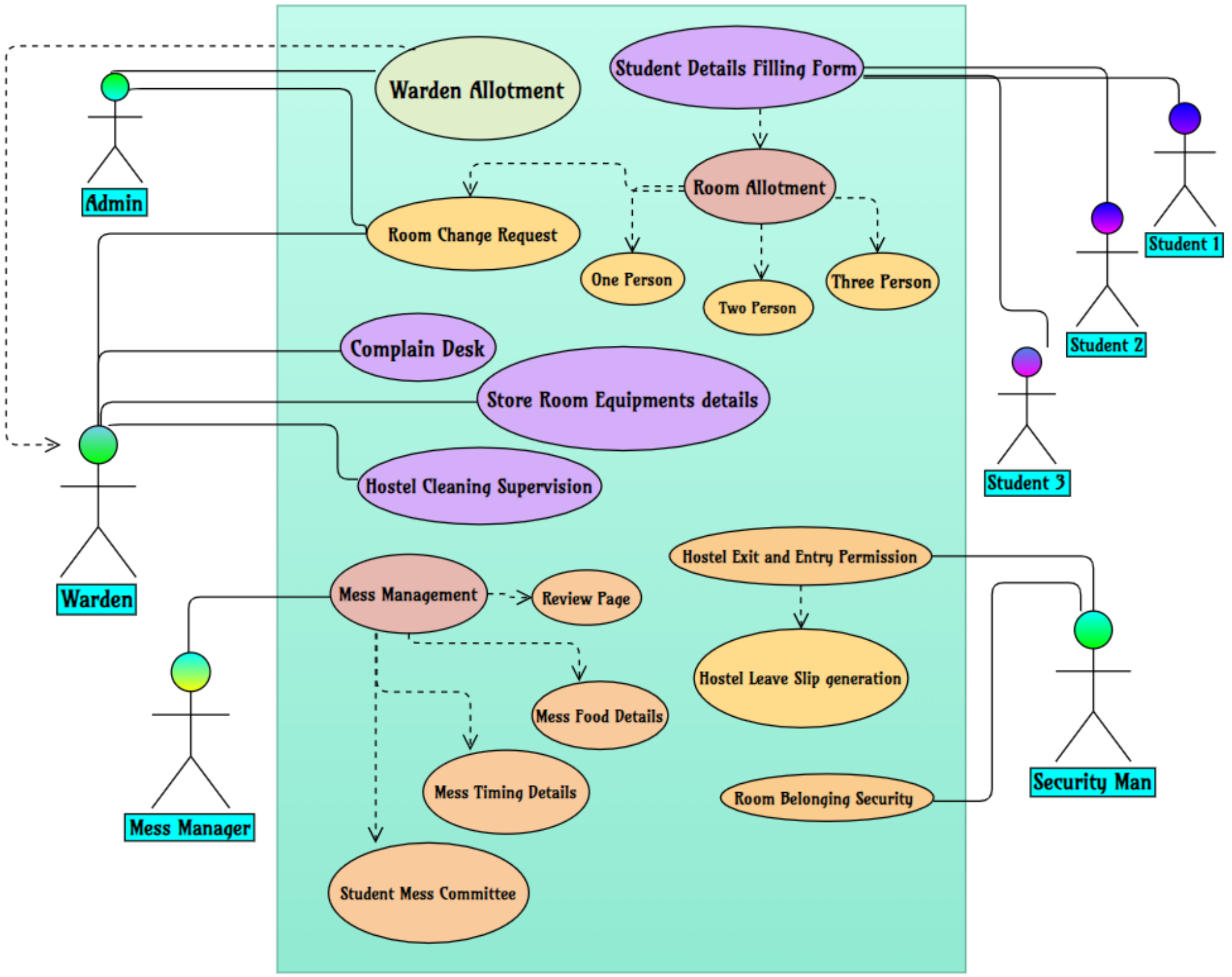
(I) Use Case Diagram of Computer Science Module (CSE Module)



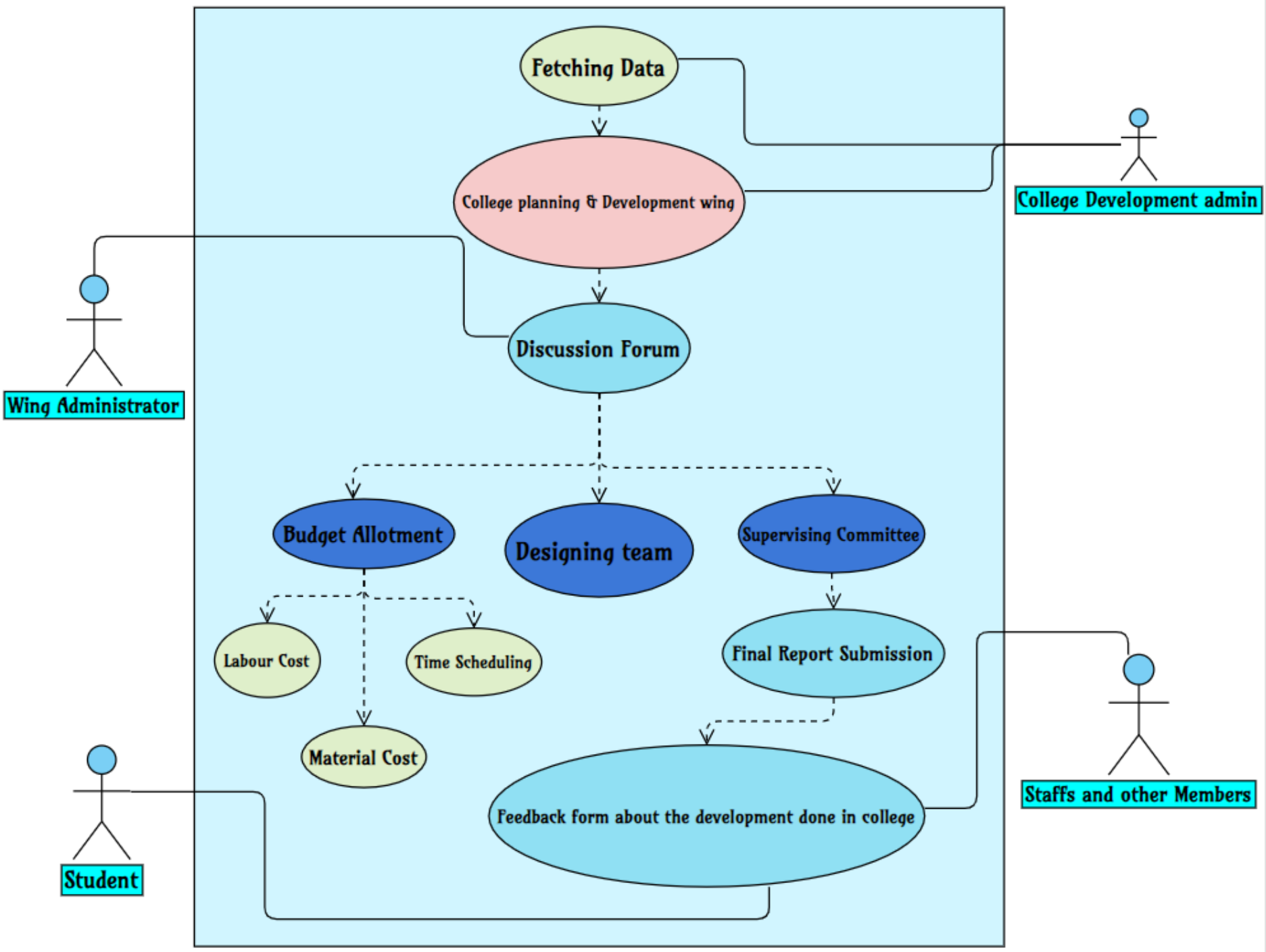
(II) Use Case Diagram of Examination Module



(III) Use Case Diagram of Boys Hostel Module

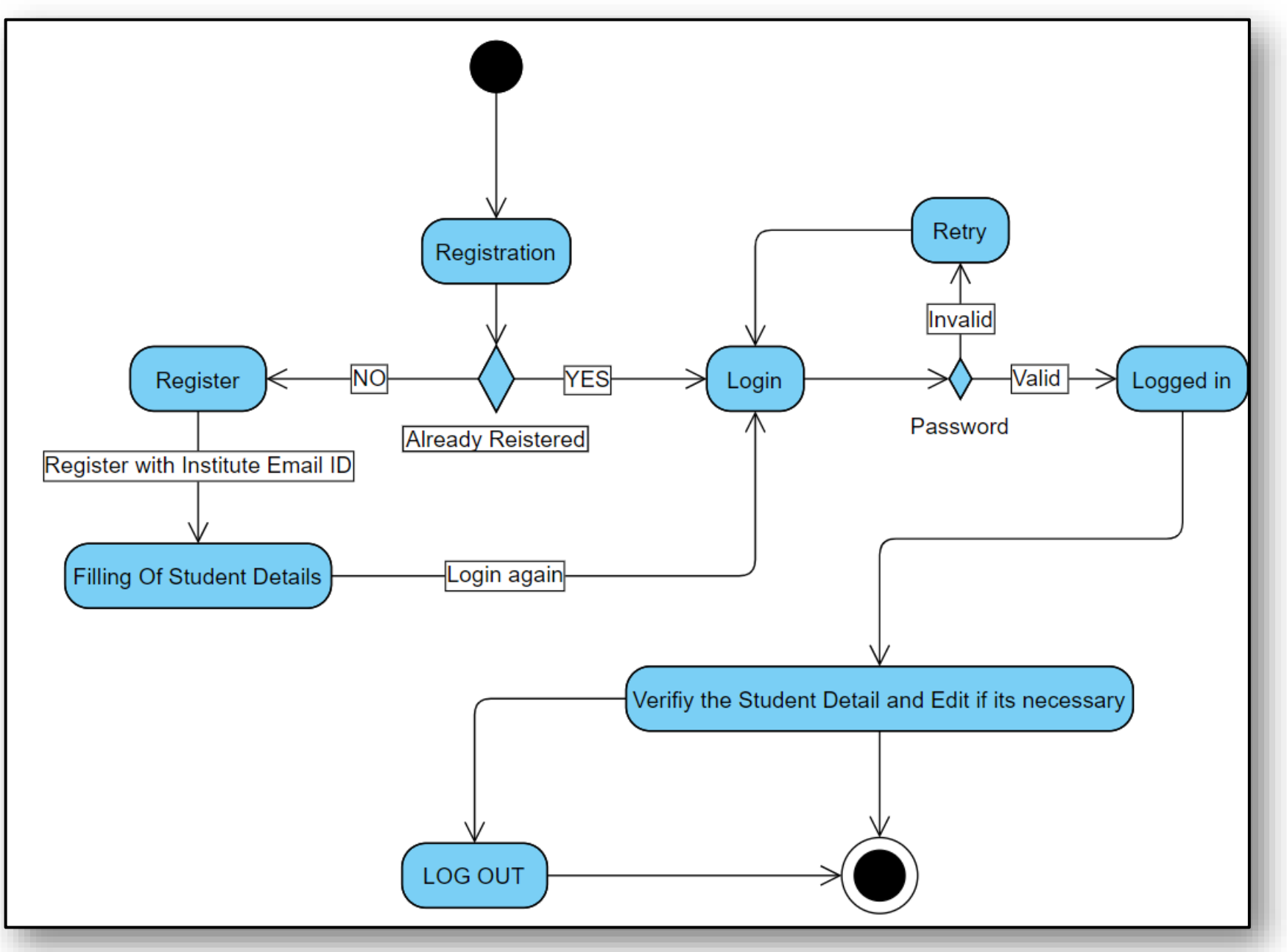


(IV) Use Case Diagram of Planning and Development Module

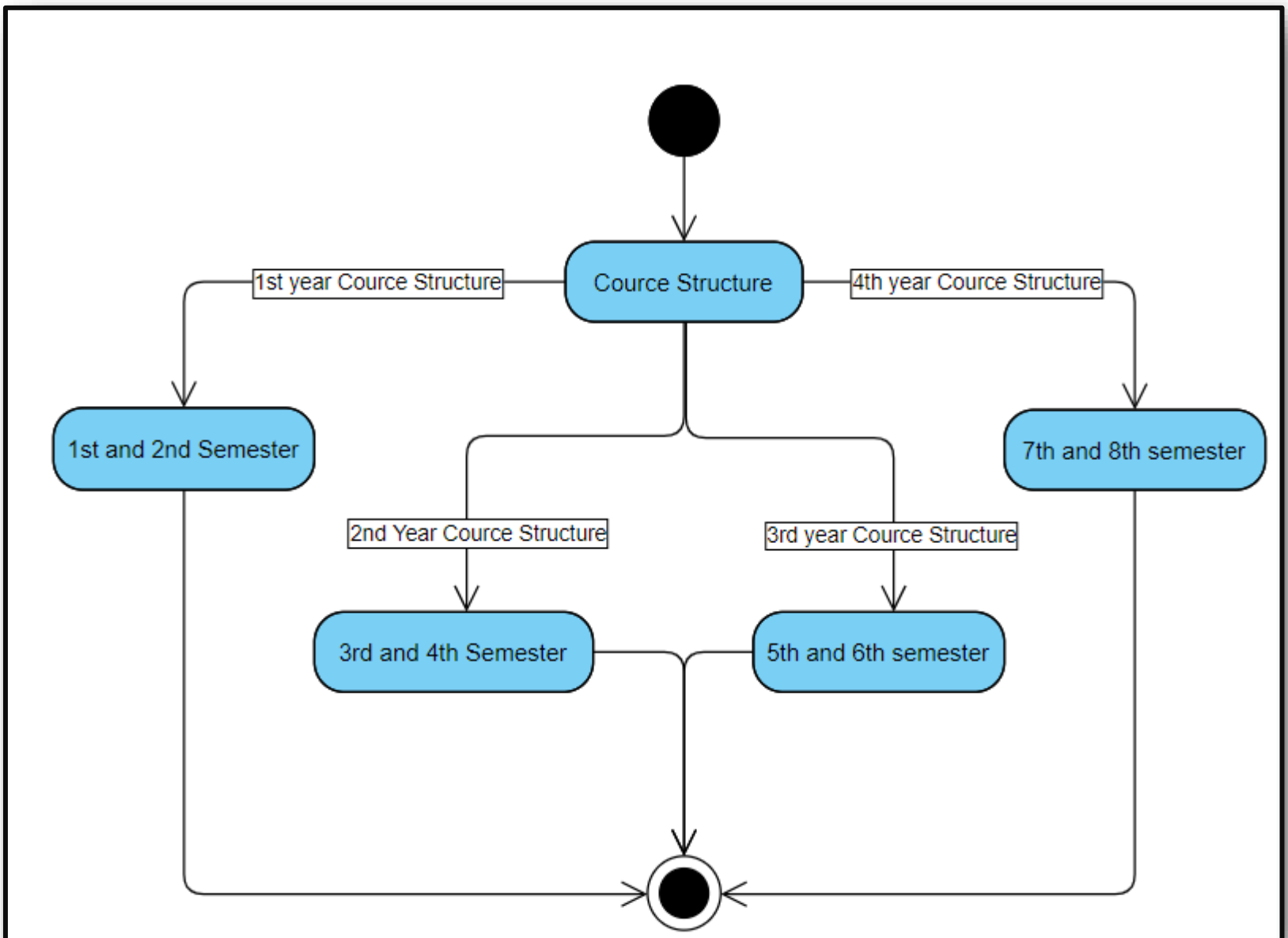


Q4. Develop Activity diagram for the process of Use-case diagram for the selected module using visual paradigm software tool for the project titled 'Computerization of B.I.T Mesra - Deoghar Campus'.

