

PROJECT PART 2

- **Team:** Sairam Udaya Janardhana Muttavarapu, Chinmay Shah, Rahul Yamasani, Sharath Reddy Vontari
- **Title:** EEZON – An Interactive EE Inventory Management
- **Project Summary:** EEZON is an Inventory management system for ECEE dept. at CU Boulder, which helps in the management of Check IN/ Check OUT of course related development boards/kits/Electronic Components.
- **Project Requirements:**

User Requirements

User Requirement		
ID	Requirement	Actor
UR-01	As a student/professor, I can signup to the system based on my role	Professor, Student
UR-02	As a registered user, I can login to the system	Admin, Professor, Student
UR-03	As a registered user, I can request for a new password when I forget my old password	Admin, Professor, Student
UR-04	As the admin, I can add courses to the system	Admin
UR-05	As the admin, I can remove courses from the system	Admin
UR-06	As the admin, I can approve role of existing user as a Professor	Admin
UR-07	As a Student, I can request to enroll for a course	Student
UR-08	As the Professor, TA and Admin, I can approve role of user as a student for a specific course	Professor, Admin, TA
UR-09	As the Professor/Admin, I can add/remove TA/ (Professor & TA) into a specific course	Professor, Admin
UR-10	As a professor, Admin, I can add a new kit type for a course	Professor, Admin
UR-11	As a professor/admin, I can remove a kit type from the course	Professor, Admin

User Requirement		
ID	Requirement	Actor
UR-12	As a Professor/Admin/TA, I can add serial numbers to the kits for a course.	Professor, Admin, TA
UR-13	As a Professor/Admin/TA, I can remove serial numbers of kits from the course.	Professor, Admin, TA
UR-14	As a user, I can view the check in and check out details of my kits in the system.	Student
UR-15	As a user, I can view kit details course wise.	Admin, Professor, TA
UR-16	As a professor, Admin, TA, I can update check in and check out details of course specific kits in the system.	Admin, Professor, TA
UR-17	As a student, I can request unavailable items	Student
UR-18	As a professor/admin, I can approve requests for unavailable items	Professor, Admin
UR-19	As a user, I can view the penalties incurred for missing checkIN deadlines and damage/ lost kits per my role	Admin, Professor, TA, Student
UR-20	As a Professor, Admin, I can override the penalties incurred for students	Admin, Professor
UR-21	As a student, I can request for checkIN extension	Student
UR-22	As a non-student, I can approve checkIN extension for students	Admin, Professor
UR-23	As Professor and Admin, I can view Graphical Report of checkin/checkout kits to understand the popularity of a certain kit in the course	Professor, Admin
UR-24	As Professor and Admin, I can view Graphical Report of damaged kits that helps in understanding the status of kits	Professor, Admin

Business Requirements

Business Requirement			
ID	Requirement	Topic Area	User
BR-01	Must be implemented in Java	Implementation	-
BR-02	Must be a standalone application	Implementation	-
BR-03	All students/professors can register only using @colorado.edu	User Registration	Students, Professors
BR-04	All students/professors can login only using @colorado.edu	User Login & Forgot Password	Students, Professors

