# University of Rajshahi Result Processing System

# Objective

Design a system that can perform the following:
- The form fill-up process of an exam.
- Online submission of marks.
- Automatic tabulation and result calculation.
- Automatic renumeration.

# Current Examination System

- For a specific test, the Controller of Examinations selects an Exam Committee.
- The Exam Committee is made up of a chairperson and two to five other people.
- The department sets the date of an exam, and the Controller of Examinations is informed of this.
- All eligible students, both collegiate and non-collegiate, are listed and sent to the office of the controller of examinations.

# Current Examination System

- The eligible students are then given permission by the Controller of Examinations office to register for form fill-up via the university's web portal.
- A student has to fill out an online form including his courses and credits of that examination(yearly or semesterly).

- The form is required to be printed and be attested by-
  - Chairman of the department
  - Provost of the attached hall
- The completed form is then submitted to the bank with the attested copy and the necessary exam fees.

# Current Examination System

- Students take part in exam on the dates fixed by the department.
- The exam is invigilated by a team of invigilators, comprising of a chief invigilator and an invigilator for every 15 examinees.
- The answer scripts are collected by the invigilators and sent out to the assigned examiners for evaluation.

# Current Examination System

- The examiners evaluate the answer scripts and create a marks sheets.
- After evaluation, the evaluated answer scripts are sent to the Controller of Examinations office.
- A copy of the marks sheet is sent to the Controller of Examinations and another copy is sent to the chairperson of the Exam Committee.

# Current Examination System

- The mid-term/assignment/class-test/quiz marks are submitted to the exam committee by the course respective teachers.
- The exam committee chairperson then appoints some of its members as tabulators and begins tabulation process.
- After tabulation is completed, the tabulation sheet is rechecked and sent to the Controller of Examinations.
- The Controller of Examinations finally publishes the result after taking approval from the Vice Chancellor.

# Roles of the Controller of Examinations

- Initiate an exam and appoint Exam Committee.
- Receive moderated question papers from the Exam Committee.
- Receive answer scripts from examiners.
- Receive marks sheet from examiners and tabulation sheet from Exam Committee.
- Publishing results.

# Roles of the Exam Committee

- Receive manuscript question papers.
- Moderate the question papers.
- Send the moderated question papers to the Controller of Examination.
- Appoint examiners for exams, both internal and external, and assign answer scripts for marking.
- Appoint invigilators.
- Appoint lab examiners.
- Prepare tabulation sheet.

# Roles of an Examiner

- Receive answer scripts.
- Evaluate the answer scripts.
- Create a marks sheet.
- Send a copy of the marks sheet to the Controller of Examinations and another copy to the chairperson of the Exam Committee.
- Send the evaluated answer scripts to the Controller of Examinations office.

# Roles of an Invigilator

- Send answer scripts to the Examiners.
- Actively monitor the students during the exam.
- Hand out question papers and answer scripts.
- Record the attendance information of the exam.

# Roles of the Department

- Fix date of an exam.
- Send a list of all eligible students, both collegiate and non-collegiate, to the office of the controller of examinations.
- Send a list to controller of examinations of the students who are eligible and want to attend improvement exam in particular courses.

# Roles of a Student

- Apply for an exam by filling form.
- Sit for exam.
- Receive results of his exam.
- Request marks sheet/certificate.