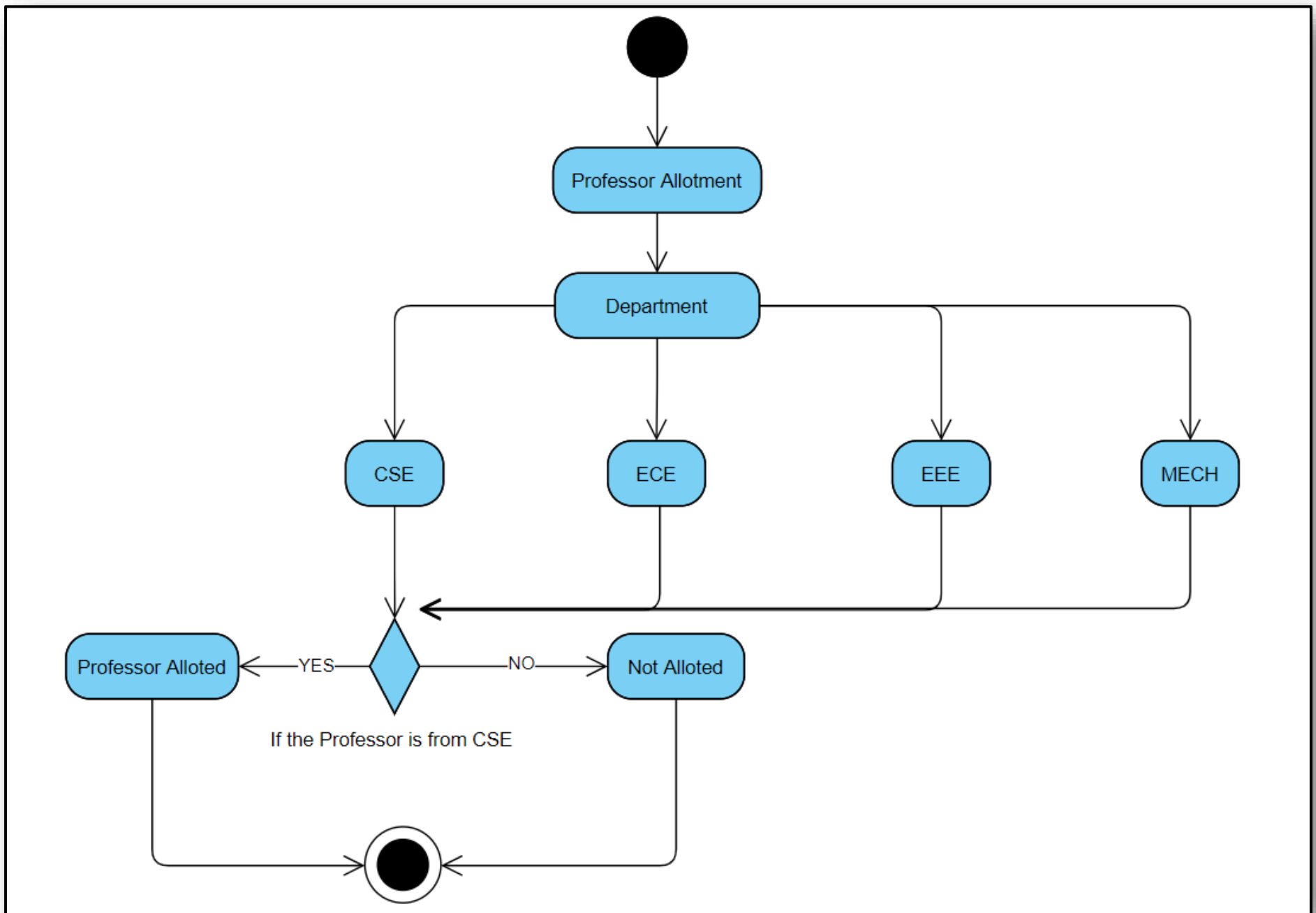
(I) Computer Science Module (CSE MODULE)



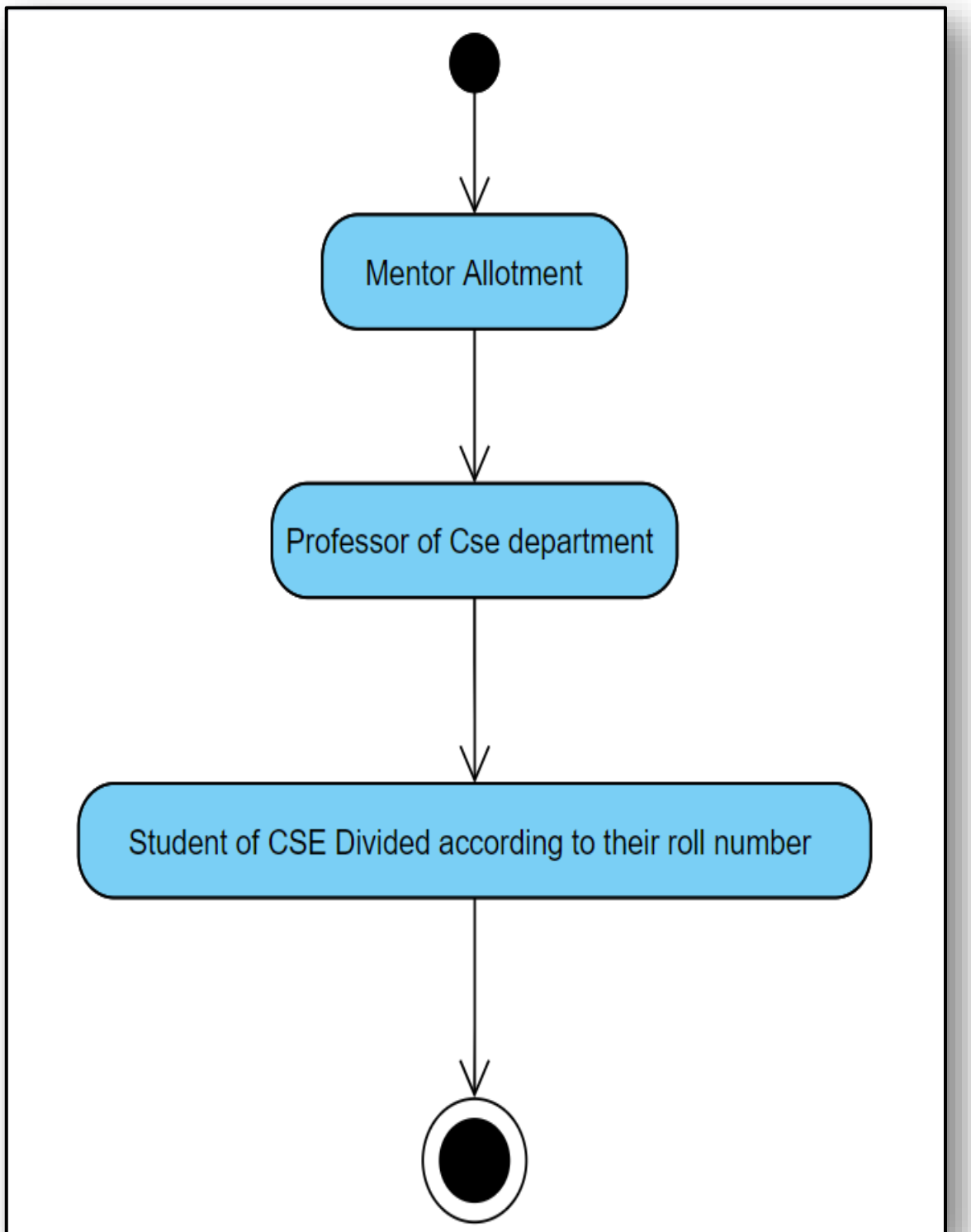
Activity Diagram for Register/Login Process



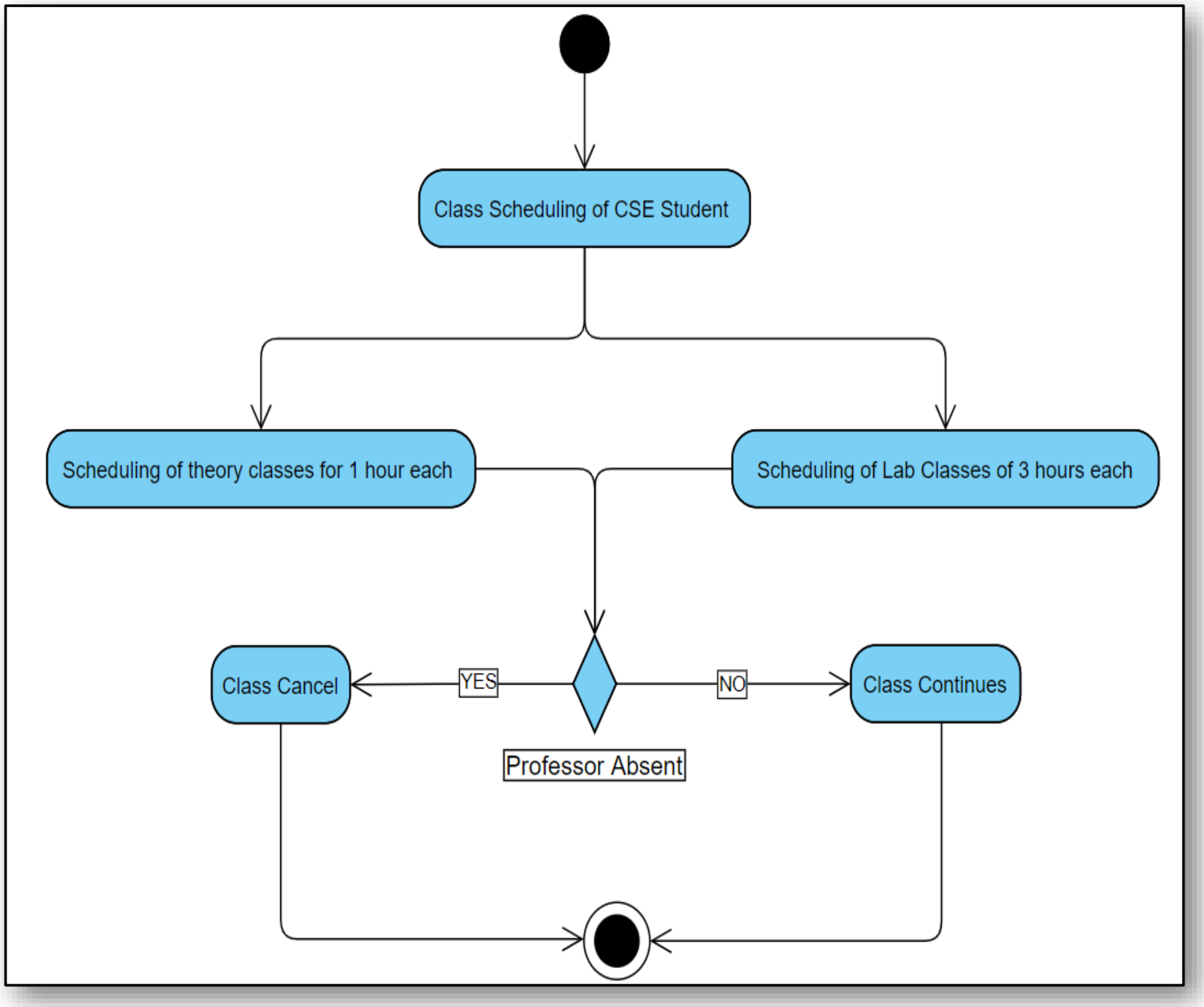
Activity Diagram Of Course Structure Process



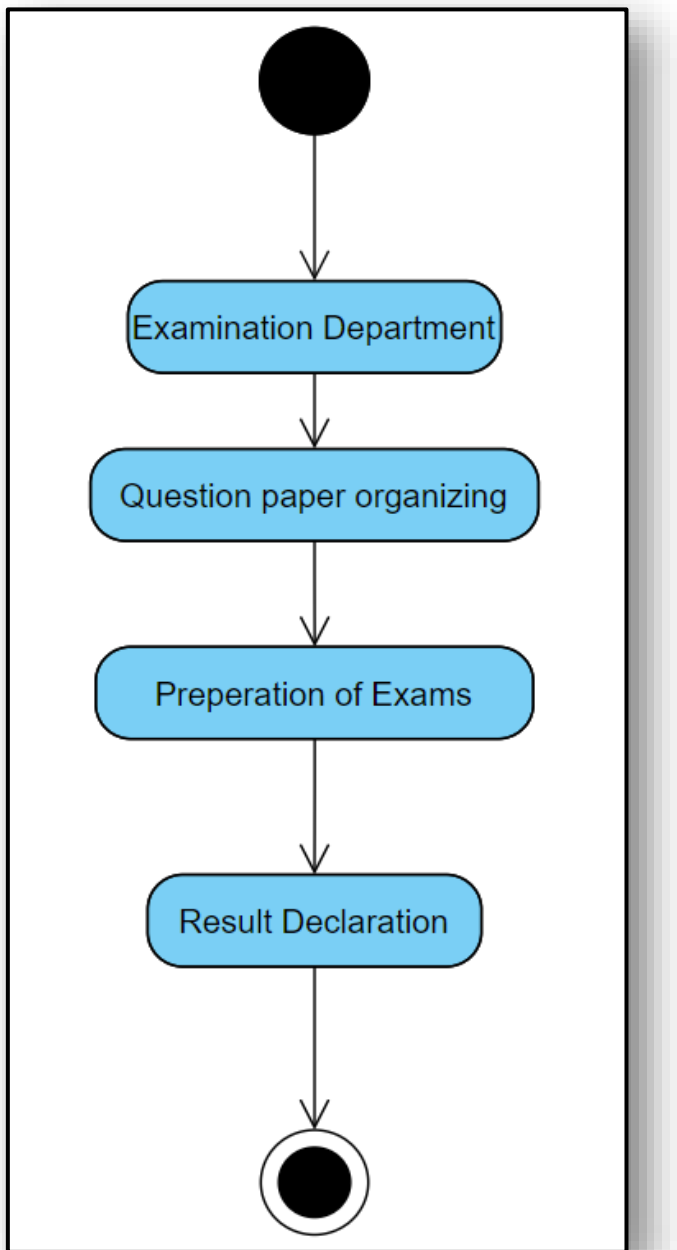
Activity Diagram of Professor Allotment Process



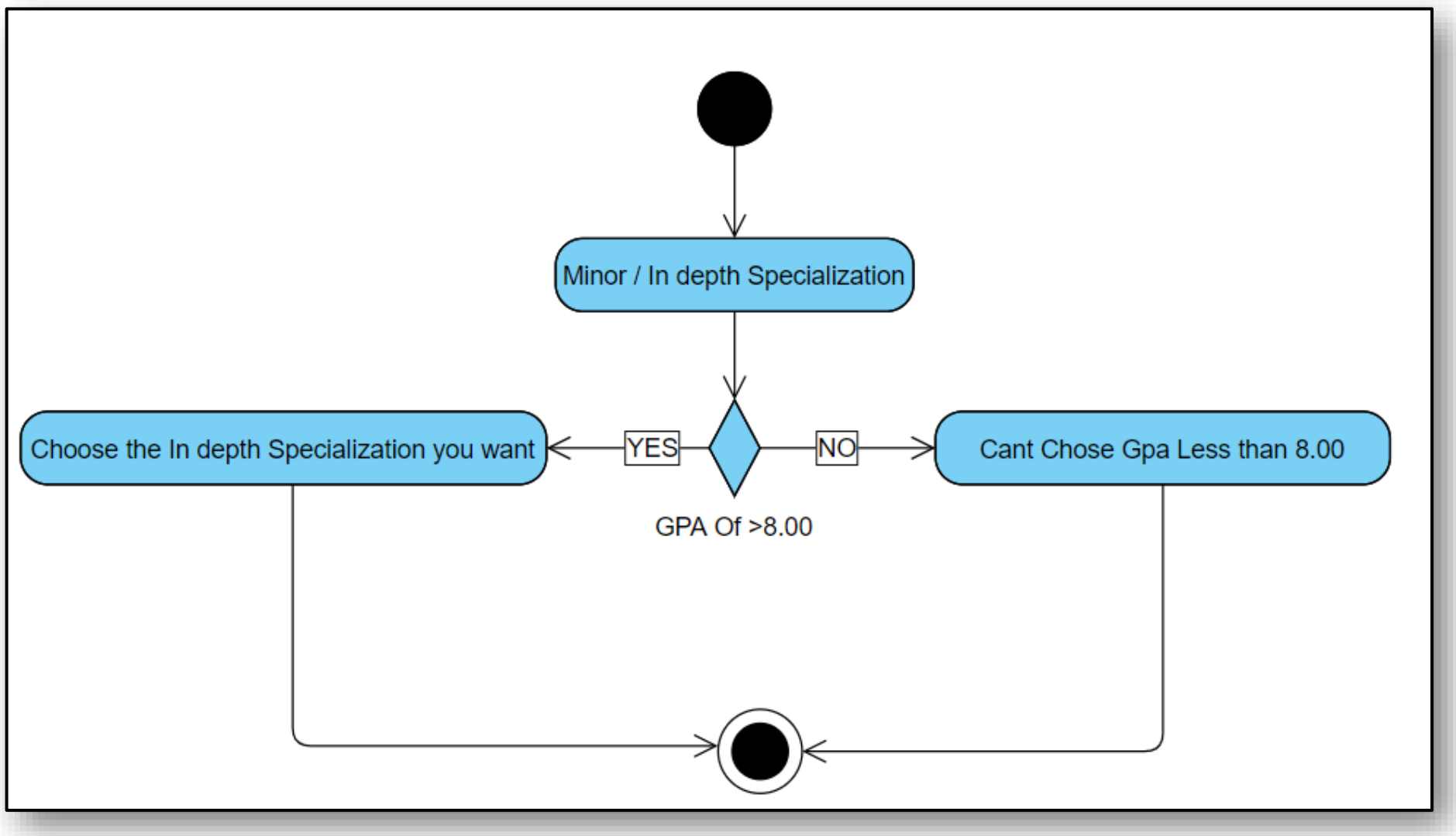
Activity Diagram Of Mentor Allotment Process