Functional Requirements

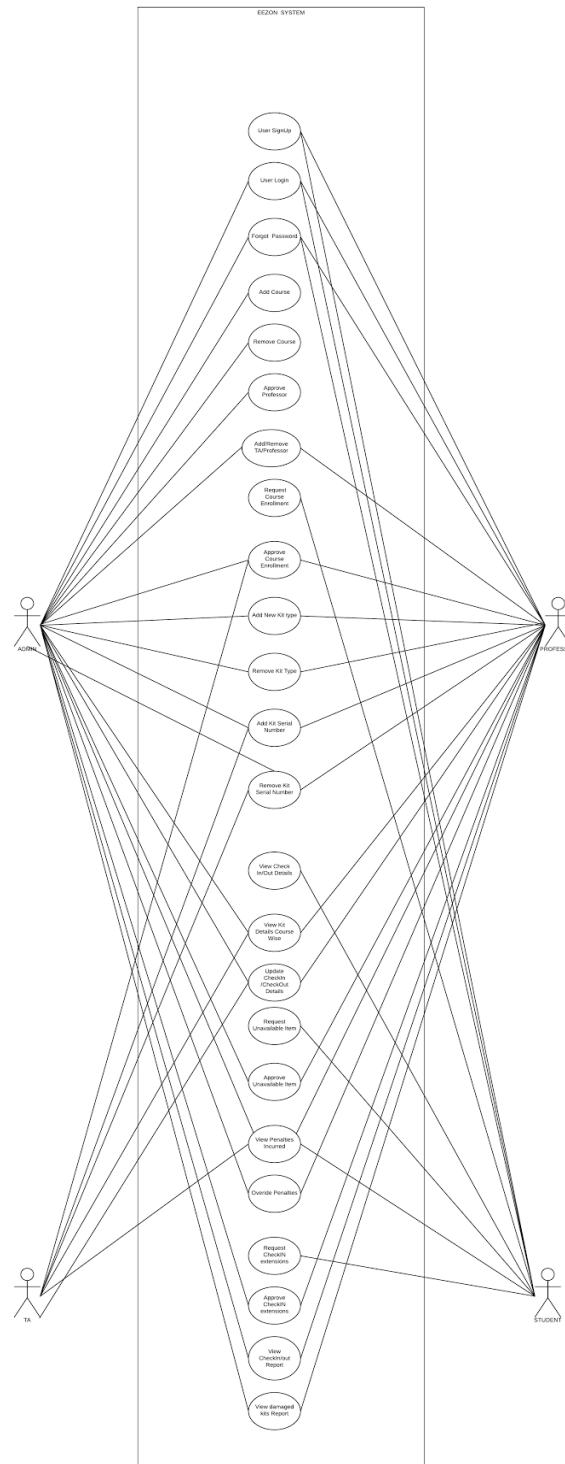
Functional Requirement		
ID	Requirement	Topic Area
FR-01	System will email the auto generated password to the User when he requests for a new password. (whenever old password is forgotten)	Forgot Password
FR-02	The system should automate the email reminders of checkin deadlines to students and parallely cc to corresponding course wise professor and TA's	Reminders
FR-03	The system should automate the generation of penalties and email it to the students and parallely cc to professor and TAs.	Penalties
FR-04	The system should automatically record the date and time of Log in/ Log out	Logging

Non-Functional Requirements

Non-Functional Requirement		
ID	Requirement	Topic Area
NFR-01	Back up of data from database is performed once a week	Reliability
NFR-02	Encryption of password to enable security	Security
NFR-03	System should be on 24*7 for highest grade of performance	Performance