# Renumeration

A specific amount of renumeration, which is pre-determined by the Syndicate, is awarded for the following activities:
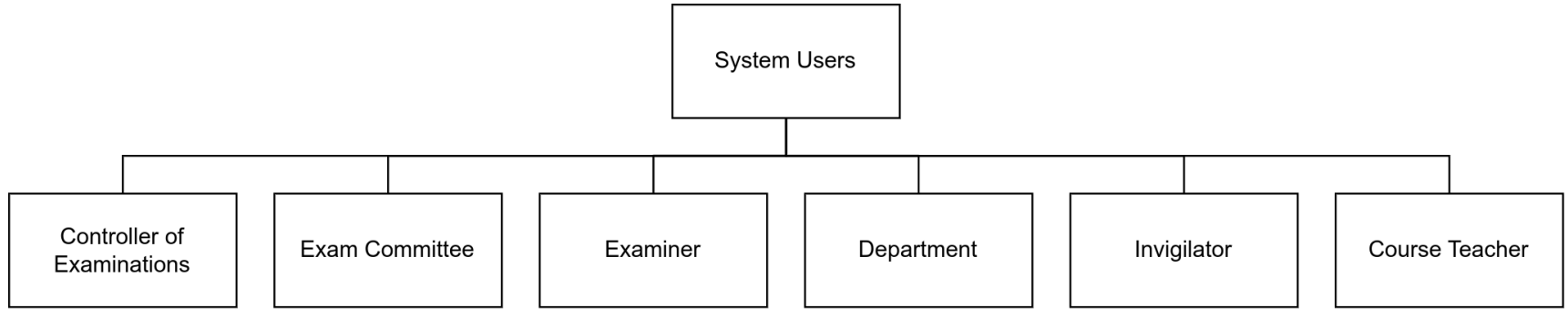- Exam Invigilation
- Question Creation
- Question Moderation
- Answer Script Evaluation etc.

Renumeration is directly awarded to the bank account by the accounts section.

# Our Proposed System

# Users of the System

# Requirements(Functional)

- The system will be accessible from a mobile app and web browser.
- There will be a central database which will contain
  - Student details.
  - Form fill-up information.
  - Marks of each semester/exam.
- All types of fees will be collected online using mobile banking method.
- Every user must have an account to access the system.
- Different types of users will have different levels of permission.

# Requirements(Functional)

**The Controller of Examinations:**

- Will have the highest level of access to the entire database.

- Will be able to set date for an exam.

- Can appoint an Exam Committee. Once appointed, all the members of the committee will receive an email of appointment and a notification.

# Requirements(Functional)

**The Controller of Examinations:**

- Will be able to start form fill-up for an exam. There will be a deadline for form fill-up. All students who are eligible for the exam will receive an email and in-app notification.

- Will be able to publish a result. All the students who have taken the exam will receive an email of their respective results as well as an in-app notification. The students will also be able to view their respective results through the online portal.

# Requirements(Functional)

**The Controller of Examinations:**

- All the teachers of the department, examiners will receive notification and email. They will be able to view everyone's result.

- Will have permission to create/edit/delete anyone's profile.

- Will be able to send a confirmation after receiving answer scripts from an examiner.

- Will be able to approve and send renumeration based on the activities performed by all the parties.

# Requirements(Functional)

**The Exam Committee:**

- Will be able to assign examiners for an exam.
  - In case of an examiner who is from University of Rajshahi and has an account in the system, he will get an email alongside an in-app notification.
  - In case of an examiner who is not from University of Rajshahi and does not have an account in the system, the department will be responsible for inputting their marks in the system.

- Will be able to scrutiny online. The tabulation sheet will be created automatically from the marks sheet and CA sheet on the server. The committee will be able to assess the tabulation sheet.

# Requirements(Functional)

**The Exam Committee:**

- The committee will be able to confirm the correctness of the tabulation sheet.

- After confirmation, the tabulation sheet will not be further editable without the permission from the Controller of Examinations. An email and an in-app notification will be sent to the Controller of Examinations upon confirmation.

- Will be able to assign invigilators for exams.

# Requirements(Functional)

**Examiner:**

- Will be able to input marks to the marks sheet of an exam. Only the examiner will be able to view the marks before submission.

- After marks submission, the Controller of Examinations and the chairperson of the Exam Committee will receive an email and an in-app notification.

- Will not be able to edit marks sheet after submission without permission from the Controller of Examinations.

# Requirements(Functional)

**Examiner:**

- After submission of answer scripts to the Controller of Examination, he will receive a confirmation email and in-app notification.

# Requirements(Functional)

**Students:**

- Will be able to apply for form fill-up of an exam through the online portal.

- Only the eligible students can apply for exam.

- Will be able to select the type of exam, regular or improvement and select eligible courses.

- A unique identifying number will be added to each form.