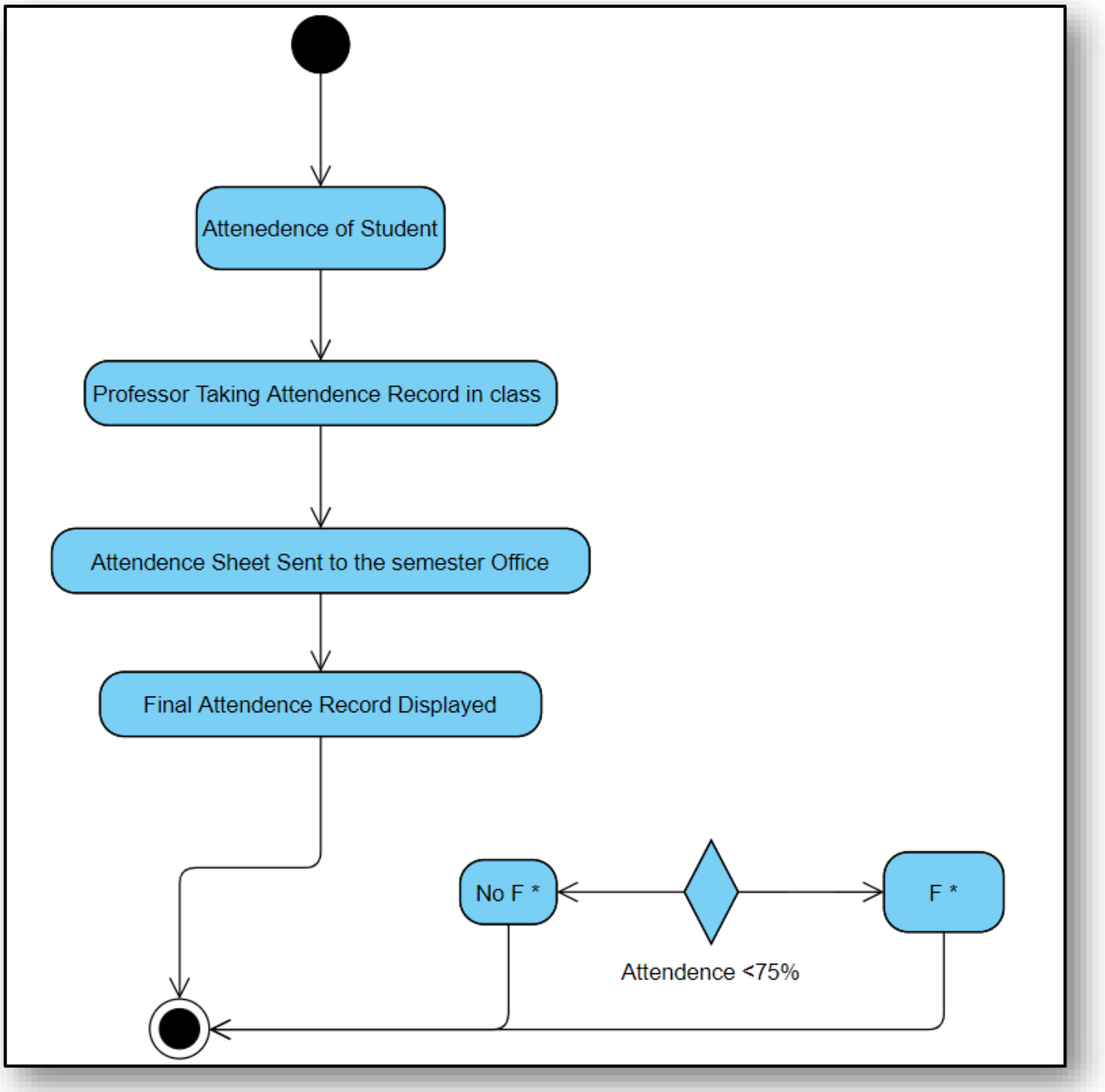
Activity Diagram of class scheduling Process



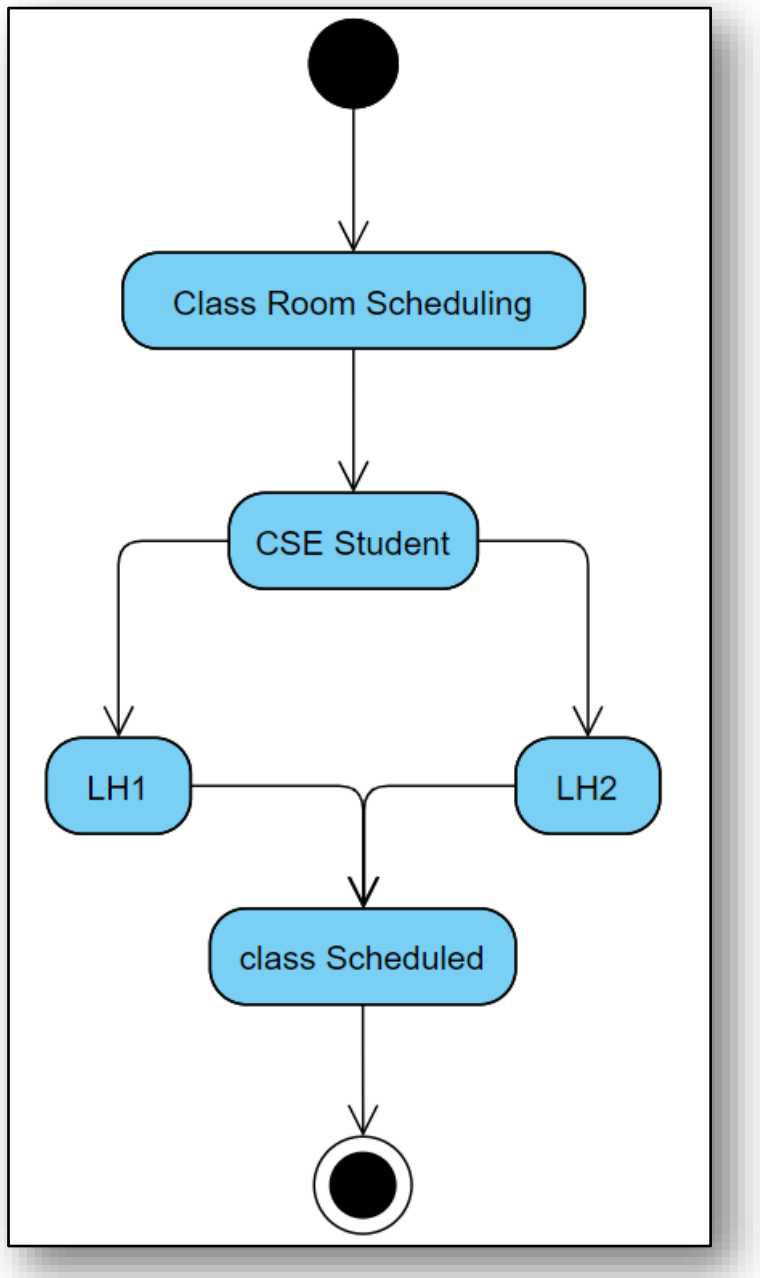
Activity Diagram of Examination Process



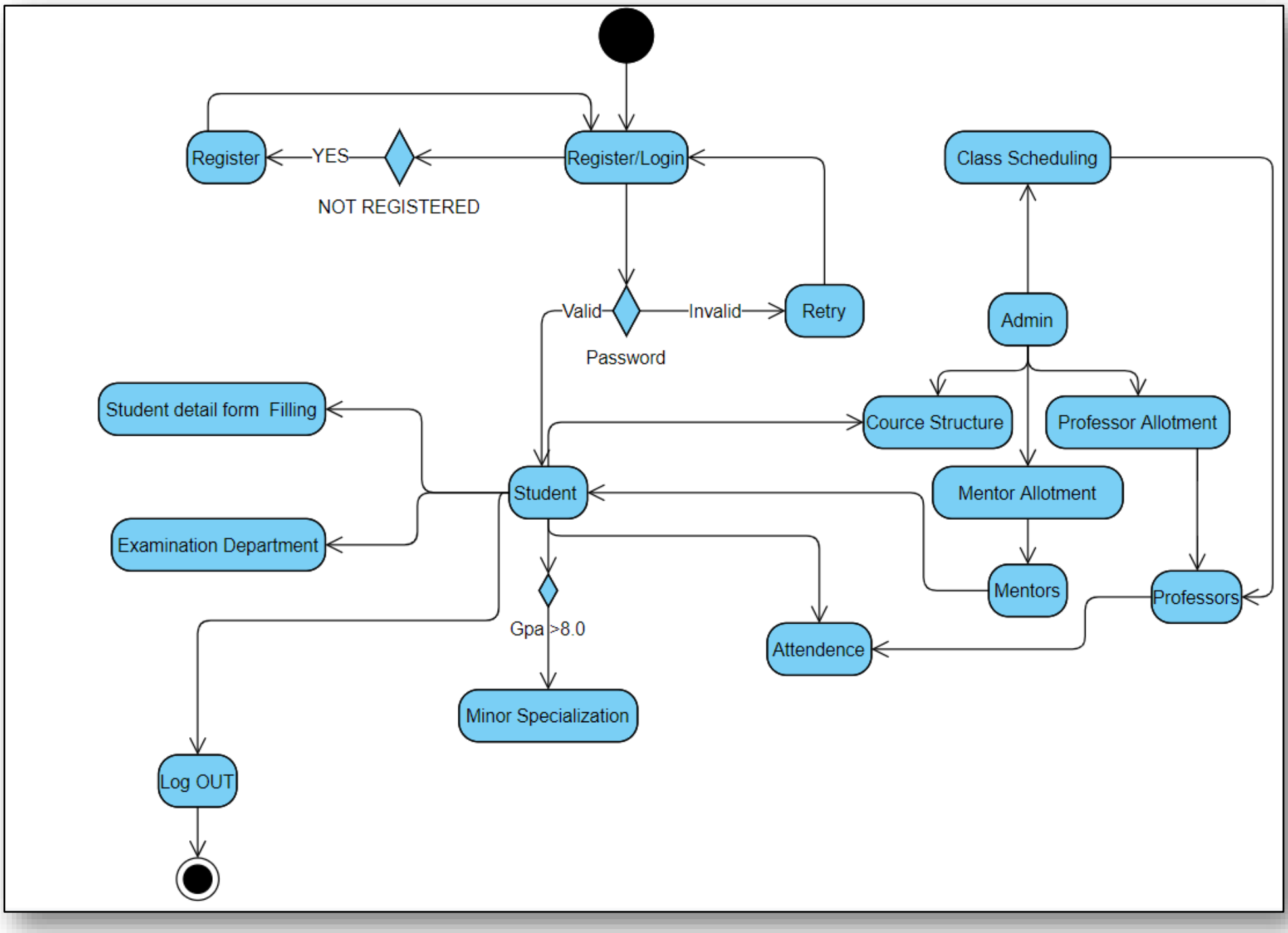
Activity Diagram Minor/In depth Specialization