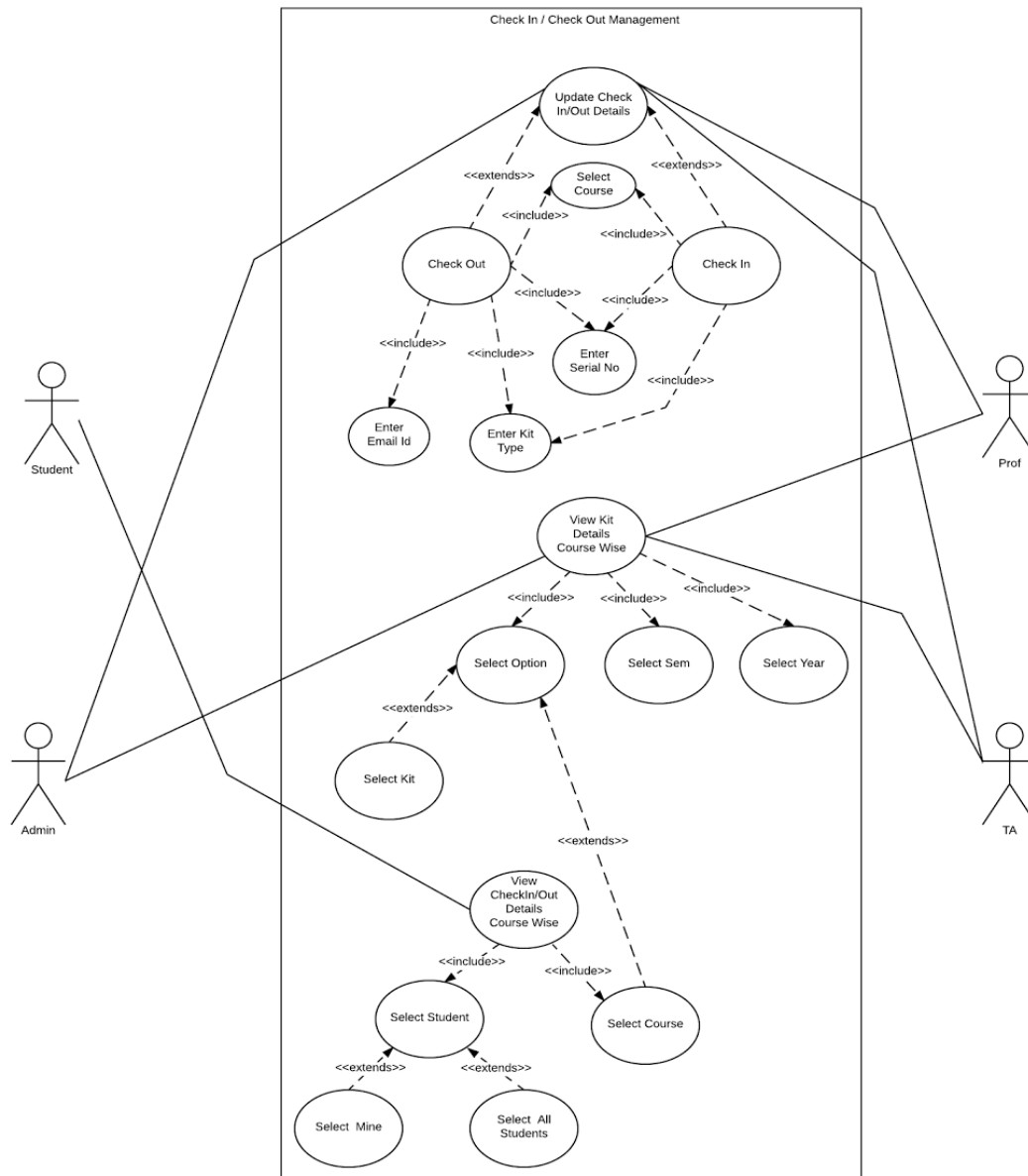
Use Cases Diagrams

Actors: Admin, Professors, Teaching/Student Assistants, Students

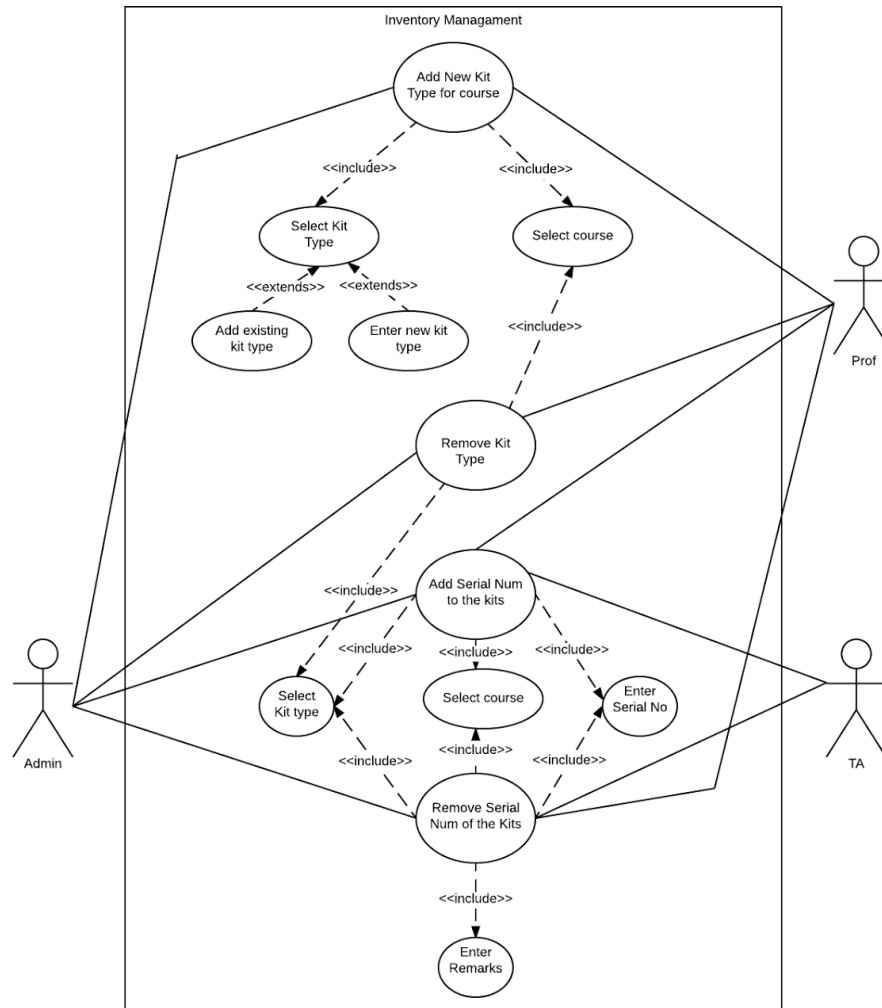


Sub-Diagrams