# Requirements(Functional)

**Students:**

- Will have to pay the necessary fees online through mobile banking.
- The payment information will be added to the form. The form needs to be printed and attested by the provost of his allocated hall and the chairman of his department; and needs to be submitted to the department office. Upon submission, the office will confirm his form fill-up status.

# Requirements(Functional)

**Students:**

- Will be able to view their respective results from the online portal.

- Will be able to request for transcripts/marks sheets from the online portal.

- Will get a notification and an email when an exam date has been fixed, successful form fill-up, last date of form fill-up.

- Will be able to get a list of all previous attended exams and their respective results.

# Requirements(Functional)

**Students:**

- Will not be able to view result before it has been published by the Controller of Examinations.

- Will be able to request for transcripts/marks sheets from the online portal.

# Requirements(Functional)

**Departments:**

- Can upload the list of eligible students who can take part in the exam to the server.

- Fix date for an exam which will be approved by the Controller of Examinations.

- Confirm form fill-up status of a student.

- Assign course teachers for courses.

# Requirements(Functional)

**Course Teachers:**

- Upload the attendance of a student to the server. The attendance information will be one of the factors that will determine if a student can take part in the exam.

- Upload marks related to in-course/mid-term/class test/assignment /quiz to the server.

- Will get an in-app notification and a confirmation email upon every submission.
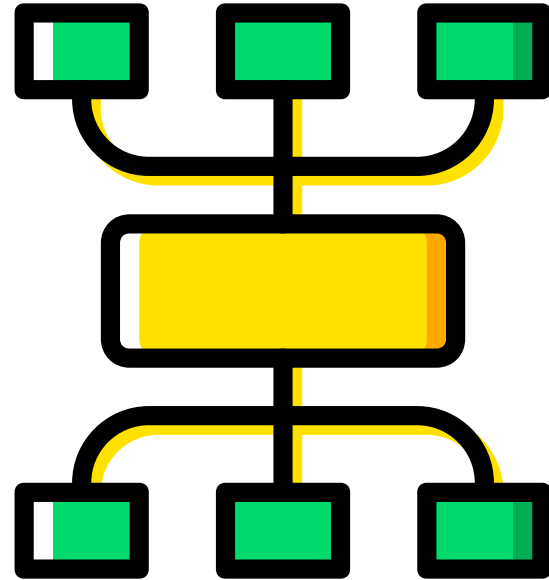
# Requirements(Functional)
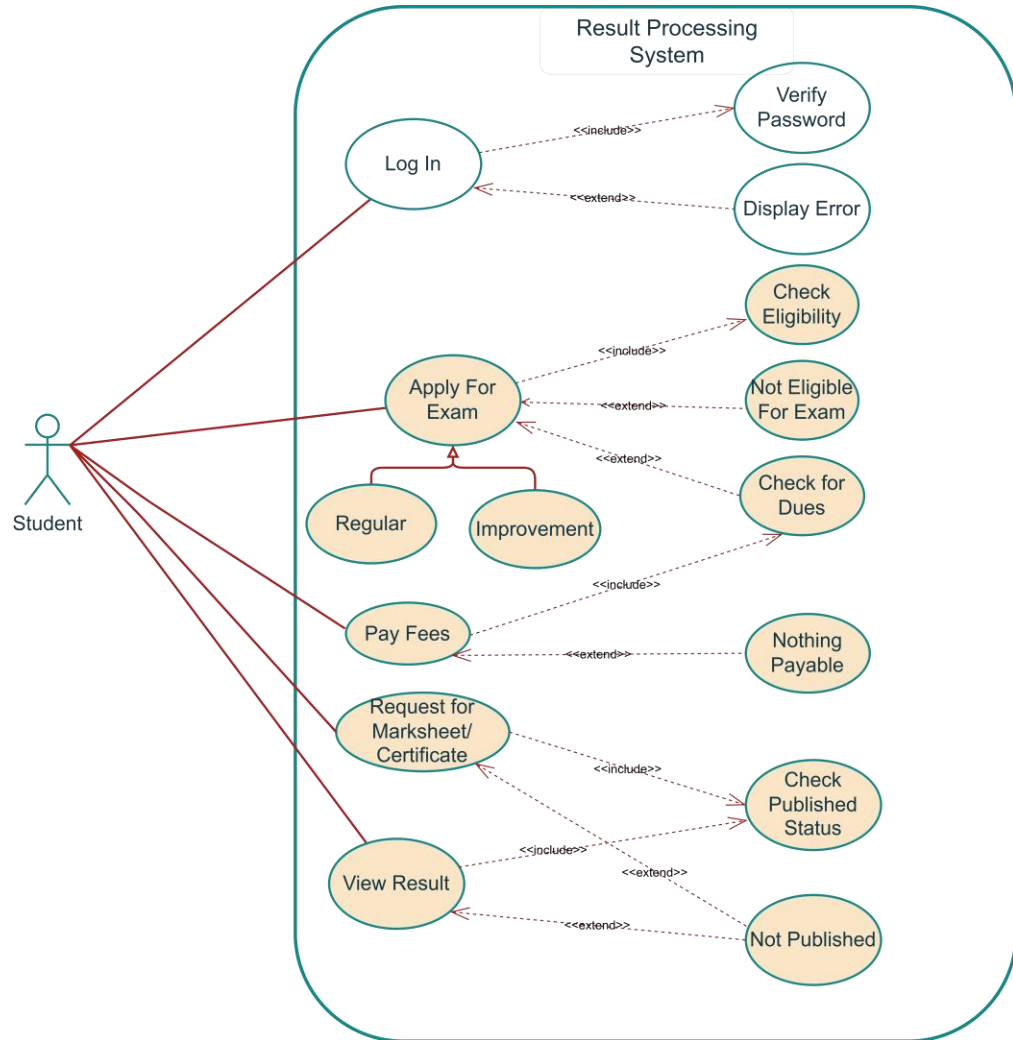
**Invigilators:**