Activity Diagram of Attendance Process

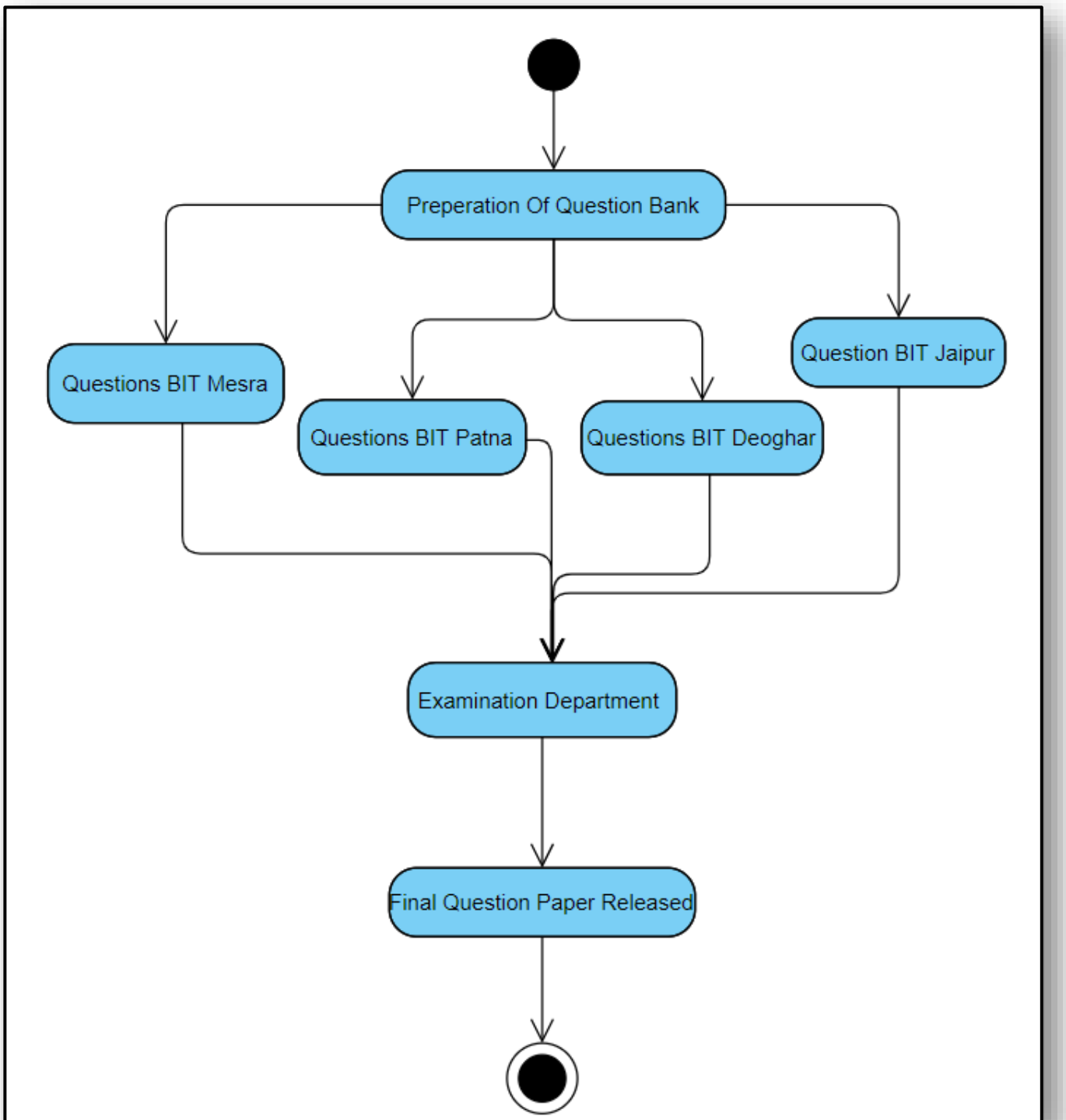


Activity Diagram of Class Room Allotment

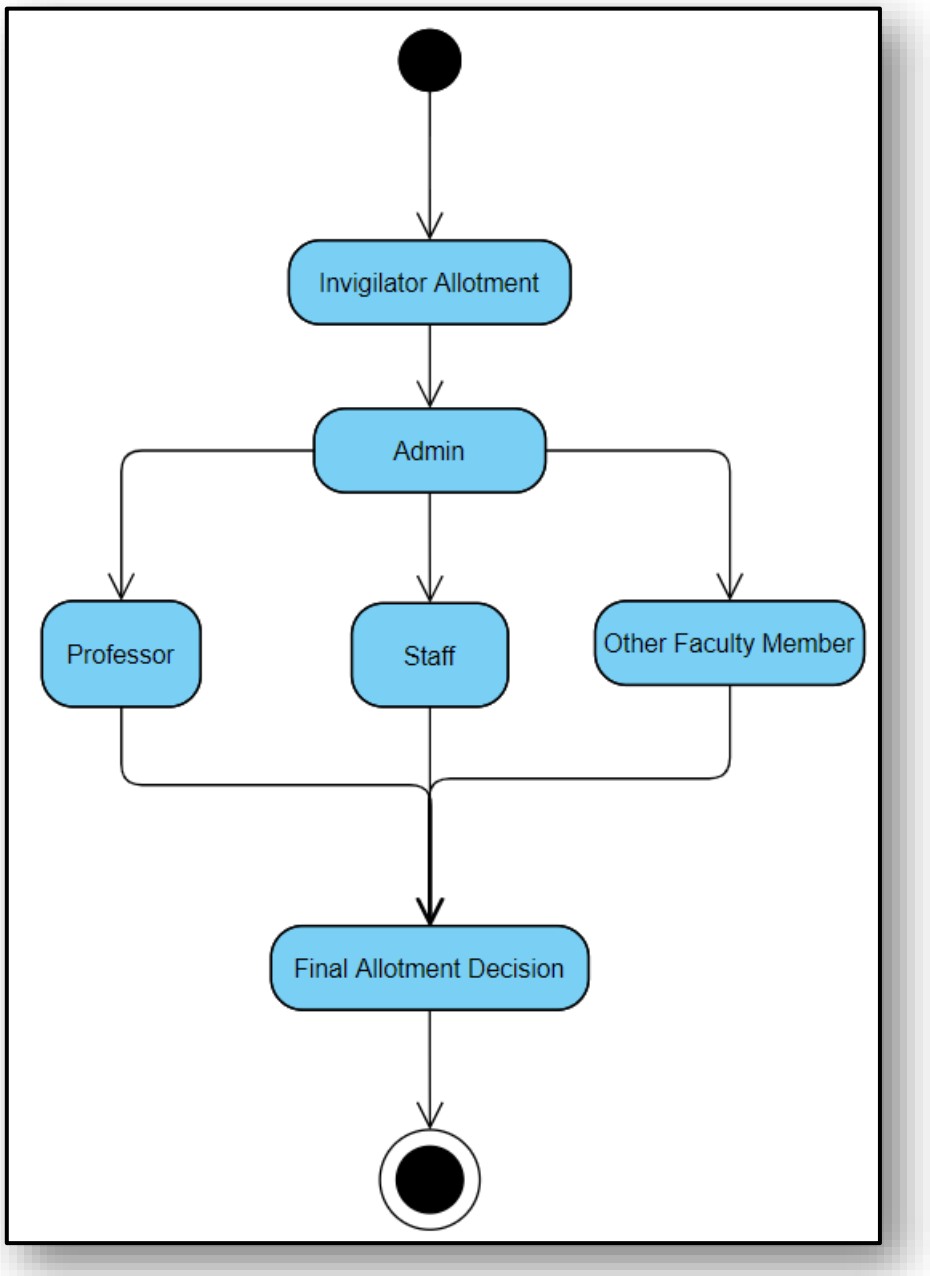


Activity Diagram of Computer Science Module

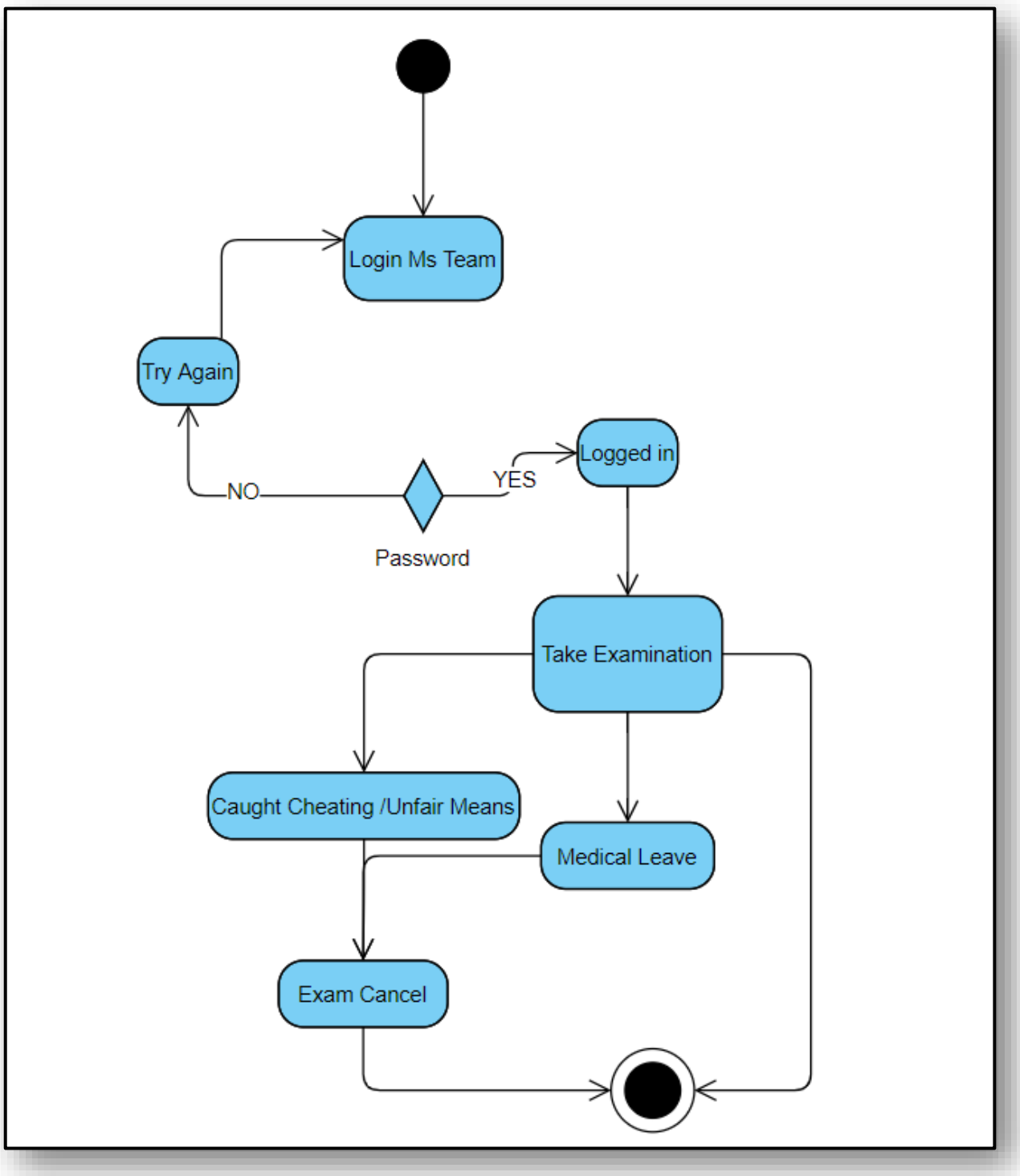
(II) Examination Module



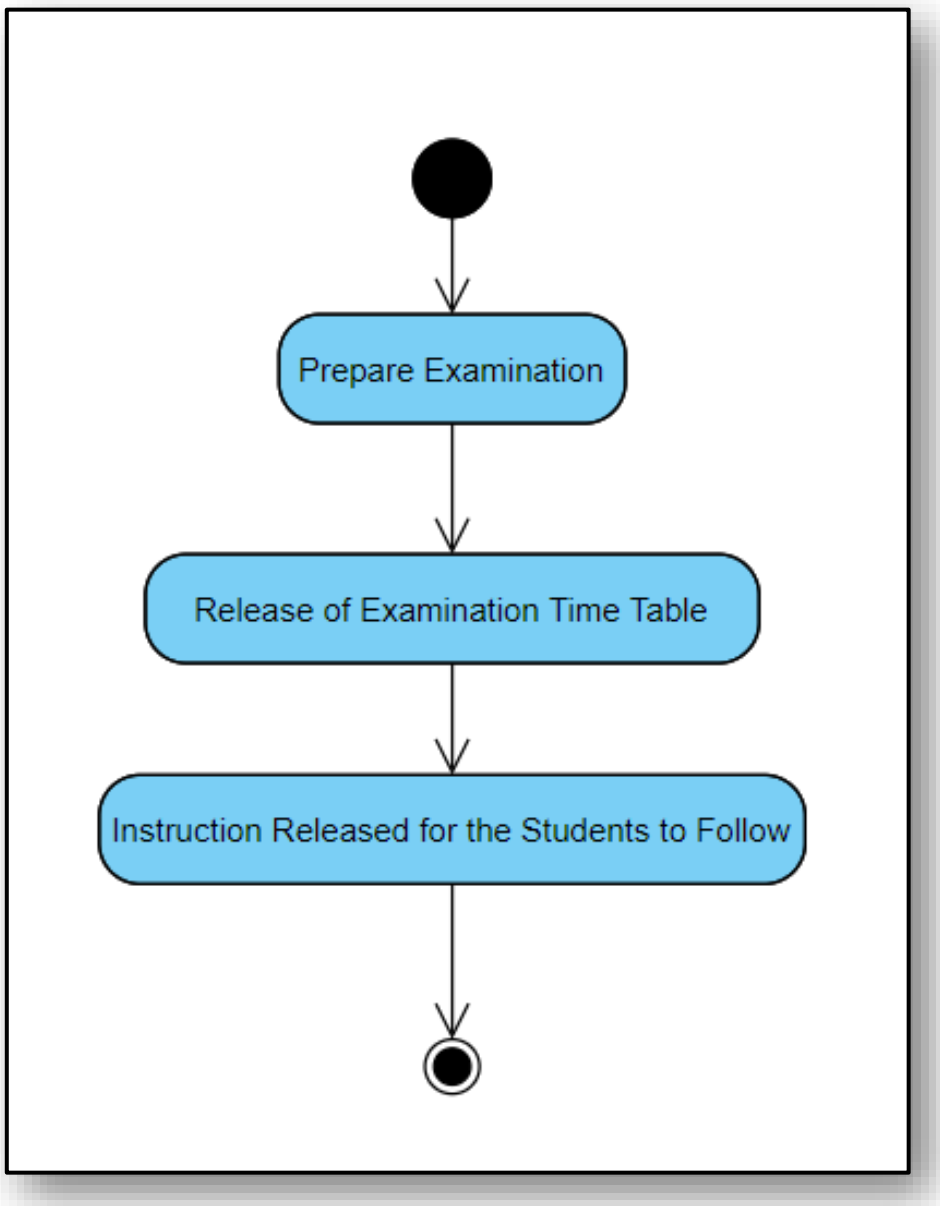
Activity Diagram Of Preperation of Question Bank Process



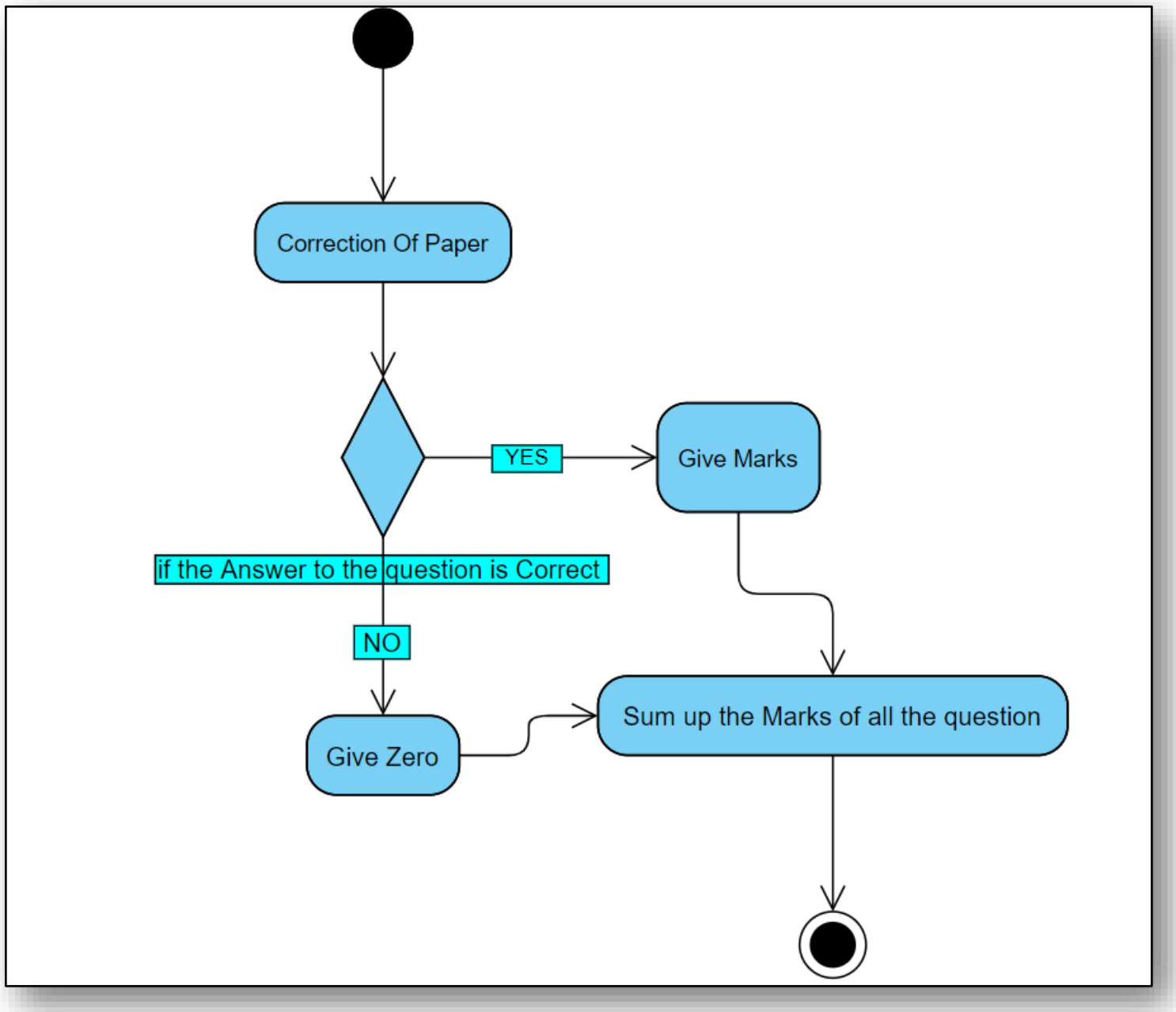
Activity Diagram of Invigilator Allotment Process