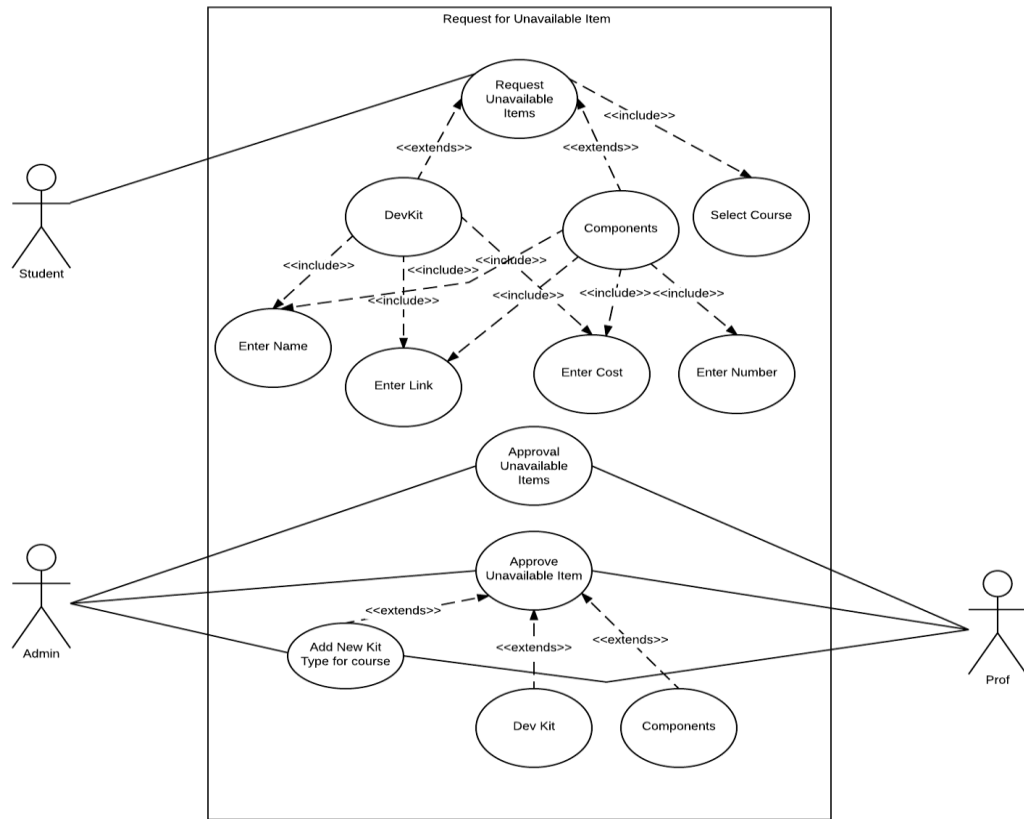
- CheckIn/CheckOut Management



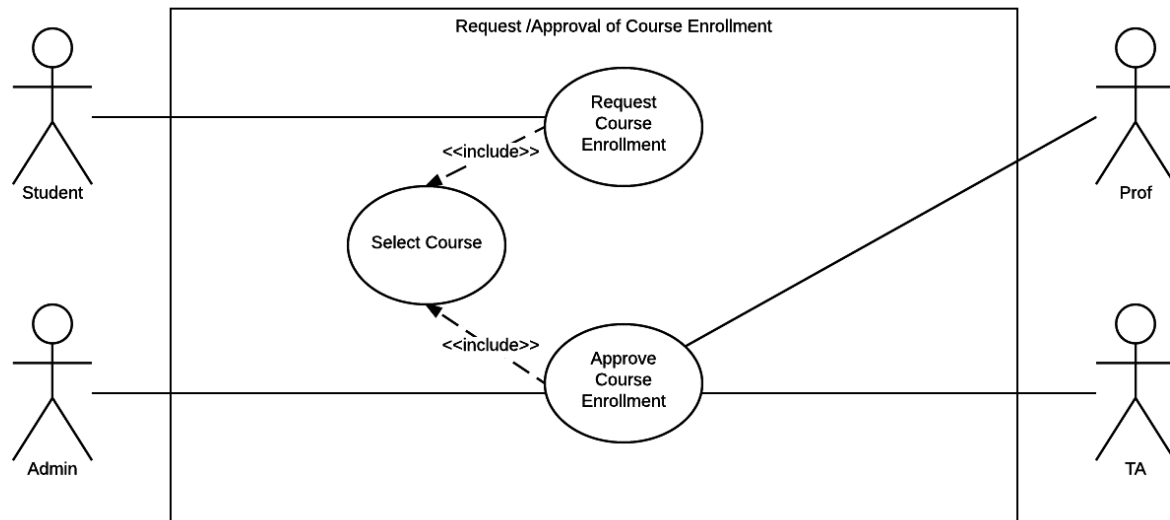
- **Inventory Management**



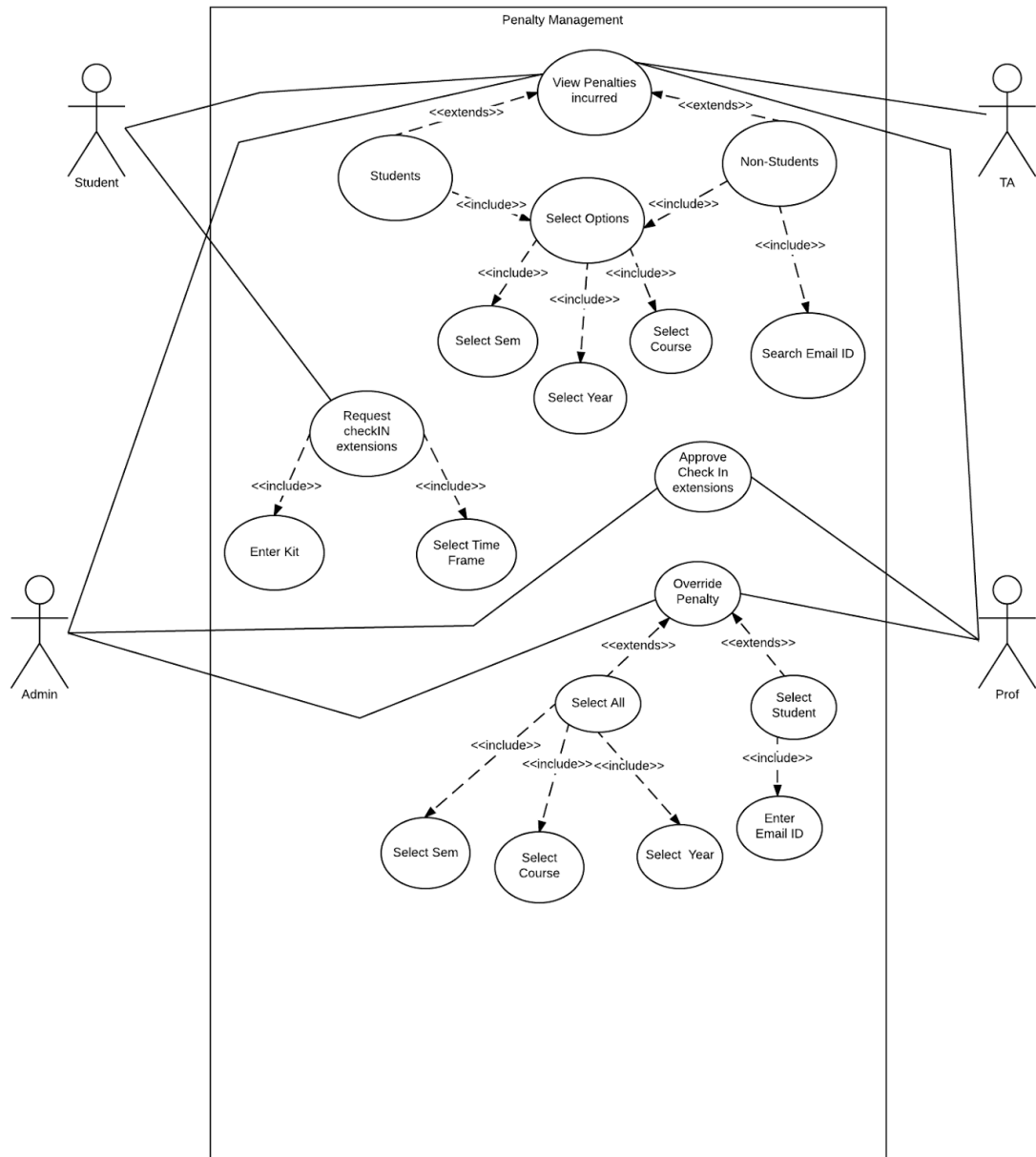