- Can upload the list of students who have attended the exam.

# Requirements(Non-functional)

- The system must ensure that the data stored in the server must be encrypted.
- The system must be reliable with an uptime of almost 100%.
- The system should be fast and responsive.
- The server should be capable of handling high levels of data and load.
- The system must be simple to use and navigate, enabling users to complete their duties quickly.
- There should be a high performance backup server.
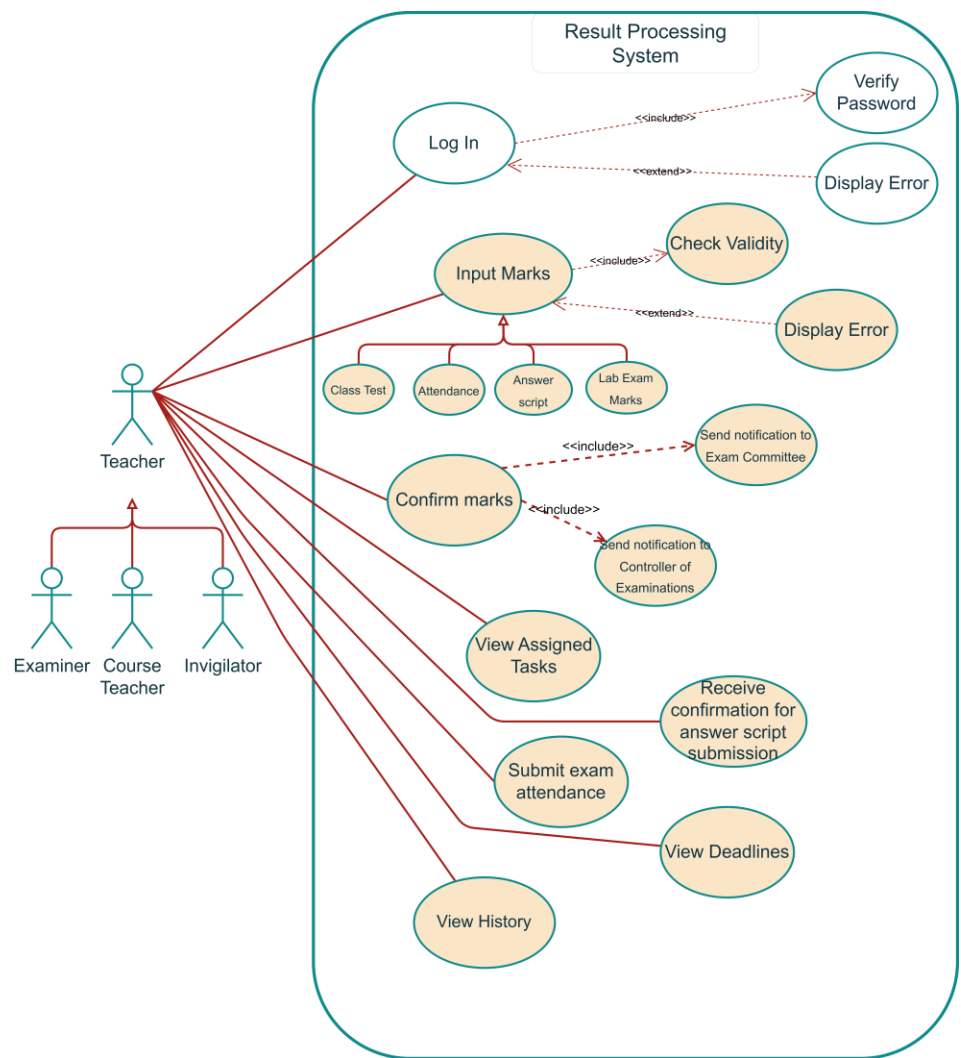- No user can access data beyond their permission.
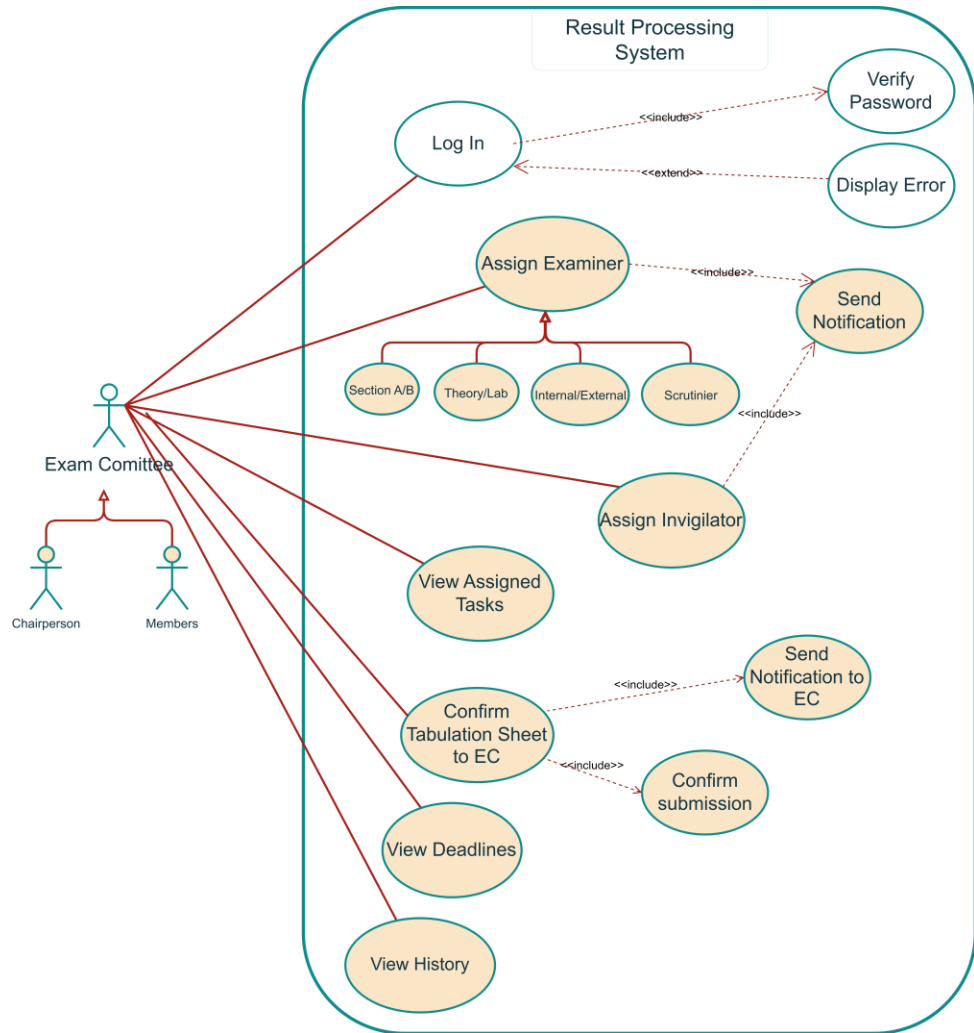
# UML
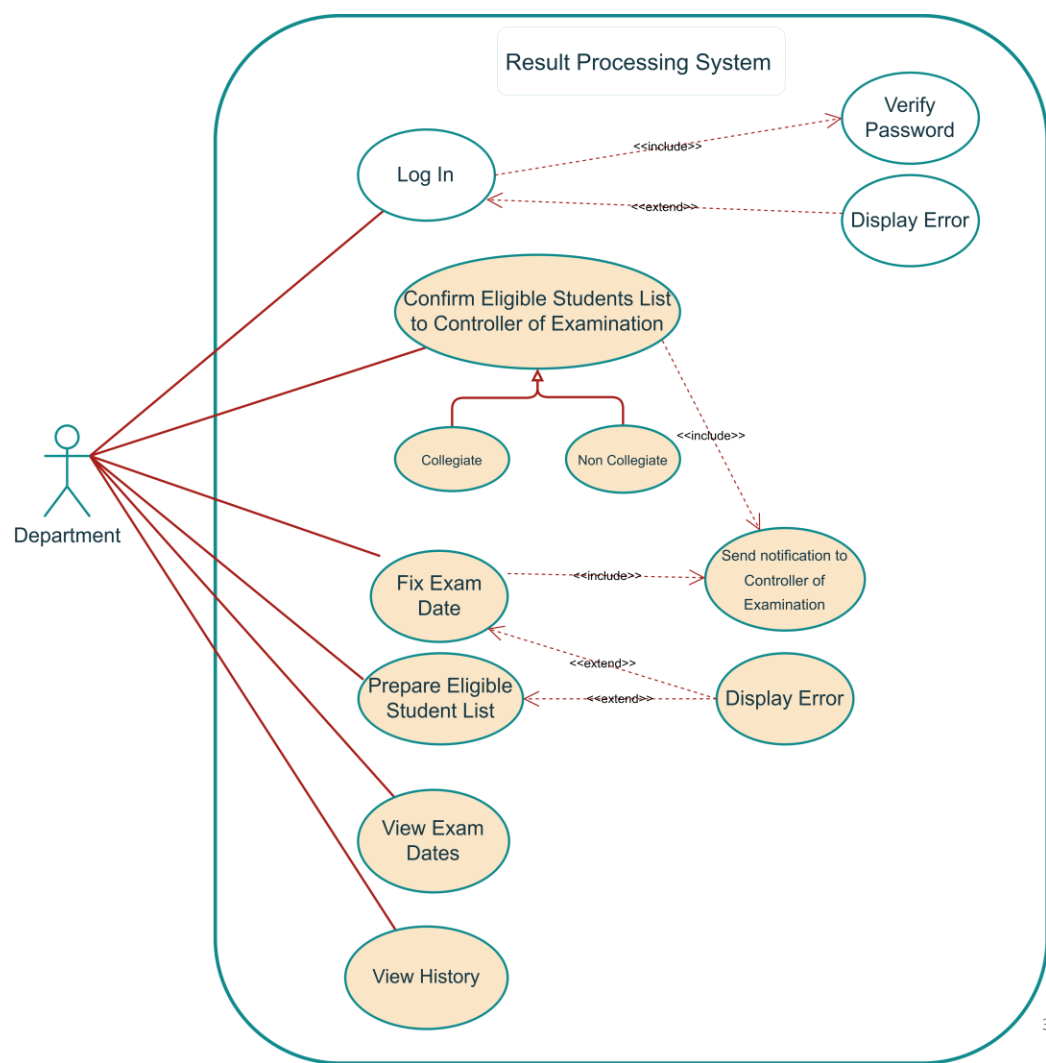# Diagrams