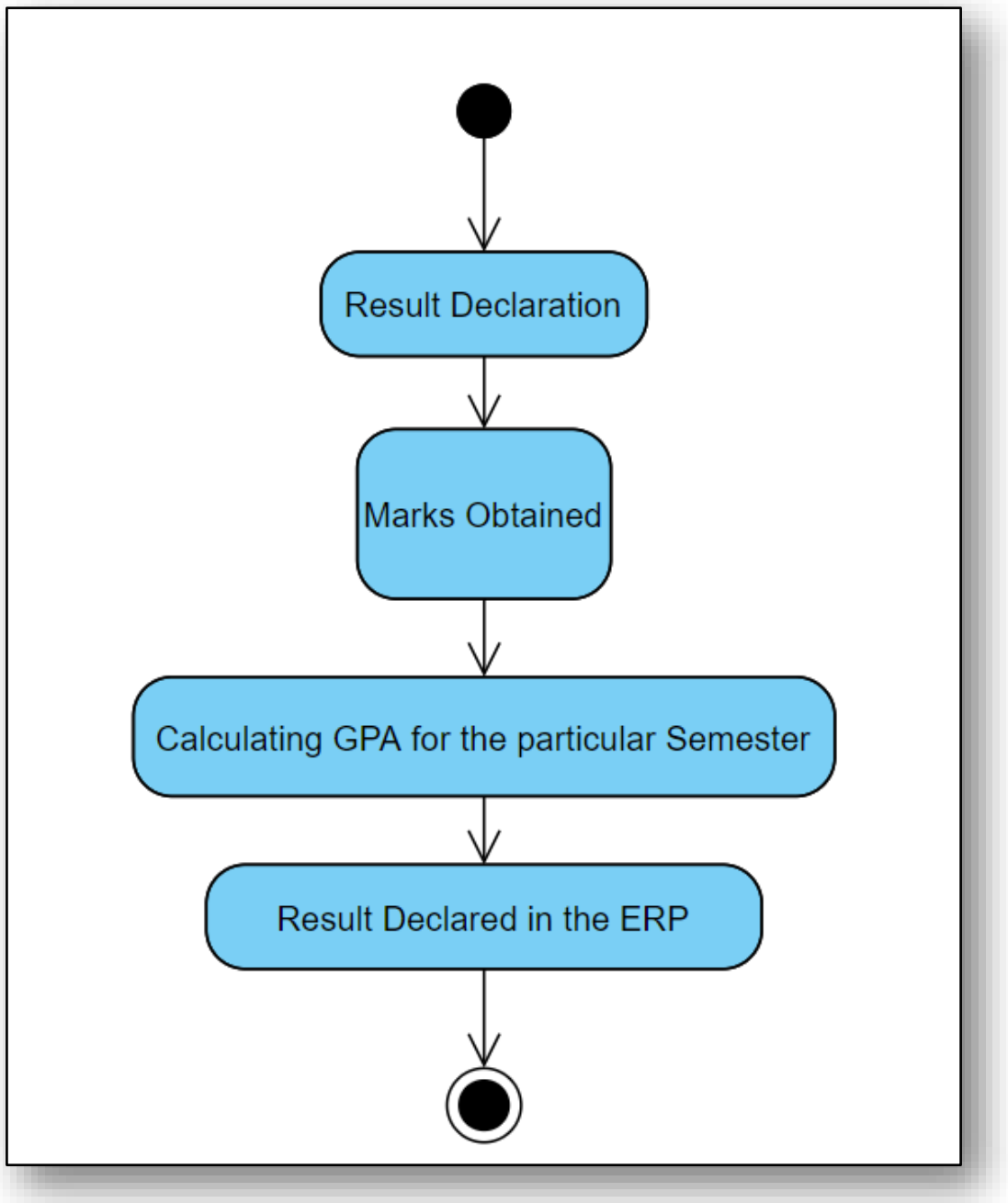
Activity Diagram of Login Process of Ms Teams.



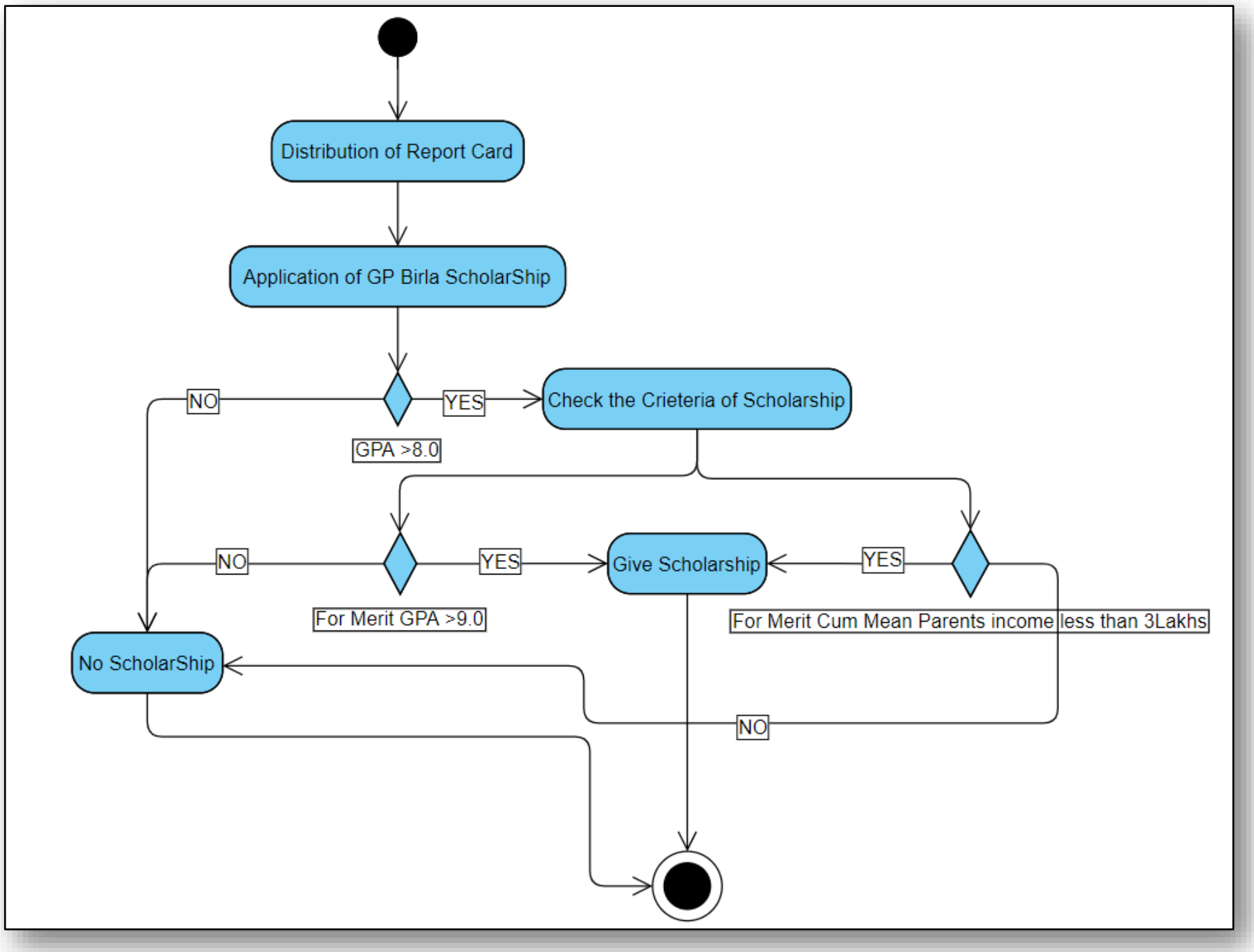
Activity Diagram of Exam Preperation



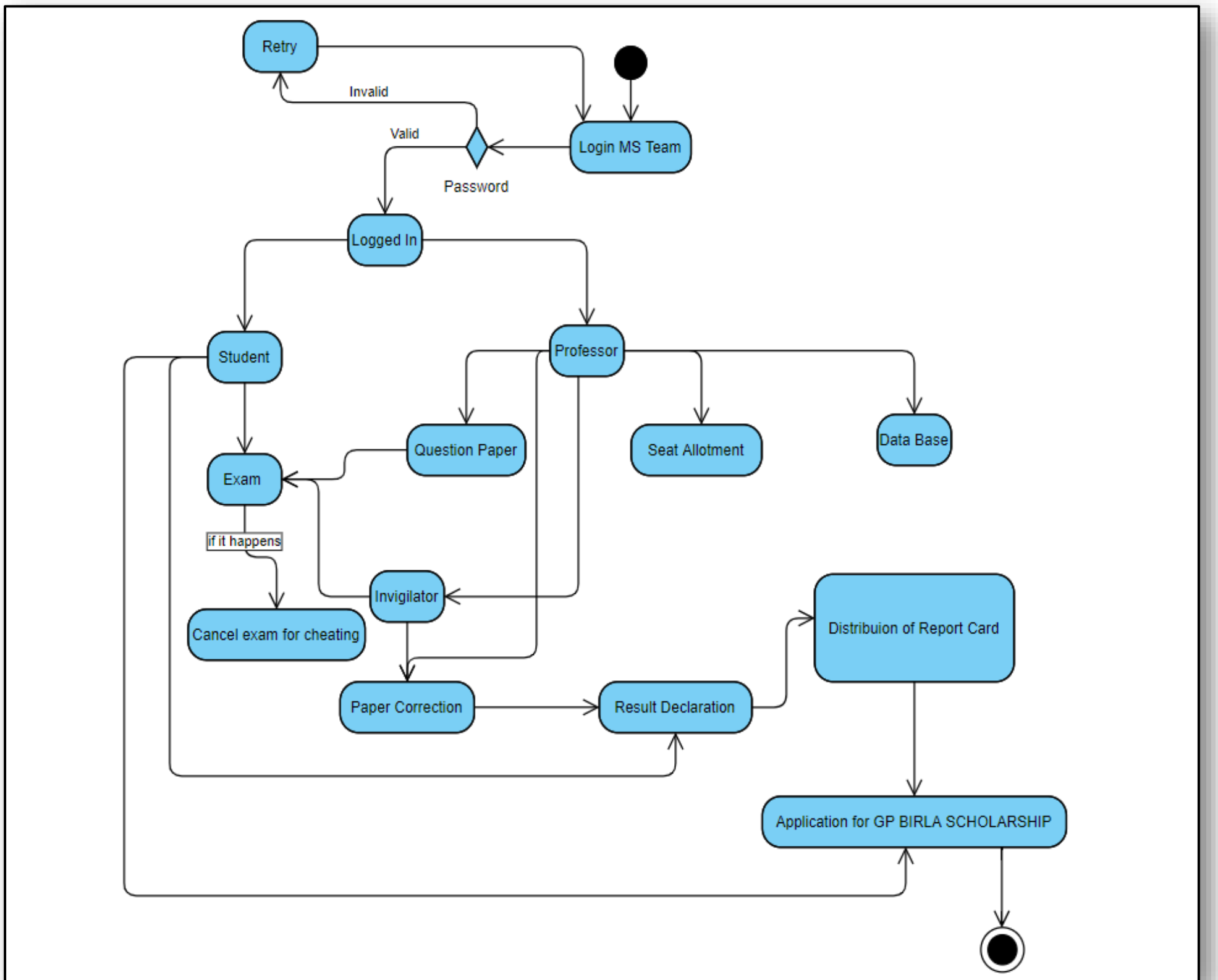
Activity Diagram of Paper Correction Process