- Request for Unavailable Item



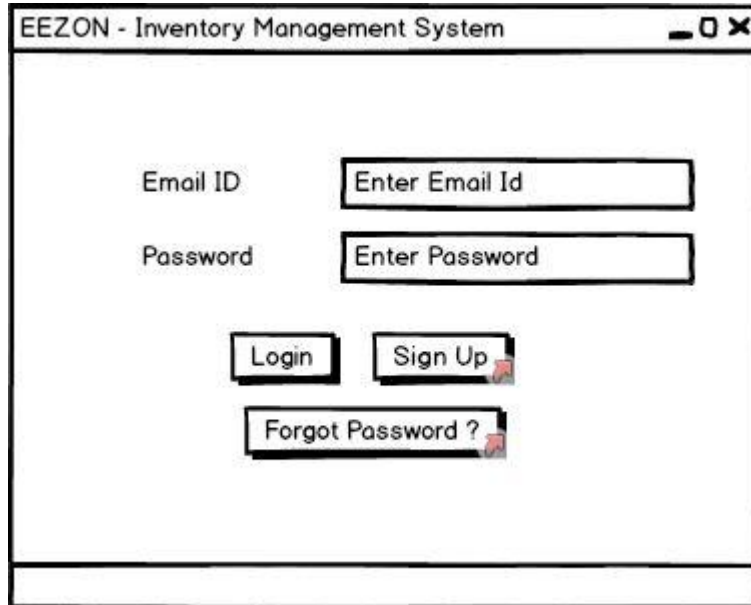
- Request/Approval of Course Enrollment



- Penalty Management/Request for Extension



UI MOCKUPS:

