

SENG2050 - Introduction to Web Engineering

ASSIGNMENT 3

WEB ENGINEERS

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1. Introduction

NewBoard is an assignment submission and marking system designed with the purpose of improving the existing ‘Blackboard’ system. NewBoard attempts to achieve this by including existing features of Blackboard while making it easier for staff and students to communicate with each other regarding assignment results, and by giving students a more comprehensive ability to track their grades and view their progress towards their future academic goals. NewBoard is also designed with the purpose of making it easier for staff to complete potentially mundane and repetitive tasks such as marking assignments so that they can get back to engaging with the students as quickly as possible.

Features which are currently functioning in this version of NewBoard are outlined as follows: Students, course coordinators and other teaching staff can log into the NewBoard system with their personal accounts to view the information pertaining to the courses they are enrolled in. All users can also log out of their session via a link at the top right of the page. Students can view announcements, lectures and laboratory content as well as a discussion forum for each of their courses. Students can submit adverse requests for assignments. Students can create and reply to threads in the discussion forum for a course. Staff can create announcements, course materials and forums. Staff can create and reply to threads in the a forum. Staff can view all assignment submissions. Coordinators can do all of the abilities of a staff member with the added ability to view adverse requests.

Given the size of this particular system and the allocated time for completion, the following features are not yet live for the current version: When a student views their grades for a course, they have additional information displaying the average mark of future assessments required to achieve each grade result (P,C,D & HD). When a student submits an assignment after the due date, the system should automatically calculate the late penalty for the assignment so that it can be applied to the raw mark that a staff member inputs, removing their need to do this manually. After a staff member has marked an assignment, students are given the ability to engage the marker in conversational feedback via a chatbox. Had these features been

implemented, then NewBoard would have a clear advantage over the current Blackboard system in terms of the information presented to a student, a student's ability to acquire comprehensive feedback for an assignment quickly, and the time staff members spend doing repetitive tasks on the system.

NewBoard started out with the goal of improving the existing Blackboard assignment marking and submission system. While NewBoard maintains the potential to improve on the existing system by adding features which Blackboard does not have, this version of the system is not yet an improvement on the existing system due to a discrepancy between the size of the planned system and the time allocated for completion resulting in the advantageous aspects of the system not yet being implemented. Given more time to complete the system, by including core features of Blackboard and implementing the additional features outlined in this project, a later version of NewBoard could fulfil its potential as a replacement for the current Blackboard assignment marking and submission system.

2. List of Use Cases

# Use Case Number	Use Case Name	Actors with access	Use case description
1	Login	All Teaching Staff, Student	The user is presented with a form to fill in their user id and password. Once filled and validated, the user proceeds to the New Board home page where they can access personal content
2	Logout	All Teaching Staff, Student	The user selects 'Logout' in the top right corner of the screen, the session is terminated and a page with a message that the user is now logged out. A 'Login' button will take the user back to the login page
3	Download Assignments	All Teaching Staff	A course coordinator or other member of teaching staff, downloads all student assignments that they are designated to mark. They select a 'download assignments' link next to the list of students who they are to be marking. The assignments are then downloaded to their local machine.
4	Automatically Sort Assignments by Student ID (INC. 3)	All Teaching Staff	The student is shown their grade for all their completed assessment items at that point, for the course they are currently viewing
5	Upload Marks	All Teaching Staff	After an assignment marker has downloaded a student's assignment and decided on a grade to give the student, the marker navigates to 'Grade Center > Assignment Submission' and enters the marks before submitting to the database.
6	Upload Feedback	All Teaching Staff	After a marker has uploaded the marks for an assignment submission, they see the option to submit feedback. The marker fills in the feedback form and selects 'Submit' and the information is uploaded to the database.
7	Notify Student	All Teaching	When one of the above events