Activity Diagram of Result Declaration Module

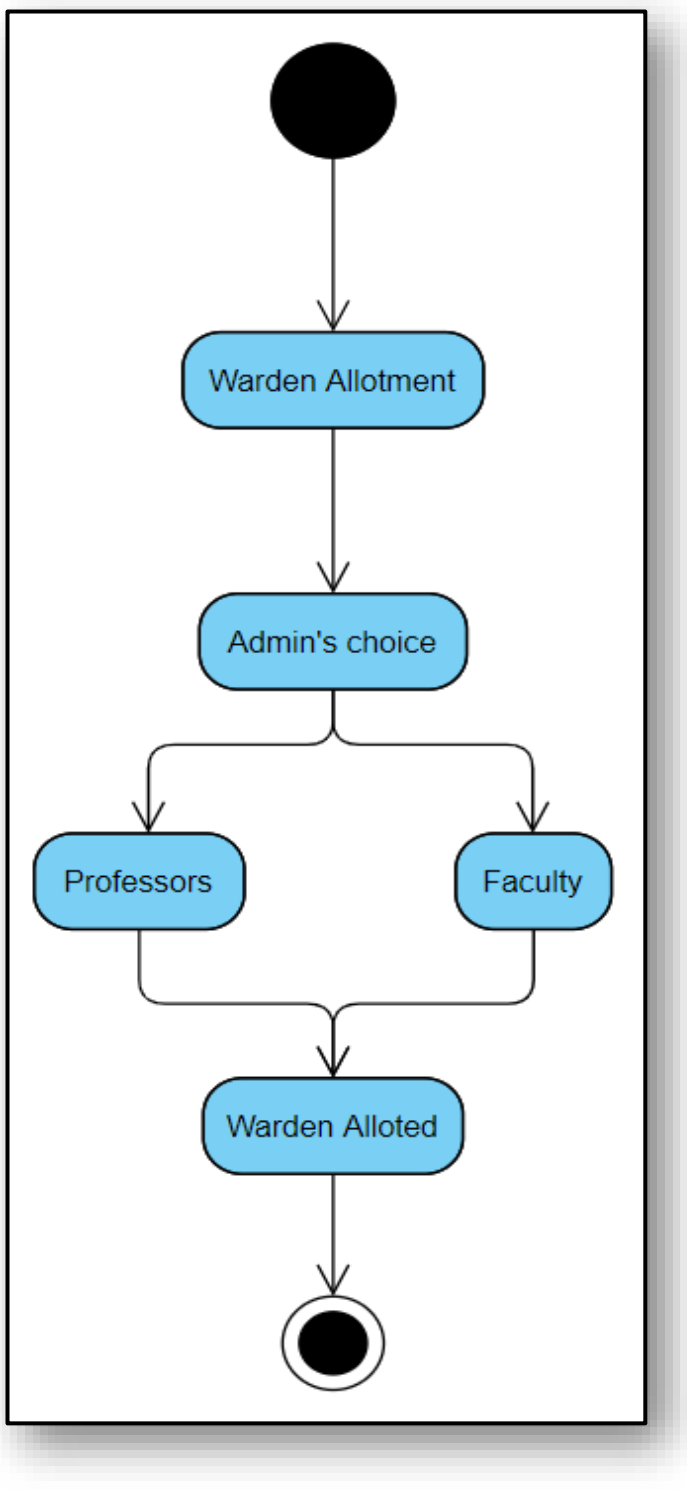


Activity Diagram of Report Card Distribution Process

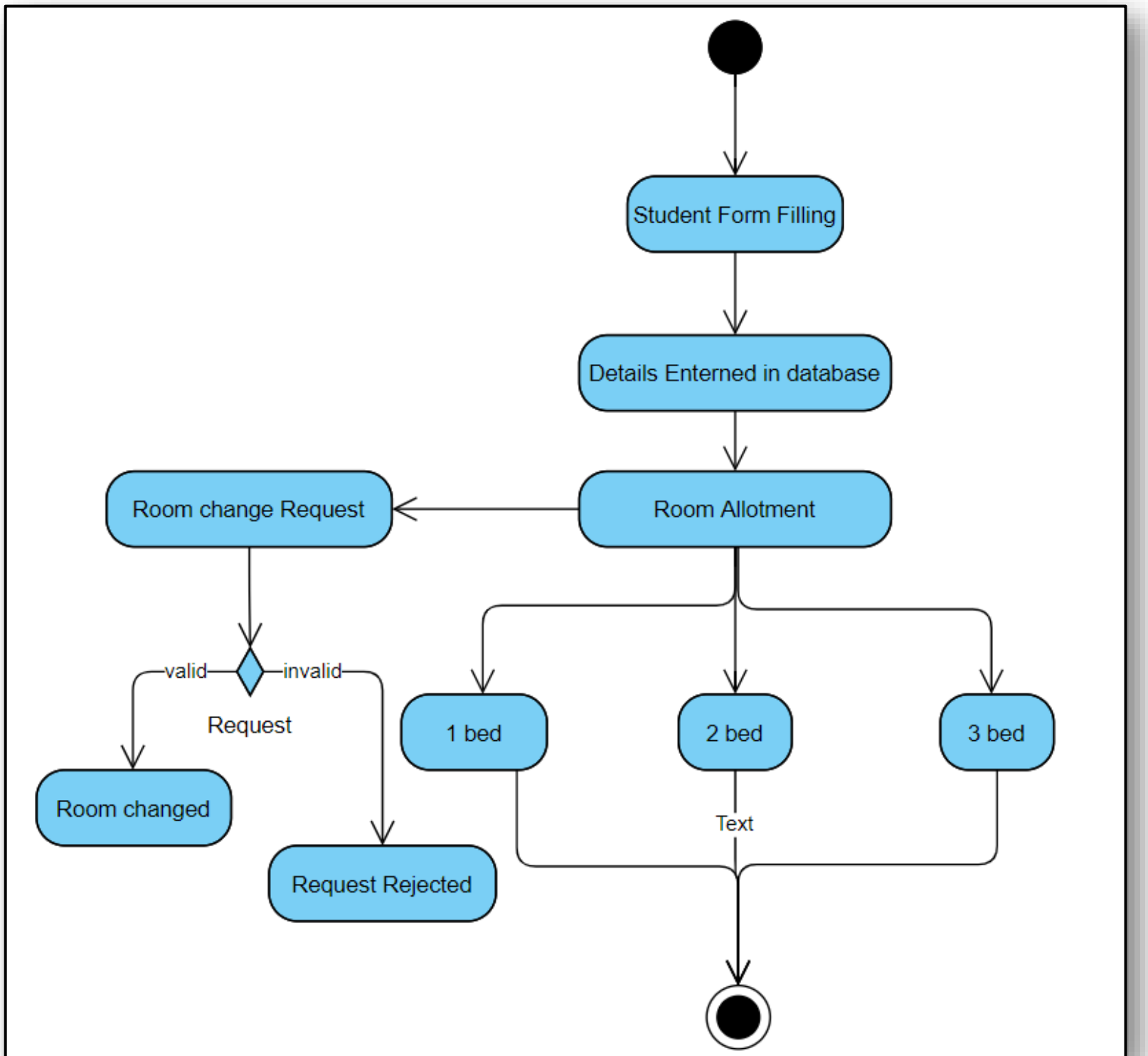


Activity Diagram of EXAMINATION MODULE

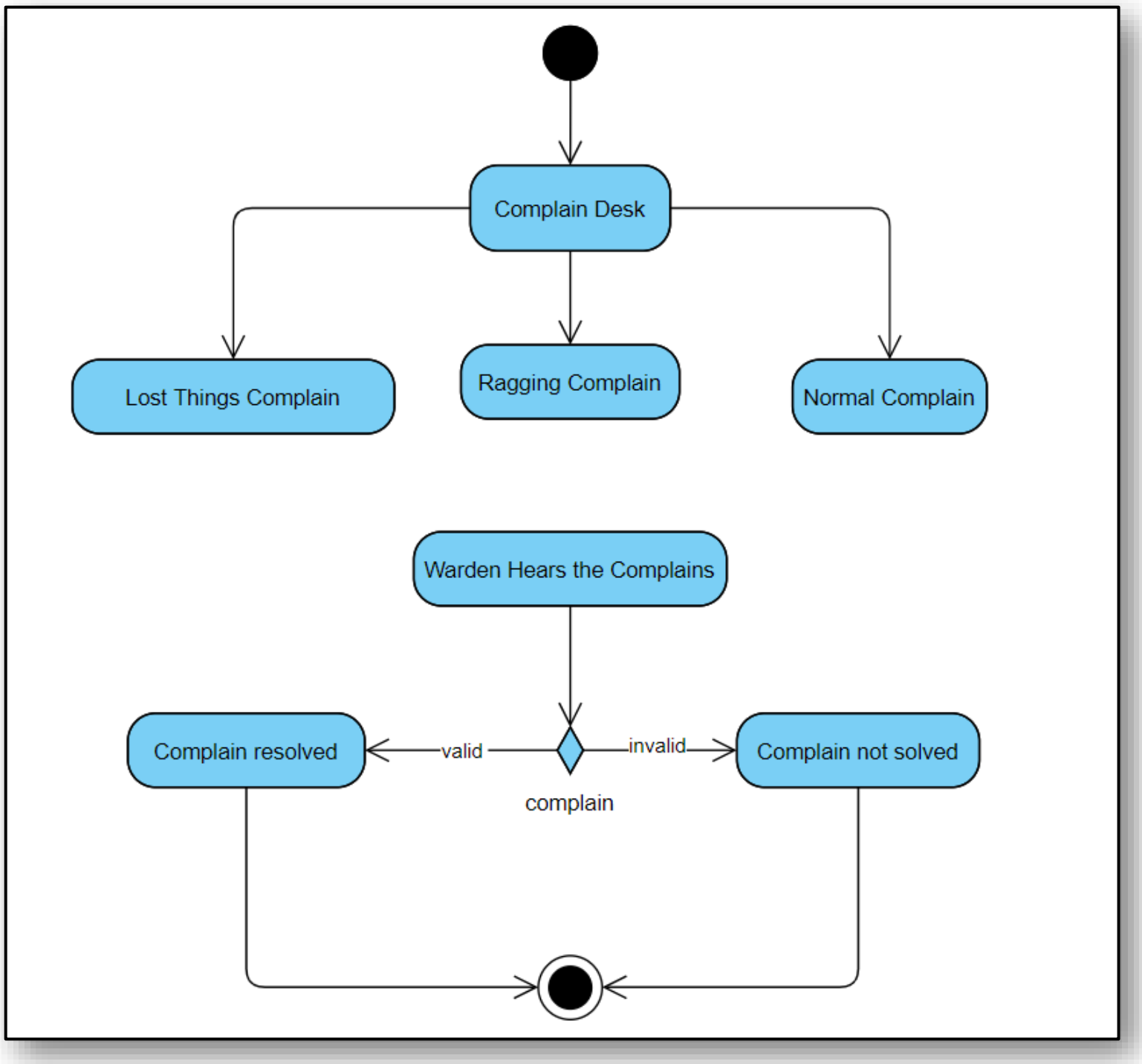
(III) Boys Hostel Module



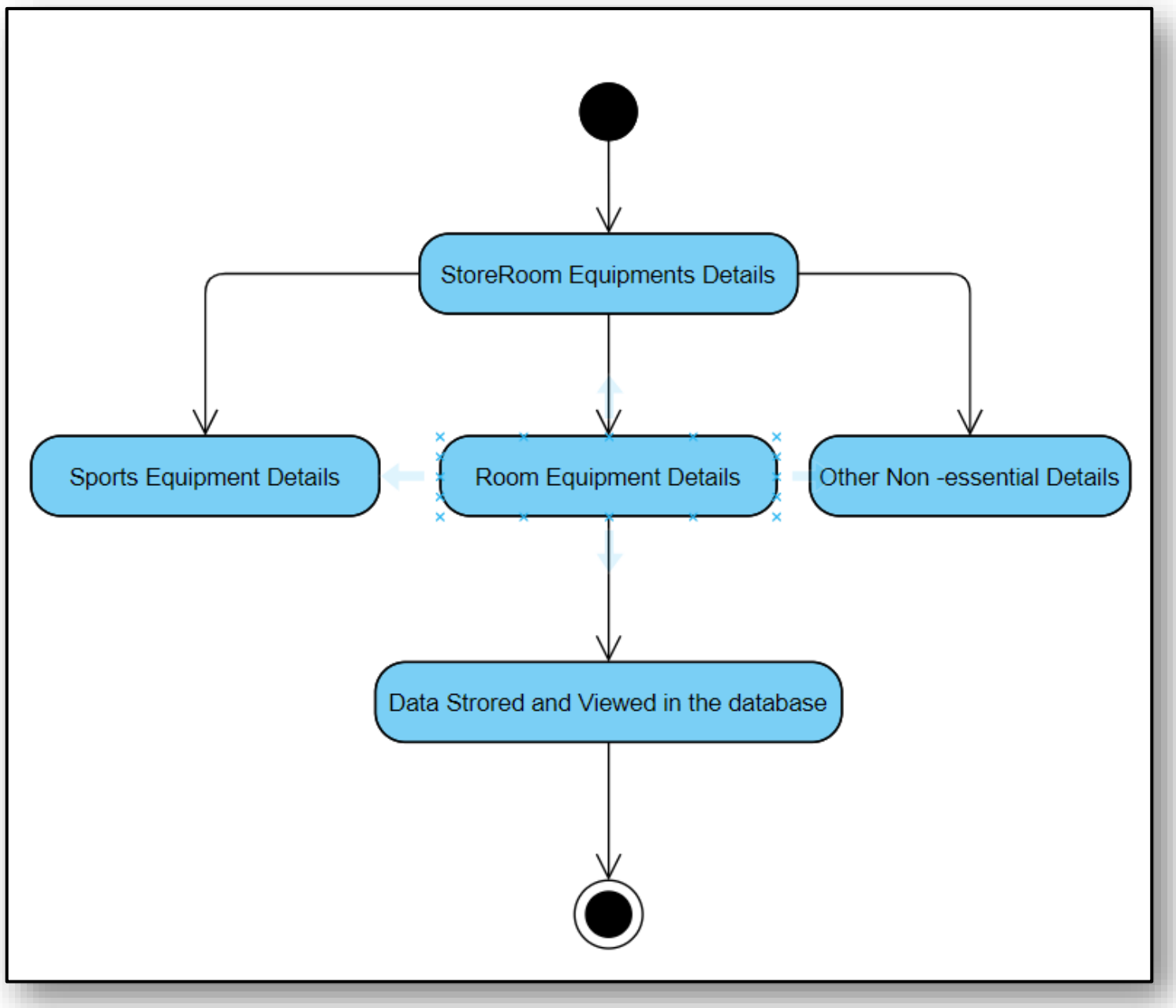
Activity Diagram of Warden Allotment Process



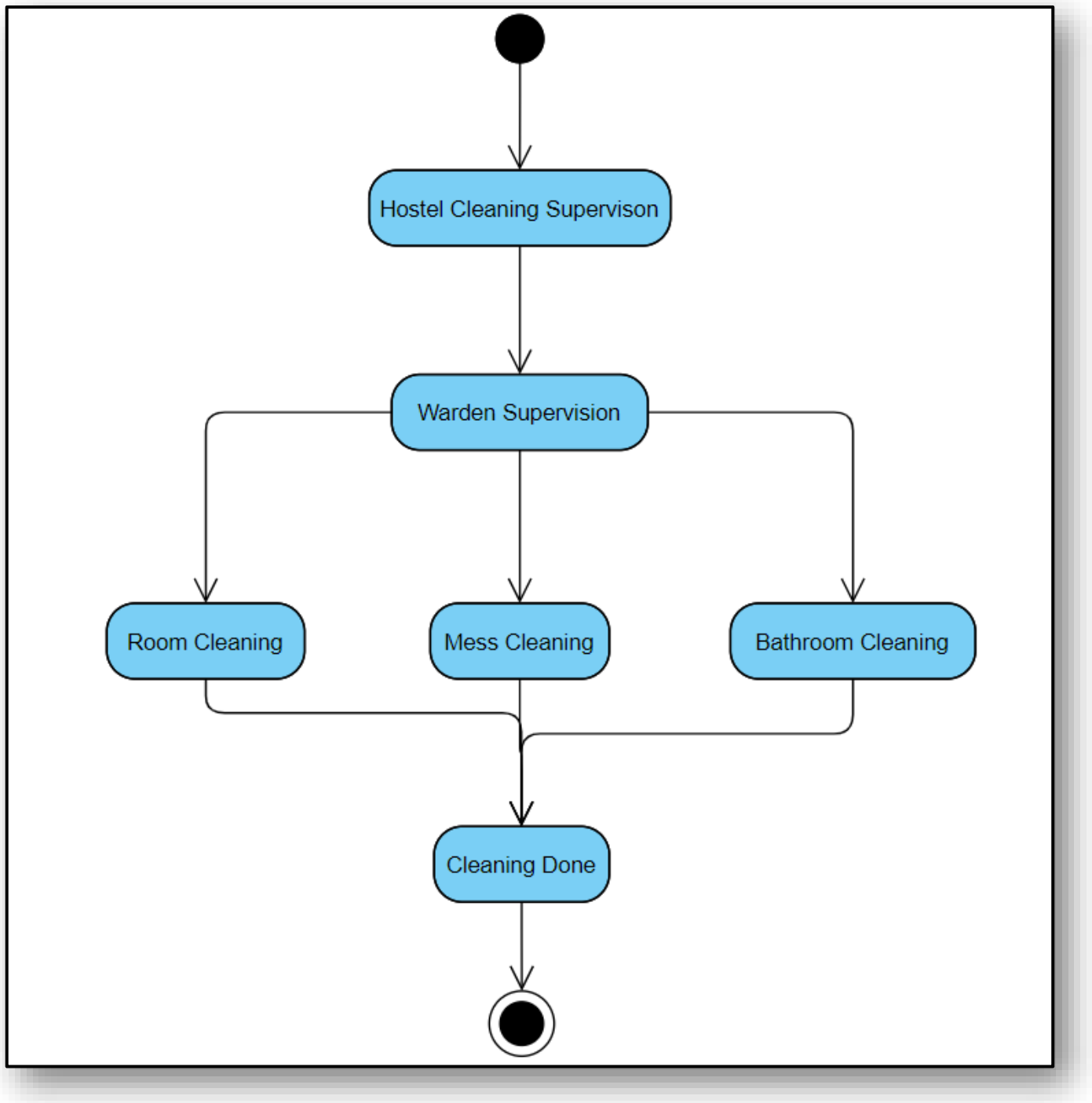
Activity Diagram Of Students Details and Room Allotment Process



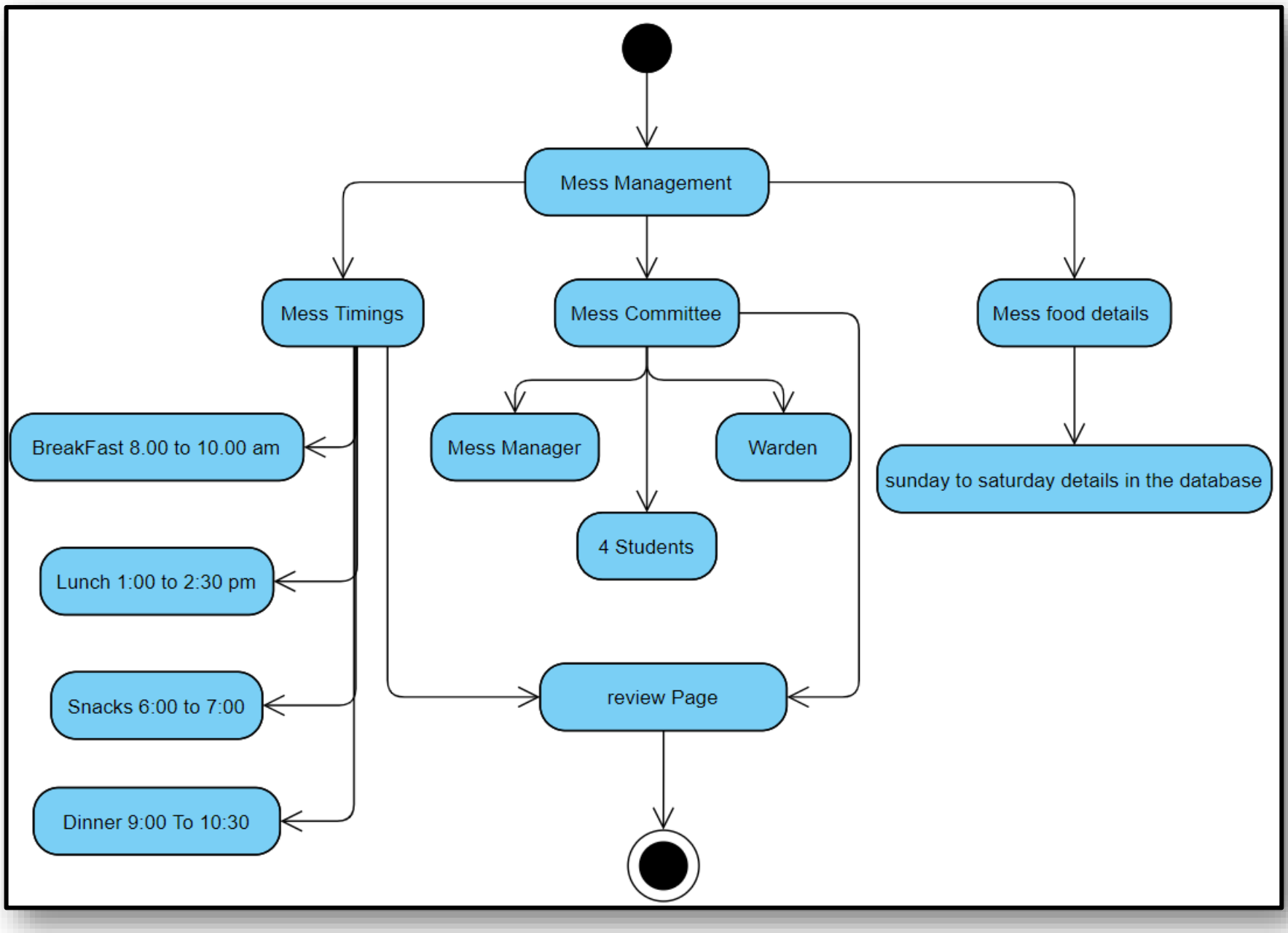
Activity Diagram Of Complain Desk Process