# Use Case Diagram (Student)



Result Processing System

Student

- Log In
  - <<include>> → Verify Password
  - <<extend>> ← Display Error
- Apply For Exam
  - <<include>> → Check Eligibility
  - <<extend>> ← Not Eligible For Exam
  - <<extend>> → Check for Dues
  - Regular
  - Improvement
- Pay Fees
  - <<include>> → Check for Dues
  - <<extend>> → Nothing Payable
- Request for Marksheet/Certificate
  - <<include>> → Check Published Status
- View Result
  - <<include>> → Check Published Status
  - <<extend>> → Not Published
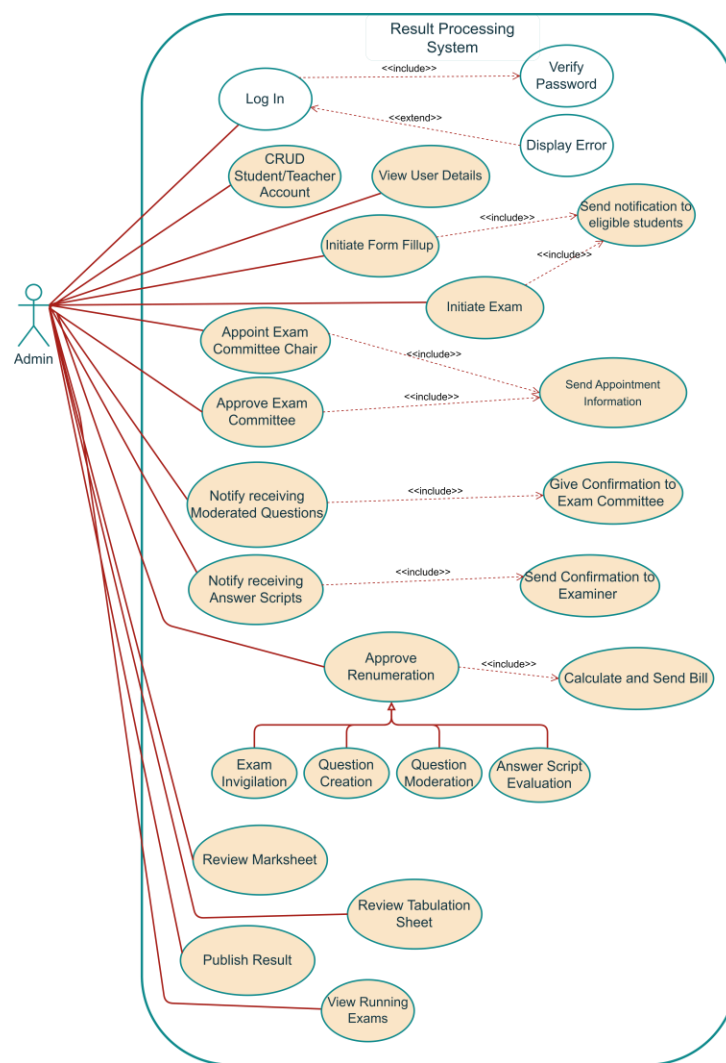
34