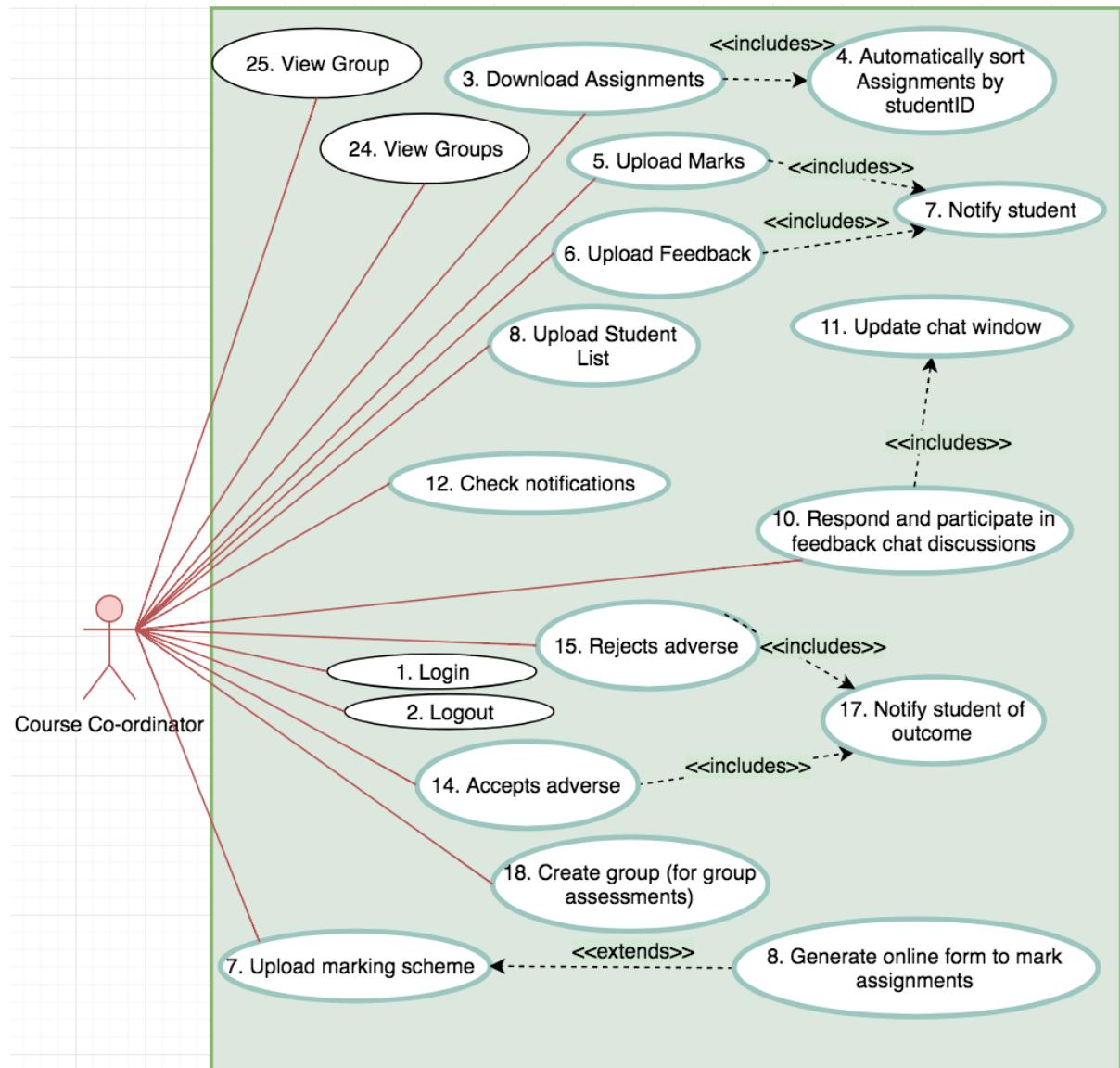
	(INC. 5,6)	Staff	occurs, the system creates a notification message, for example, 'Your adverse has been accepted.' The message is sent the student's inbox, along with any other links/information required, depending on the notification.
8	Upload Student List	All Teaching Staff	Coordinator uploads the file of all the students. The system reads through each line (each student) and make sure the student exists. A list of the students is created in the system.
9	Upload Marking Scheme	All Teaching Staff	A file is uploaded to NewBoard that contains the marking criteria
10	Respond and Participate in Feedback Chat Discussions	All Teaching Staff, Student	A user who is viewing a course will see a chatbox for the course. In this chatbox, recent messages from other users who are involved in the course will be visible and the user will be able to type a message and press 'send' to participate in the discussion.
11	Update Chat Window (INC. 10)	All Teaching Staff, Student	When a user sends a message in a chat window as described in use case 10., the chat window must be updated in the system
12	Check Notifications	All Teaching Staff, Student	The system will retrieve a list of the user's notifications and display them to the user.
13	Apply for Adverse	Student	The student is provided a form to fill out and explain their adverse circumstance, including any supporting documentation. Upon submitting the request, then it is sent to the course coordinator.
14	Accept Adverse	Course Coordinator	The course coordinator will view a page which lists all adverse circumstance applications by students for a particular assignment. The content of the application will be displayed with buttons at the bottom to accept or reject the application. 'Accept' is selected. The course coordinator must then select the length and conditions of the extension to be

			granted to the student for the assignment.
15	Reject Adverse	Course Coordinator	The course coordinator will view a page which lists all adverse circumstance applications by students for a particular assignment. The content of the application will be displayed with buttons at the bottom to accept or reject the application. 'Reject' is selected.
16	Notify Coordinator (INC. 13)	Student	A student submits an application for adverse circumstances then the system sends a notification to the course coordinator that they have a new application in their adverse applications pending list
17	Notify Student of Adverse Outcome (INC. 14,15)	Course Coordinator	The course coordinator selects either "Accept" or "Reject" at the bottom of an application for adverse circumstances. Then a notification is sent to the relevant student signalling whether their application was accepted or rejected.
18	Create Group (for group assessments)	All Teaching Staff, Student	From the group assessment page a student selects 'Create Group' and is redirected to a group page where members can be added and a group name can be set
19	Upload Assignment Submission	Student	A student submits an Assignment. As they are listed under a group, the system will determine which group the submitter is from and mark everyone in the group as 'submitted'
20	View Grades	Student	The student is shown their grade for all their completed assessment items at that point, for the course they are currently viewing
21	Submit Online Peer Evaluation Form	Student	For group assessment items, a peer evaluation form must be filled out by each member in which each student rates themselves and each other student on the amount of participation and effort put into the group project. For a group