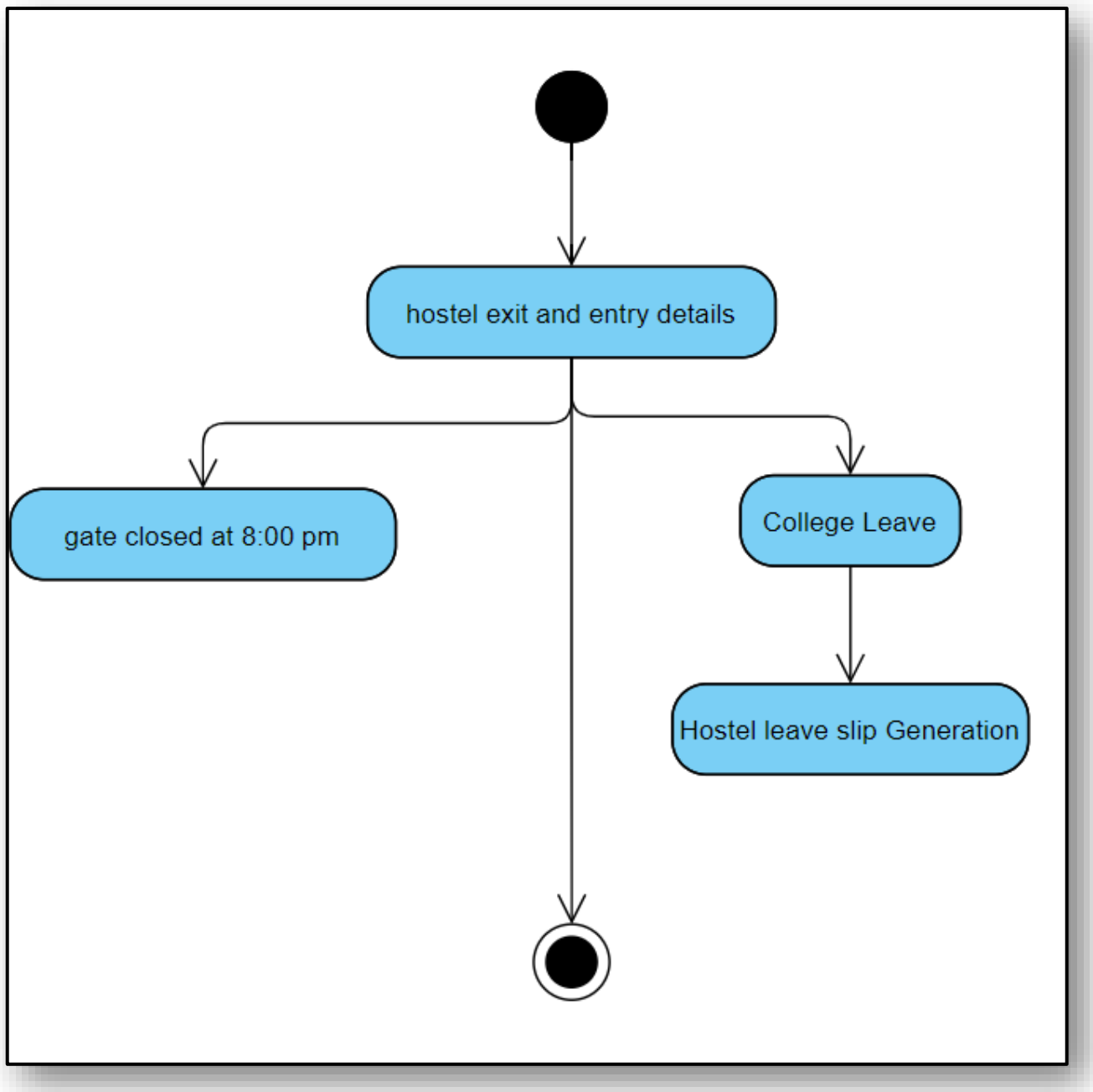
Activity Diagram Of Store Room Equipment Process



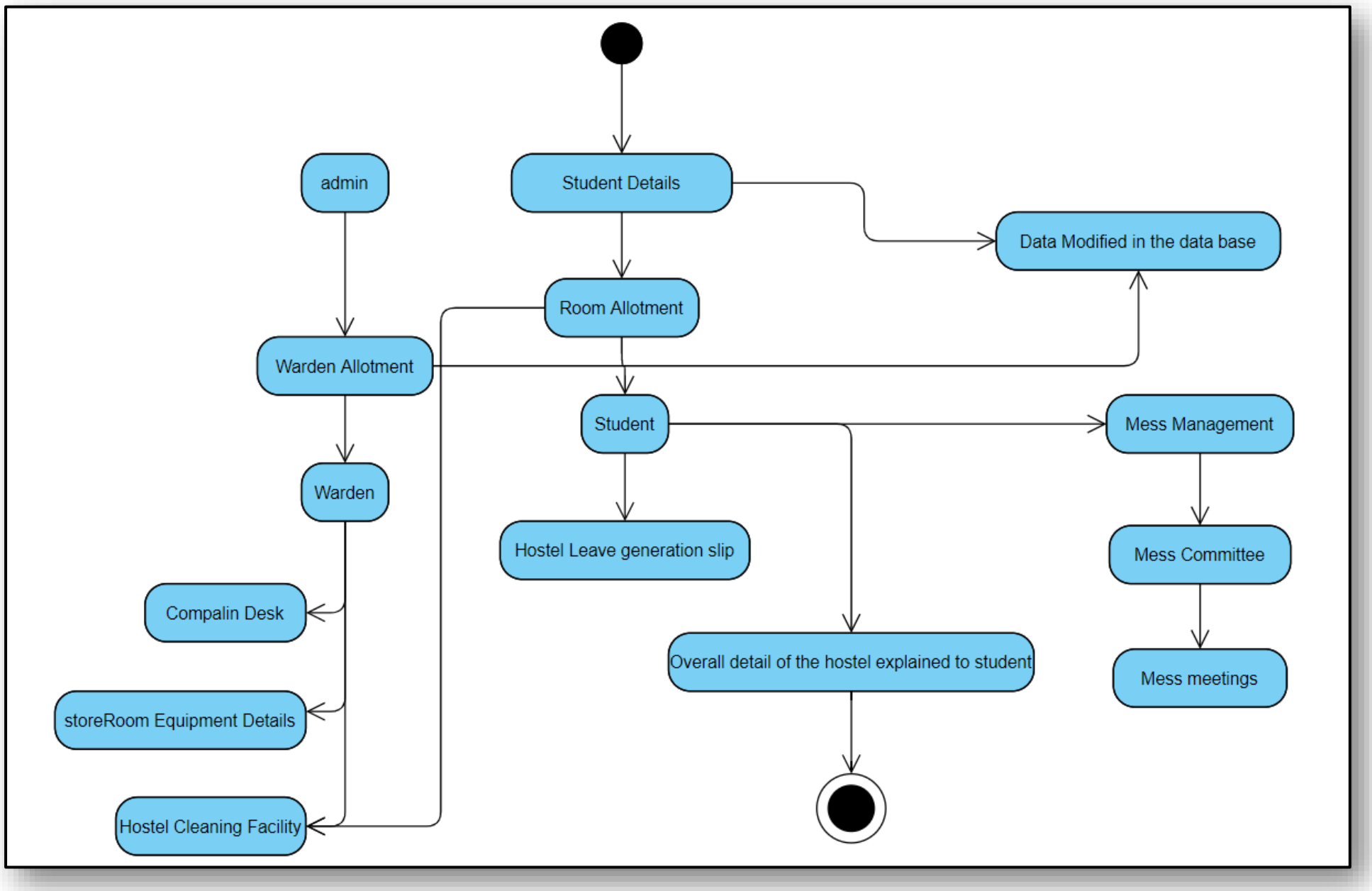
Activity Diagram Of Hostel Room Cleaning Process



