Use Case Diagram and Description

AIM: TO MAKE THE USE CASE DIAGRAM FOR UNIVERSITY REGISTRATION PORTAL AND WRITE ITS USE CASE DESCRIPTION

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introduction

A **use case diagram** visually captures what happens when an **actor**[1] interacts with the system. Hence, they capture the functional aspects of the system. The system is shown as a rectangle with the name of the system inside, the actors are shown as stick figures, the **use cases**[2] are shown as solid bordered ovals labeled with the name of the case, and relationships are lines or arrows between actors and the use cases.

1. Actor: An actor or external agent, lies outside the system model, but interacts with it in some way. An actor may be a person, machine, or even an information system that is external to the system.

2. Use case: A use case is initiated by the user with a goal in mind and completes successfully when that goal is satisfied. It describes the sequence of interactions between actors and the system necessary to deliver the service that satisfies the goal. it also includes possible variants of the sequence as well as sequences to handle errors and failures.

A use case description describes each use case providing its flow of events, alternative flows, pre, and post-conditions, etc. This is a structured way to write the use case.

Practical - 4

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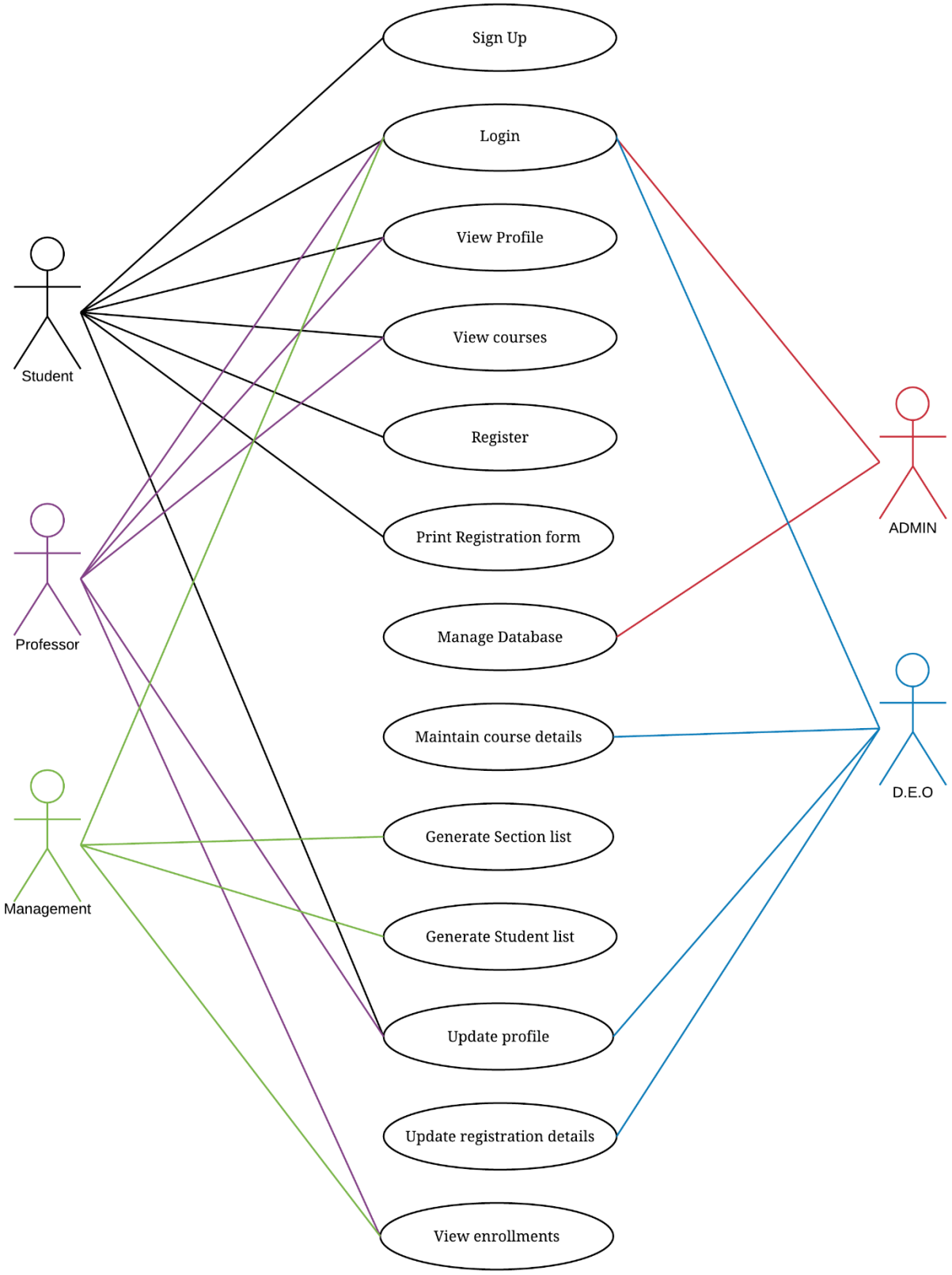
University Registration Portal



2. Use Case Descriptions

2.1 Sign Up

2.1.1 Brief Description

This describes how the use registers to use the system.