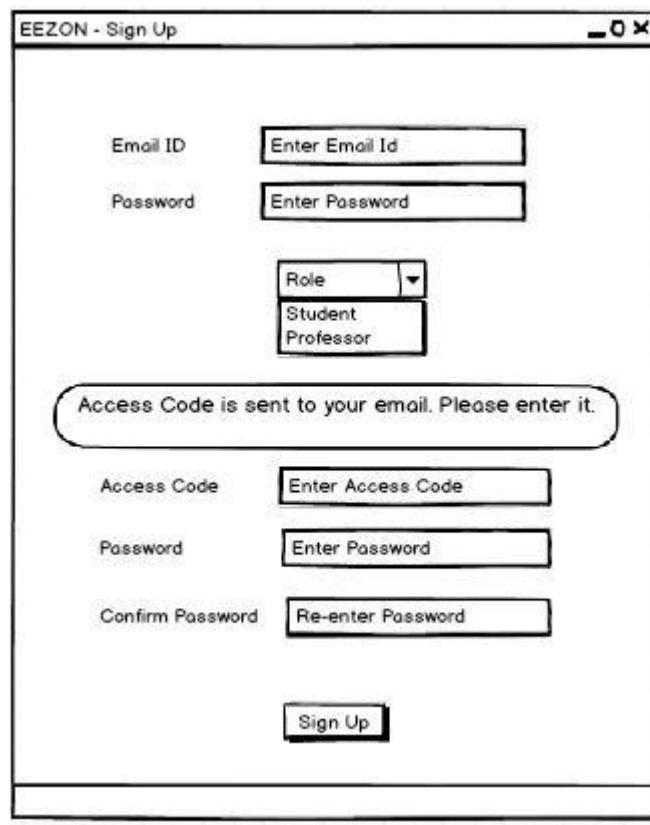


EEZON - Inventory Management System

Email ID

Password

This mockup shows the login interface of the EEZON - Inventory Management System. It features a title bar with the system name and standard window controls. The main area contains three input fields: 'Email ID' with a placeholder 'Enter Email Id', 'Password' with a placeholder 'Enter Password', and a 'Forgot Password ?' link. Below the password field are two buttons: 'Login' and 'Sign Up'.



EEZON - Sign Up

Email ID

Password

Role
Student
Professor

Access Code is sent to your email. Please enter it.

Access Code

Password

Confirm Password

This mockup shows the sign-up interface of the EEZON - Inventory Management System. It features a title bar with the system name and standard window controls. The main area contains four input fields: 'Email ID' with a placeholder 'Enter Email Id', 'Password' with a placeholder 'Enter Password', 'Access Code' with a placeholder 'Enter Access Code', and 'Confirm Password' with a placeholder 'Re-enter Password'. A 'Role' dropdown menu is positioned between the password and access code fields, with options 'Student' and 'Professor'. A message box states 'Access Code is sent to your email. Please enter it.' Below the input fields is a 'Sign Up' button.