Activity Diagram Of Mess Management Process

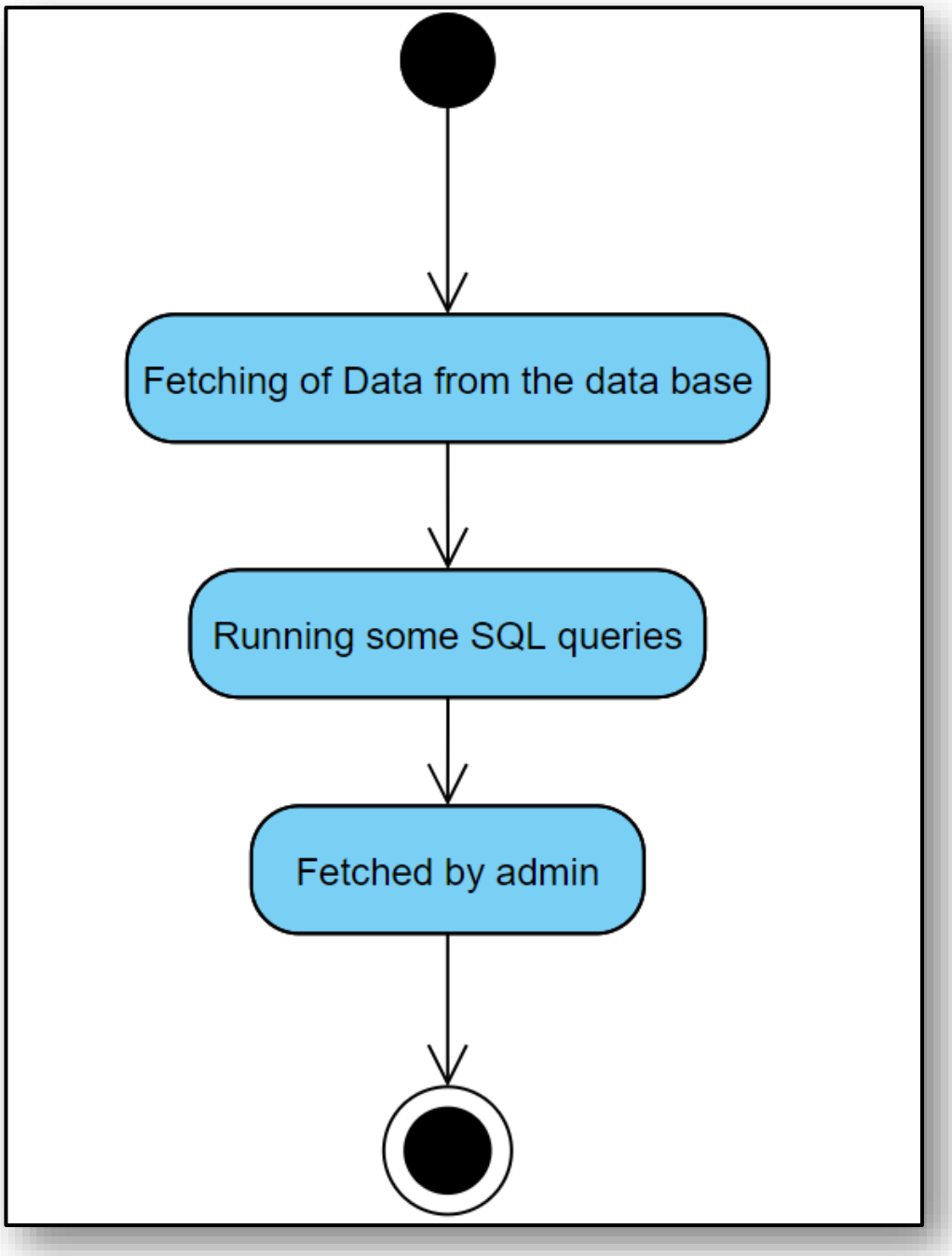


Activity Diagram Of Hostel exit and Entry Permission Process

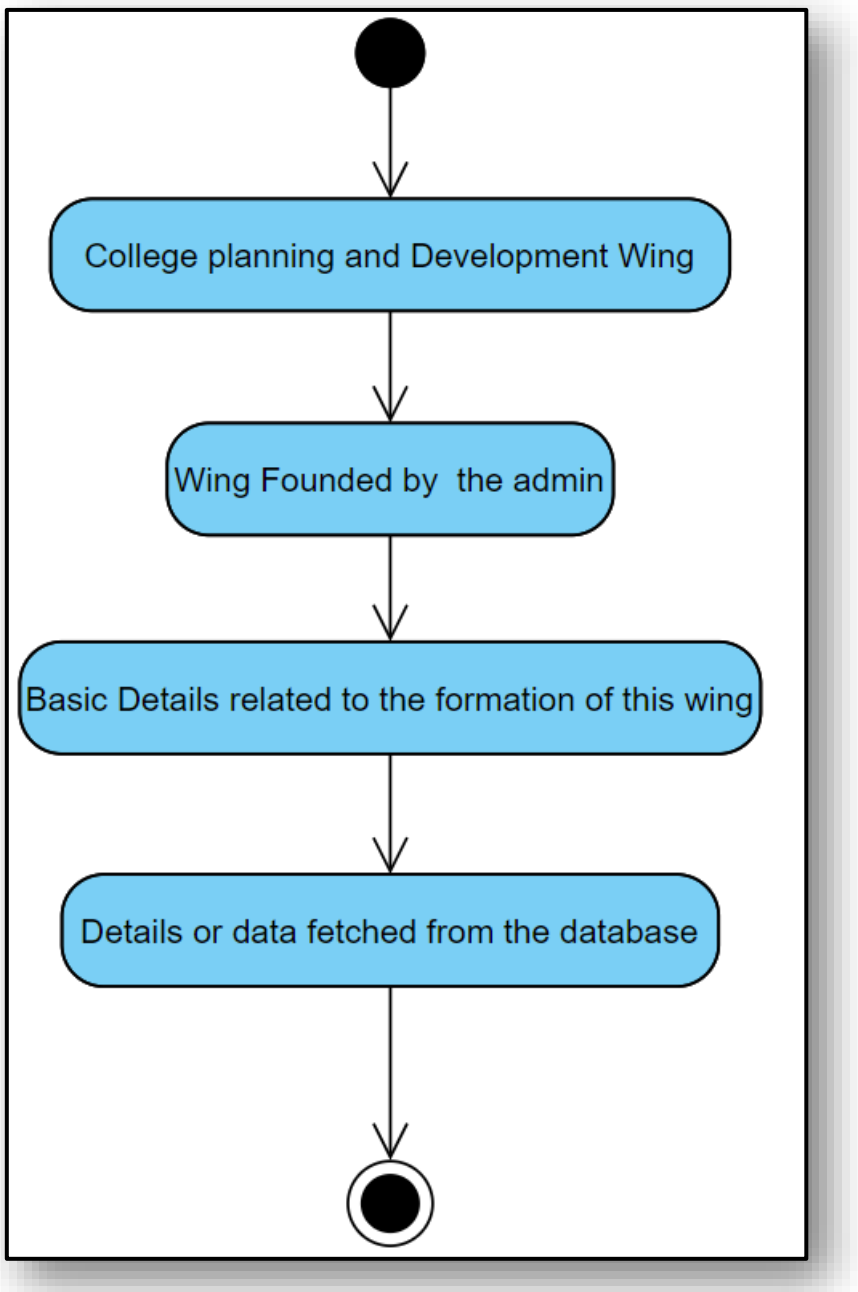


Activity Diagram Of BOYS HOSTEL MODULE

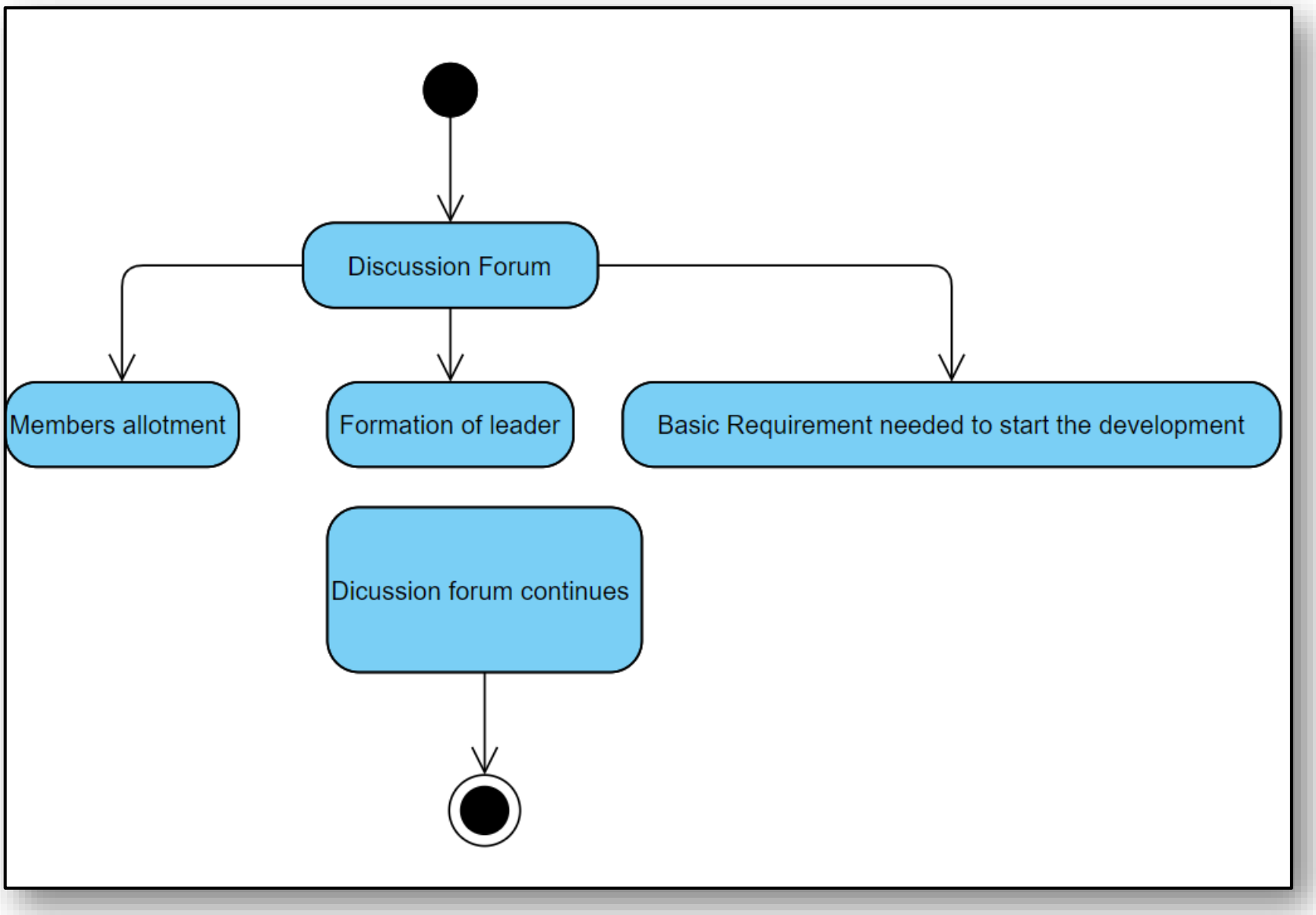
(IV) Planning And Development Module



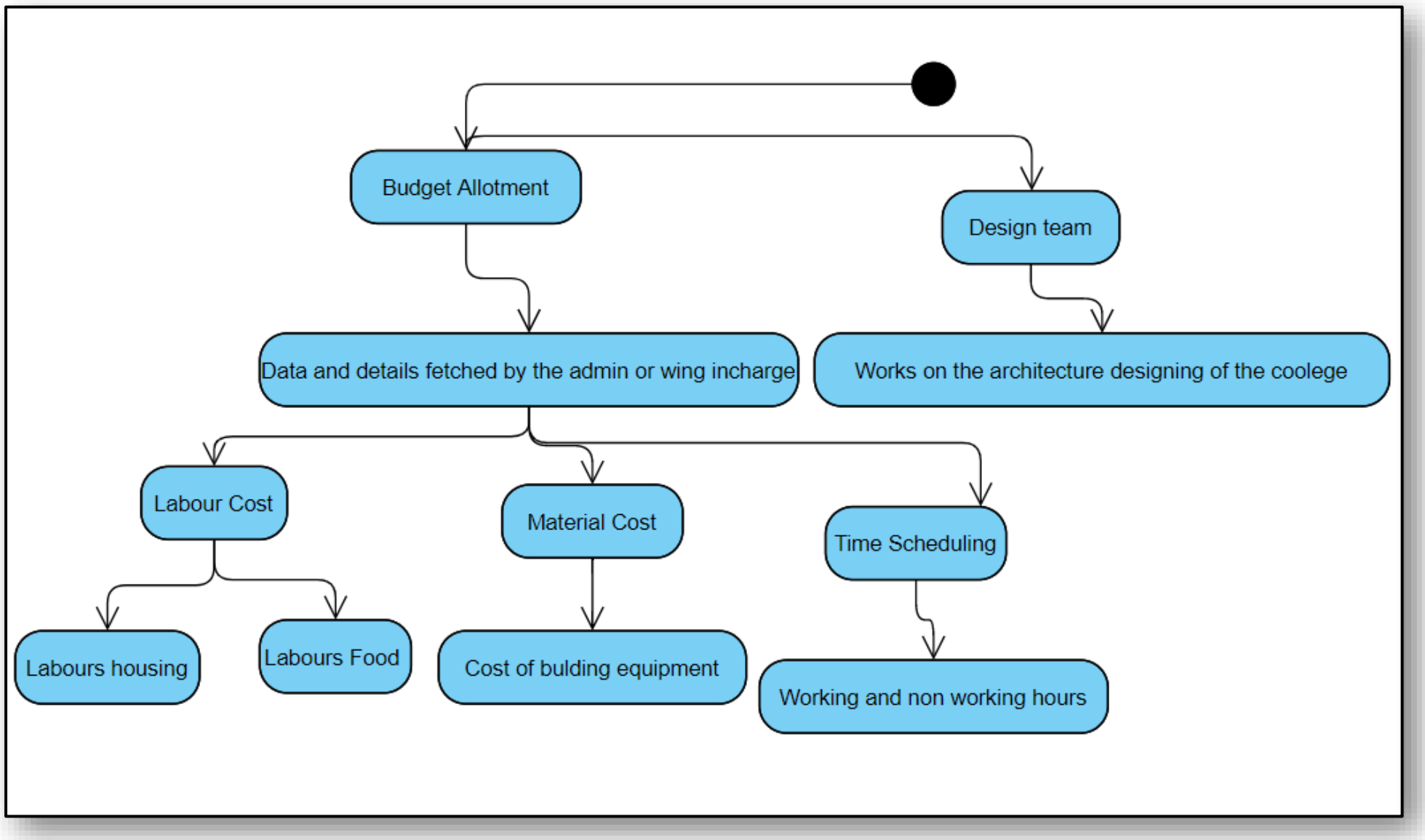
Activity Diagram Of Fetching of data Process



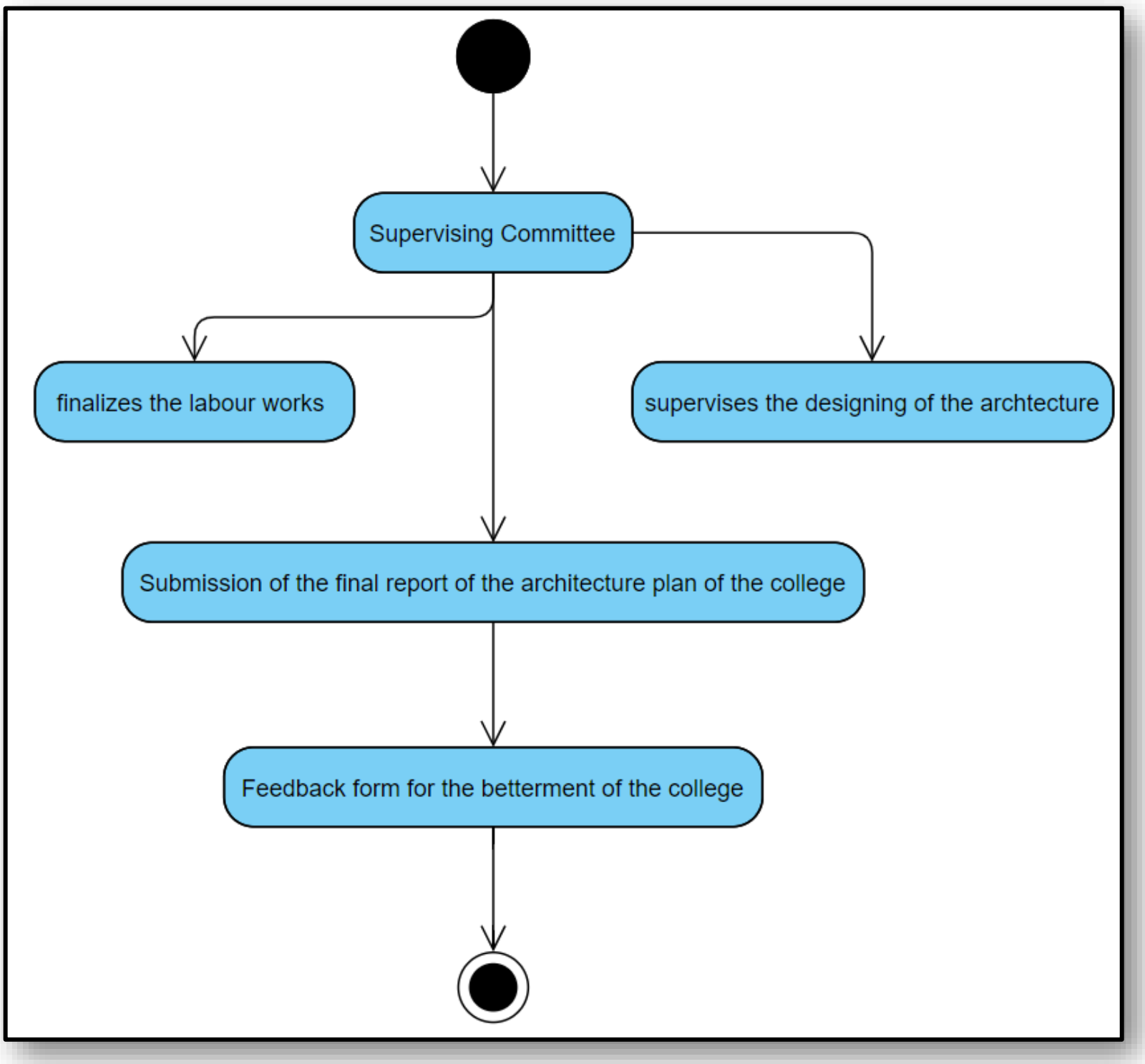
Activity Diagram of College Development Wing Formation Process



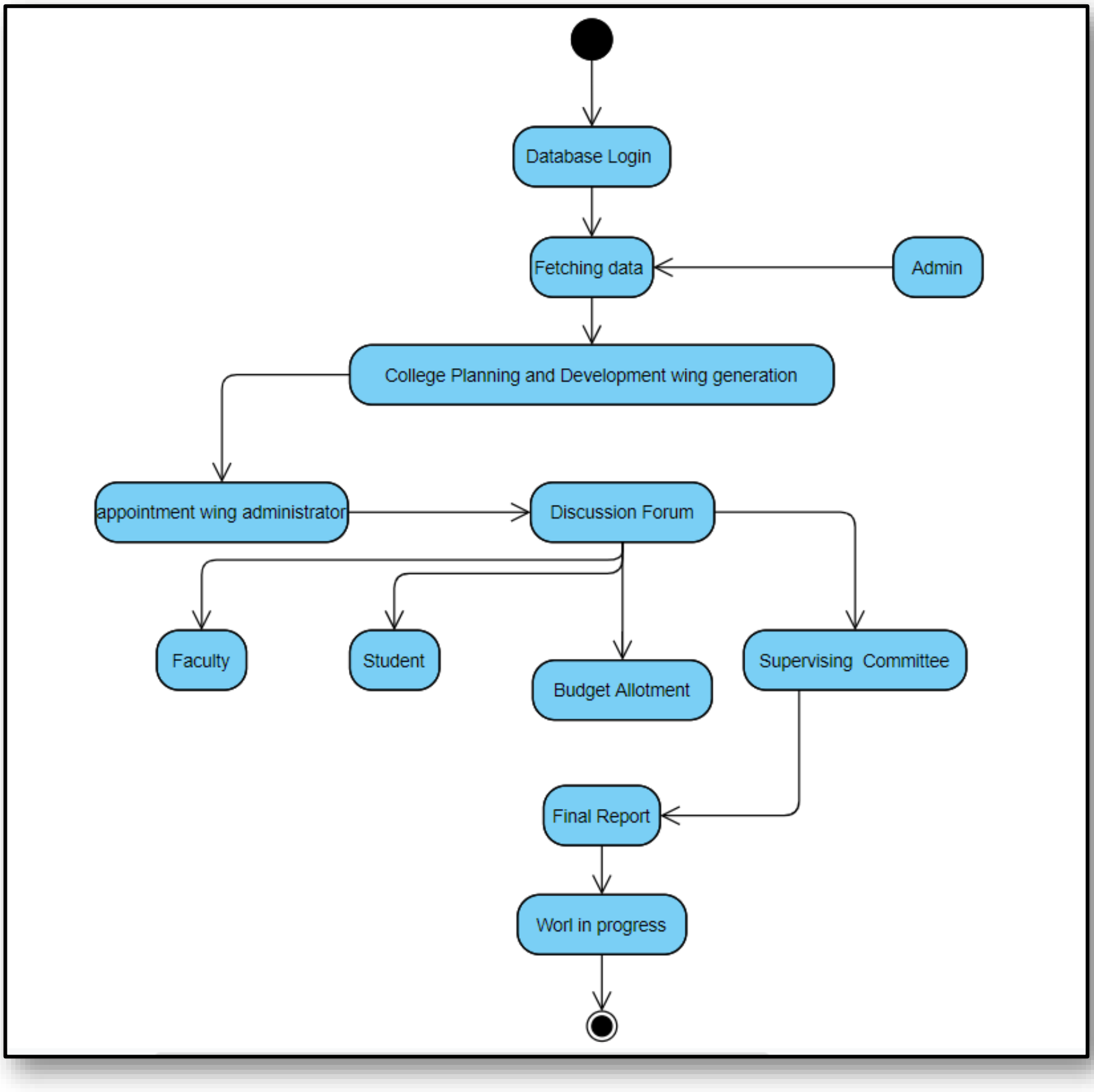
Activity Diagram of Discussion Forum Process



Activity Diagram of Budget allotment Process



Activity Diagram of Supervising committee Process



Activity Diagram of Planning and Development Module