2.1.2 Actors Involved

Student

2.1.3 Pre-Condition

Student needs to meet the eligibility set by the university (new students) or have valid college IDs.

2.1.4 Post-Condition

After successful signing up the students are redirected to their profiles.
In case of failure the student is prompted to re-enter the data/ contact admin.

2.1.5 Flow of events

2.1.5.1 Basic Flow

1. The student is presented a form to be filled containing basic details and results.
2. The student then sets a Login and Password.
3. The form is validated, and the student is signed up.

2.1.5.2 Alternate Flow

1. Invalid student ID/ Missing Data: student is prompted to correct the ID/ fill in data.

2.1.5 Associate Use Case

N/A

2.2 Login

2.1.1 Brief Description

This describes how a use logs into the system.

2.1.2 Actors Involved

Student, Professor, Management, Admin, Data Entry Operator.

2.1.3 Pre-Condition

All Users must have a Login ID and passwords created for them in the system.

2.1.4 Post-Condition

After successfully Logging in, the student and Professors are redirected to their profiles.
The management, Admin, and DEO are redirected to the management site.

2.1.5 Flow of events

2.1.5.1 Basic Flow

1. The user is prompted to enter their Login and Passwords.
2. The user then enters their Login and Passwords.
3. The data is the validated and the user logged in.

2.1.5.2 Alternate Flow

1. Invalid student ID/ Missing Data: student is prompted to correct the ID/ fill in data.

2.1.5 Associate Use Case

N/A

2.3 View Profile

2.1.1 Brief Description

This Describes how a student or professor accesses their profile

2.1.2 Actors Involved

Student, professor

2.1.3 Pre-Condition

The user must have successfully logged into the system.

2.1.4 Post-Condition

The user is presented their generated profiles with their information on it.

2.1.5 Flow of events

2.1.5.1 Basic Flow

1. The user logs in and is the redirected to their profiles.

2.1.5.2 Alternate Flow

N/A

2.1.5 Associate Use Case

N/A

2.4 View Courses

2.1.1 Brief Description

This describes the how a student or professor can view the list of courses and their details

2.1.2 Actors Involved

Student, Professor.

2.1.3 Pre-Condition

The user must have successfully logged into the system.

2.1.4 Post-Condition

The user is redirected to the courses list page.

2.1.5 Flow of events

2.1.5.1 Basic Flow

1. The user clicks on the courses menu on their profile window.
2. The user is presented with the list of courses.
3. The user then selects the course of their choice and are redirected to the course details page.

2.1.5.2 Alternate Flow

N/A

2.1.5 Associate Use Case

N/A

2.5 Register

2.1.1 Brief Description

This describes how a student registers for the next semester.

2.1.2 Actors Involved

Student

2.1.3 Pre-Condition

The student must have successfully logged into the system.

2.1.4 Post-Condition

After successfully registering for the semester the student is redirected to the confirmation windows showing the courses they've signed up for.

In case of failure the student is prompted to re-enter the data/ contact admin.

2.1.5 Flow of events

2.1.5.1 Basic Flow

1. The student selected the REGISTER option from their profile.
2. The student is then presented with a list of courses they can take in the semester (Cores and electives)
3. The student selected the minimum number of courses required and additional (if they chose to do so up to a maximum of 6 courses).
4. The student then submits their selections.
5. The selections are validated, and the student is redirected to the confirmation page.

2.1.5.2 Alternate Flow

1. Invalid student ID/ Missing Data: student is prompted to correct the data.
2. Minimum courses not met: student is prompted to select more courses.
3. Maximum courses exceeded: Student is prompted to deselect some courses.

2.1.5 Associate Use Case

N/A

2.6 Print Registration form

2.1.1 Brief Description

This Describes how a student prints the generated registration form.

2.1.2 Actors Involved

Student.

2.1.3 Pre-Condition

The user must have successfully registered for the semester.

2.1.4 Post-Condition

The user is presented their generated registration form with their information in it.

2.1.5 Flow of events

2.1.5.1 Basic Flow

1. The student completes the registration successfully.
2. The student is redirected to the confirmation page with the option to get form.
3. The student then selects get form and is presented the registration form.

2.1.5.2 Alternate Flow

N/A.

2.1.5 Associate Use Case

N/A.

2.7 Manage Database

2.1.1 Brief Description

This Describes how the admin maintains the database.