EEZON - Forgot Password

Email ID

Enter Email Id

Access Code

Enter Access Code

Password

Enter Password

Confirm Password

Re-enter Password

Submit

Your Password has been Reset

<Person>:
Admin: Add Prof/TA
Prof: Add only TA

EEZON - Home Screen- Admin/Prof

Requests

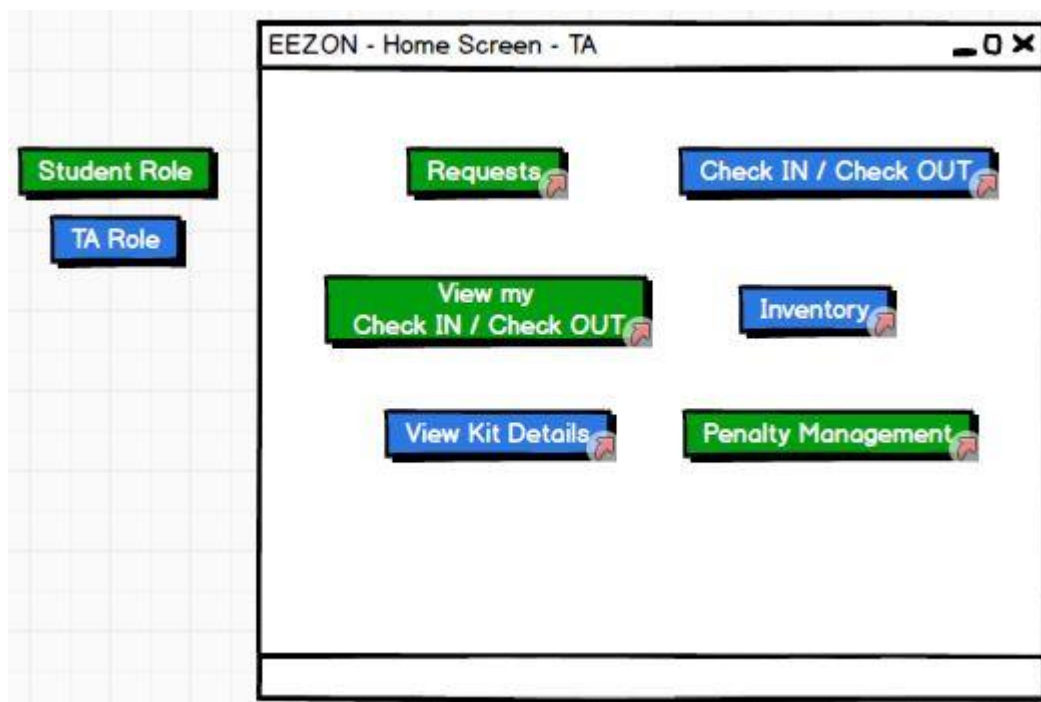
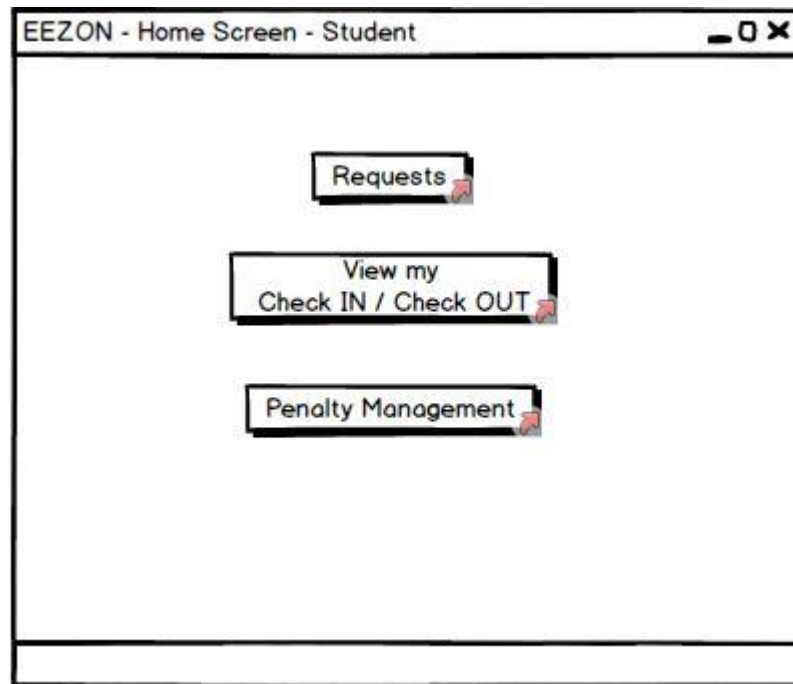
Check IN / Check OUT

Inventory

Add <Person>

View Kit Details

Penalty Management



Confirmation

Do you want to Continue ?

NoYes

EEZON - Requests Screen - Admin/Prof

HomeBack

Req #	Req Type	Course	Action
1	R_Prof		Approve/Decline
2	R_Student		Approve/Decline
3	R_Extension		Approve/Decline
4	R_New Item		Approve/Decline

EEZON - Requests Screen - Student

HomeBack

Request to enroll into course

Request for Unavailable Items

Request Check IN Extension

EEZON - Requests Screen - TA

Home Back

Request to enroll into course

Request for Unavailable Items

Request Check IN Extension

Req #	Req Type	Course	Action
1	R_Student		Approve/Decline
2	R_Student		Approve/Decline
3	R_Student		Approve/Decline
4	R_Student		Approve/Decline

Confirmation

Do you want to Continue ?