# Use Case Diagram (Teacher)
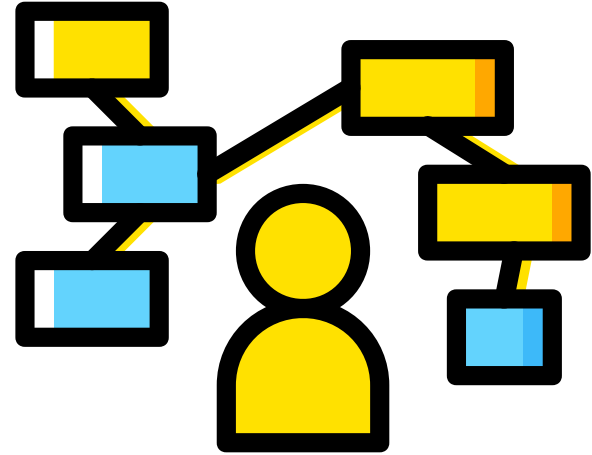
# Use Case Diagram (Exam Committee)
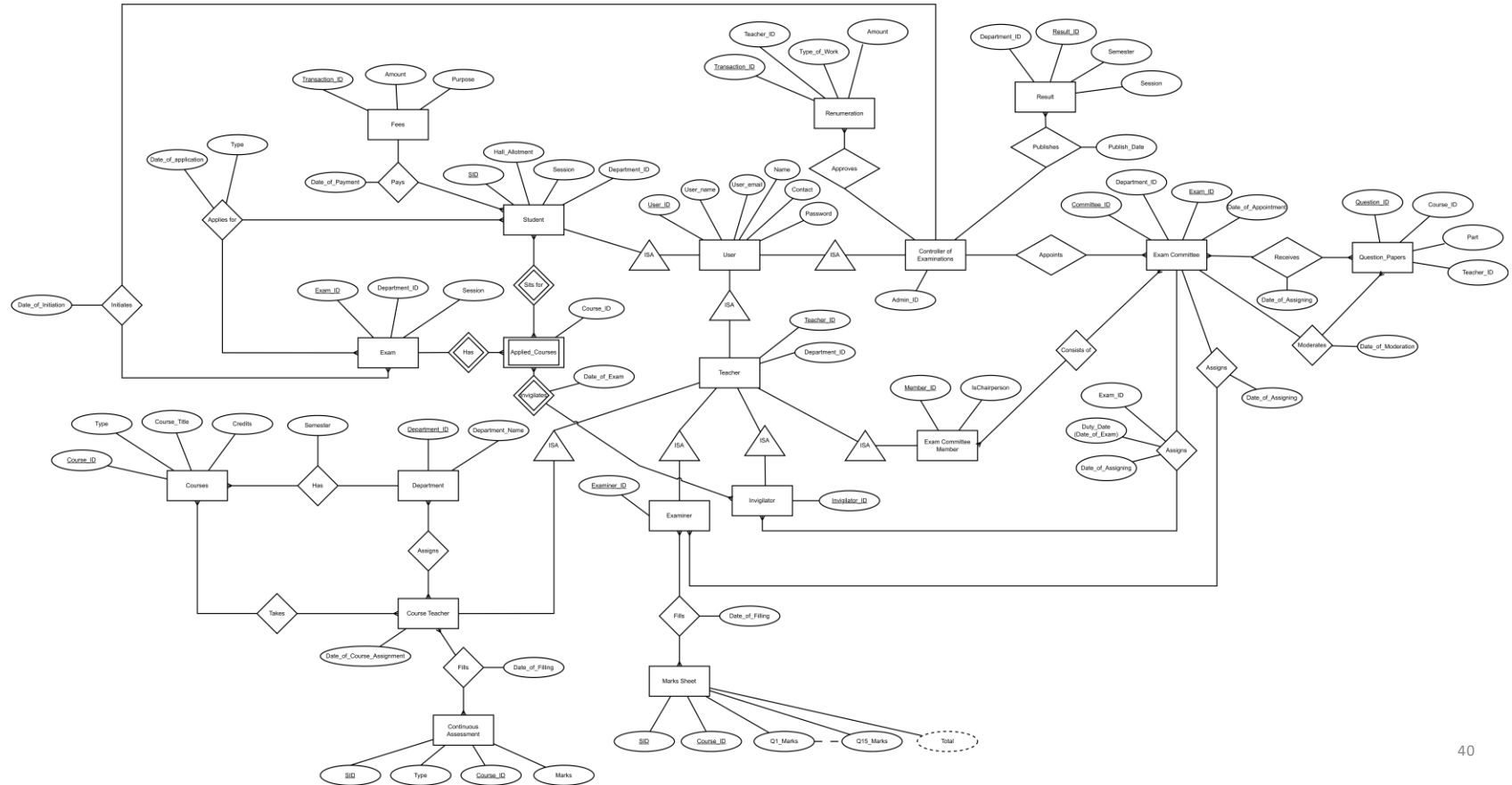
# Use Case Diagram (Department)

# Use Case Diagram (Controller of Examinations)

# E-R Diagram

# E-R Diagram

Thank You