2.1.2 Actors Involved

Admin.

2.1.3 Pre-Condition

The user must have successfully logged into the system.

2.1.4 Post-Condition

N/A

2.1.5 Flow of events

2.1.5.1 Basic Flow

1. The Admin logs in and is the redirected to the admin window.
2. The admin then executes maintenance tasks like:
    a. Add/Remove tables
    b. Alter tables
    c. Reset system.

2.1.5.2 Alternate Flow

N/A

2.1.5 Associate Use Case

N/A

2.8 Maintain Course Details

2.1.1 Brief Description

This Describes how the D.E.O maintains the course details.

2.1.2 Actors Involved

Data Entry Operator/

2.1.3 Pre-Condition

The DEO must have successfully logged into the system.

2.1.4 Post-Condition

N/A/

2.1.5 Flow of events

2.1.5.1 Basic Flow

1. The DEO logs in and is the redirected to the Maintenance window.
2. The DEO then executes required tasks like:
    a. Add course.
    b. Remove course.
    c. Alter existing course.

2.1.5.2 Alternate Flow

N/A

2.1.5 Associate Use Case

N/A

2.9 Generate section lists

2.1.1 Brief Description

This Describes how the management can generate sections for courses.

2.1.2 Actors Involved

Management.

2.1.3 Pre-Condition

The user must have successfully logged into the system.

2.1.4 Post-Condition

The user is presented the generated section list of students per course.

2.1.5 Flow of events

2.1.5.1 Basic Flow

1. The user logs in and is the redirected to their management window.
2. The user then selects a course.
3. The user then selects the option to generate sections defining the maximum number of students per section.
4. Upon completion the user is presented the generated section list.

2.1.5.2 Alternate Flow

N/A

2.1.5 Associate Use Case

N/A

2.10 Generate Student list

2.1.1 Brief Description

This Describes how the management can generate student list for courses/departments.

2.1.2 Actors Involved

Management.

2.1.3 Pre-Condition

The user must have successfully logged into the system.

2.1.4 Post-Condition

The user is presented the generated list of students per course/department.

2.1.5 Flow of events

2.1.5.1 Basic Flow

1. The user logs in and is the redirected to their management window.
2. The user then selects a course/department.
3. The user then selects the option to generate student list.
4. Upon completion the user is presented the generated student list.

2.1.5.2 Alternate Flow

N/A

2.1.5 Associate Use Case

N/A

2.11 Update Profile

2.1.1 Brief Description

This Describes how a user can update profile details

2.1.2 Actors Involved

Student, Professor, DEO.

2.1.3 Pre-Condition

The user must have successfully logged into the system.

2.1.4 Post-Condition

The user details are updated in the system database.

2.1.5 Flow of events

2.1.5.1 Basic Flow

1. The user selects the update profile option from their window.
2. The user is then redirected to the updation form.
3. The user enters the updated information and submits it.
4. The data is then validated and on success the profile is updated.

2.1.5.2 Alternate Flow

1. Protected data: On updation of fields like name, date of birth, parent names the process fails, and the user is prompted to bring proof of documents to the administration before the updation is completed by the DEO.

2.1.5 Associate Use Case

N/A

2.12 Update Registration Details

2.1.1 Brief Description

This Describes how the registration details can be altered after registration period has expired.

2.1.2 Actors Involved

Data Entry Operator.

2.1.3 Pre-Condition

The student requesting updation must have successfully registered for the semester.

2.1.4 Post-Condition

The student registration details are updated, and a new registration form is generated.

2.1.5 Flow of events

2.1.5.1 Basic Flow

1. The DEO selects the student profile form the student list.
2. The DEO then updates the registration details as follows:
    a. Add/Remove course.
    b. Change section.
3. The DEO then submits the updates and new registration form is generated.

2.1.5.2 Alternate Flow

N/A

2.1.5 Associate Use Case

N/A

2.13 View Enrollments

2.1.1 Brief Description

This describes how the professors and management can view the enrollment list (student lists).

2.1.2 Actors Involved

Management, Professors.

2.1.3 Pre-Condition

The user must have successfully logged into the system.
The list must've been generated by the management.

2.1.4 Post-Condition

The user is presented the enrollment list/ student list.

2.1.5 Flow of events

2.1.5.1 Basic Flow

1. The user selects a course.
2. The user then selects the option to view lists this can be:
3. View section list.
4. View Department list.
5. View Course list.

2.1.5.2 Alternate Flow

1. Lists not generated: In case the lists are not generated then the user is presented with the list not generated page, contact admin. The management is presented with the option to generate lists.

2.1.5 Associate Use Case

N/A

Learnings

1. The use case diagram and descriptions detail out all use cases and how the actors interact with the cases to reach the desired goals.
2. We have also visually shown the said relationships.