No Yes

EEZON - Request to enroll into Course - Student

Home Back

Req #	Req Type	Course	Status
1	R_Student	Embedded System Design	Enrolled
2	R_Student	Internet of Things	Requested

Select Multiple Courses

Embedded System Design

Embedded Software Essentials

Real-Time Embedded Systems

Internet of Things

Low Power Embedded Design Techniques

Request

Confirmation

Do you want to Continue ?

No

Yes

EEZON - Request for Unavailable Items - Student

Home

Back

Req #	Req Type	Status
This table shows all requests and their status		

Select Course

Select Item Type (DevKit or Component)

Enter Name

Enter Name

Enter Link

Enter Link

Enter Cost

Enter Cost

Number of Items

(Shown for Components only)

2

Request

Confirmation

Do you want to Continue ?

No

Yes

EEZON - Request for Check IN Extension - Student

Home

Back

Req #	Req Type	Status
This table shows all requests and their status		

Select Course

Select Kit (out of the kits student checked out)

Select Time Frame

Request

<Title>:
Admin: Add TA/Prof
Prof: Add TA

Confirmation

Do you want to Continue ?

No
Yes

EEZON - <Title>
_ 0 x

Home
Back

EEZON - View my Check IN / Check OUT - Student
_ 0 x

Home
Back

This table shows details based on selection

EEZON - View Kit Details - Prof/TA/Admin

Home

Back

Select Year

Select Sem

Select Course

Select Kit Type

This table shows details based on selection

EEZON - Inventory Management - Prof

Home

Back

Add Kit

Remove Kit

Select Course

Select Course

Select Kit Type (Existing, Oth)

Select Kit Type (Existing)

Enter Kit Type (Other chosen)

Add

Remove

Add Kit Serial Number

Remove Kit Serial Number

Select Course

Select Course

Select Kit Type (Existing)

Select Kit Type (Existing)

Enter Kit Serial Number

Select Kit Serial Number

Enter Remarks

Add

Remove

Confirmation

Do you want to Continue ?

No

Yes

EEZON - Inventory Management - Admin

Home

Back

Add Course

Enter Course

Enter Course Description

Add

Add Kit

Select Course

Select Kit Type (Existing, Oth

Enter Kit Type (Other chosen)

Add

Add Kit Serial Number

Select Course

Select Kit Type (Existing)

Enter Kit Serial Number

Add

Remove Course

Select Course

Remove

Remove Kit

Select Course

Select Kit Type (Existing)

Remove

Remove Kit Serial Number

Select Course

Select Kit Type (Existing)

Select Kit Serial Number

Enter Remarks

Remove

Confirmation

Do you want to Continue ?

No

Yes

EEZON - Inventory Management - TA

Home

Back

Confirmation

Do you want to Continue ?

No

Yes

Add Kit Serial Number

Select Course

Select Kit Type (Existing)

Enter Kit Serial Number

Add

Remove Kit Serial Number

Select Course

Select Kit Type (Existing)

Select Kit Serial Number

Enter Remarks

Remove

EEZON - Inventory Management System

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EEZON - Penalty Management- Admin/Prof

Home

Back

☒ View

☐ Override

☒ By course (+)

☐ By email (-)

Select Sem (+)

Select Year (+)

Select Course (+)

Enter Email ID (-)

View (-)

This table shows details based on selection

Override

Confirmation

Do you want to Continue ?

No

Yes

EEZON - Penalty Management - TA

[Home](#) [Back](#) ☐ View My Penalty
☒ View

☒ View by course (+)
☐ View by email (-)

Select Sem (+) ▾

Select Year (+) ▾

Select Course (+) ▾

Enter Email ID (-)

[View \(-\)](#)

This table shows details based on selection

EEZON - Penalty Management - Student

[Home](#) [Back](#) ☒ View My Penalty

Select Course ▾

This table shows details based on selection

The screenshot shows a web application window titled "EEZON - Check IN / Check OUT". On the left, there is a confirmation dialog box with the text "Confirmation" and "Do you want to Continue ?". It has two buttons: "No" and "Yes". The main form area contains a "Home" button and a "Back" button. Below these is an input field labeled "Enter Email ID". There are two radio buttons: "Check OUT (-)" (selected) and "Check IN (+)". Below the radio buttons are three dropdown menus: "Select Course (-)", "Select Kit Type (-)", and "Select Kit Serial Number (-)". There are two buttons: "Check OUT (-)" and "Check IN (+)". A text box below the dropdowns says "This table gives kits options to select from for doing Check IN of a particular user (+)".

Data Storage:

We will be using relational database MySQL to store information for each user and kits. Check In/Check out details, Course mapping, Kit types, Kit details, Logging information, User Information and privileges, error codes etc. will be stored in database. There will be a DBHandler class used to handle all database queries, updates and inserts.

Class Diagram:

Good resolution image of class diagram can be found in this [link](#).