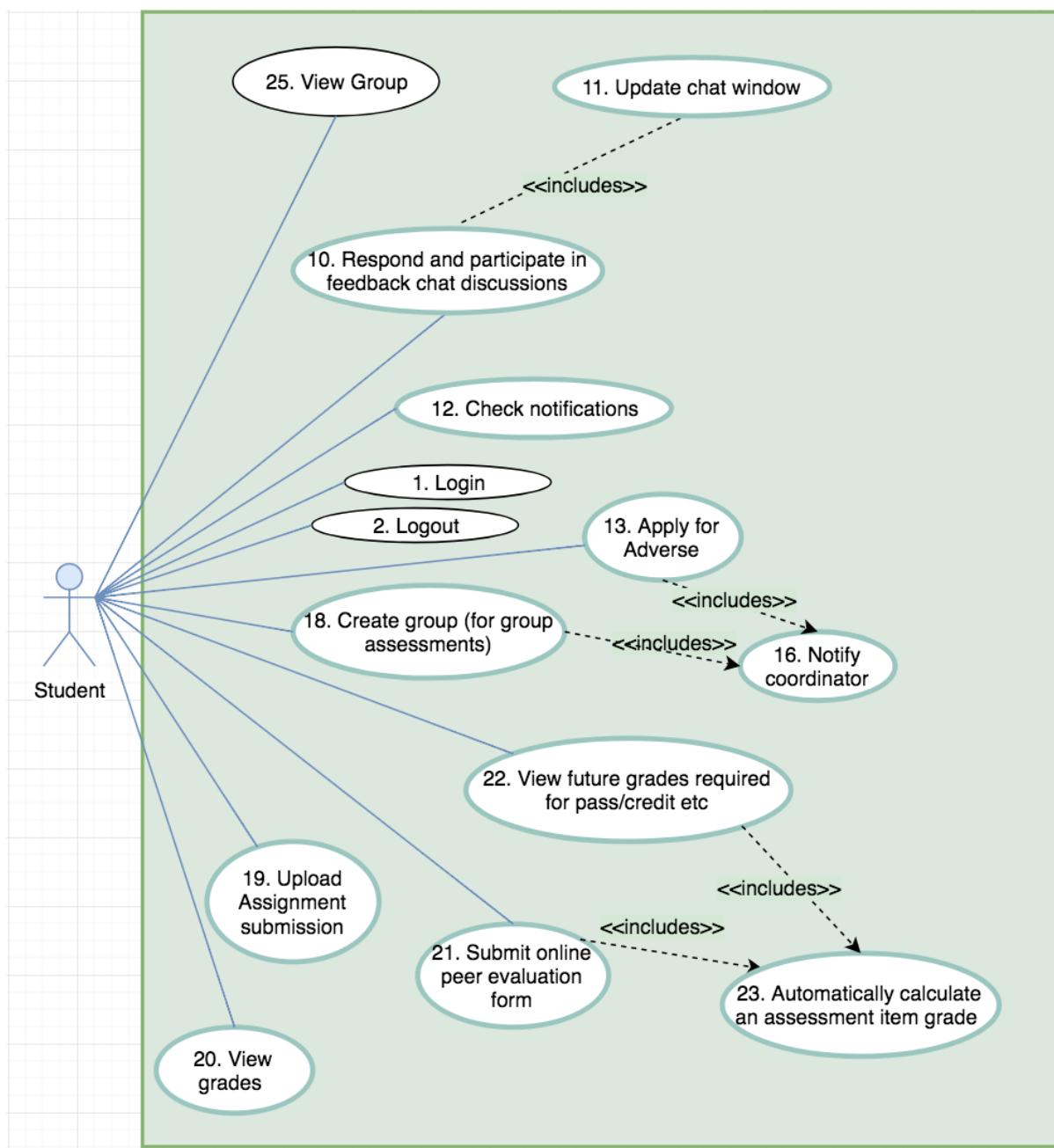
			assignment submission to be valid, one of these forms must be submitted for each group member.
22	View Future Grades for P/C/D/HD	Student	The student is shown the grade average of all incomplete assessments they need to achieve to acquire an HD, D, C or P grade in the course they are currently viewing
23	Automatically Calculate an Assessment Item Grade (INC. 21,22)	All Teaching Staff	For late assessment items, the final mark is automatically deducted by 10% for each day of lateness for up to a maximum of 7 days. If the assessment item is a group project then the scaling for each student's mark is calculated with the data from the peer evaluation form. The marker maintains the ability to manually select the final marks and bypass the automation. The marker stay informed about whether the final mark has been automatically or manually finalised.
24	View Groups	All Teaching Staff	A list of all groups is retrieved and displayed to the Staff member
25	View Group	All teaching Staff, Student	Information about the group is displayed to the staff member or student

3. Use Case Diagrams

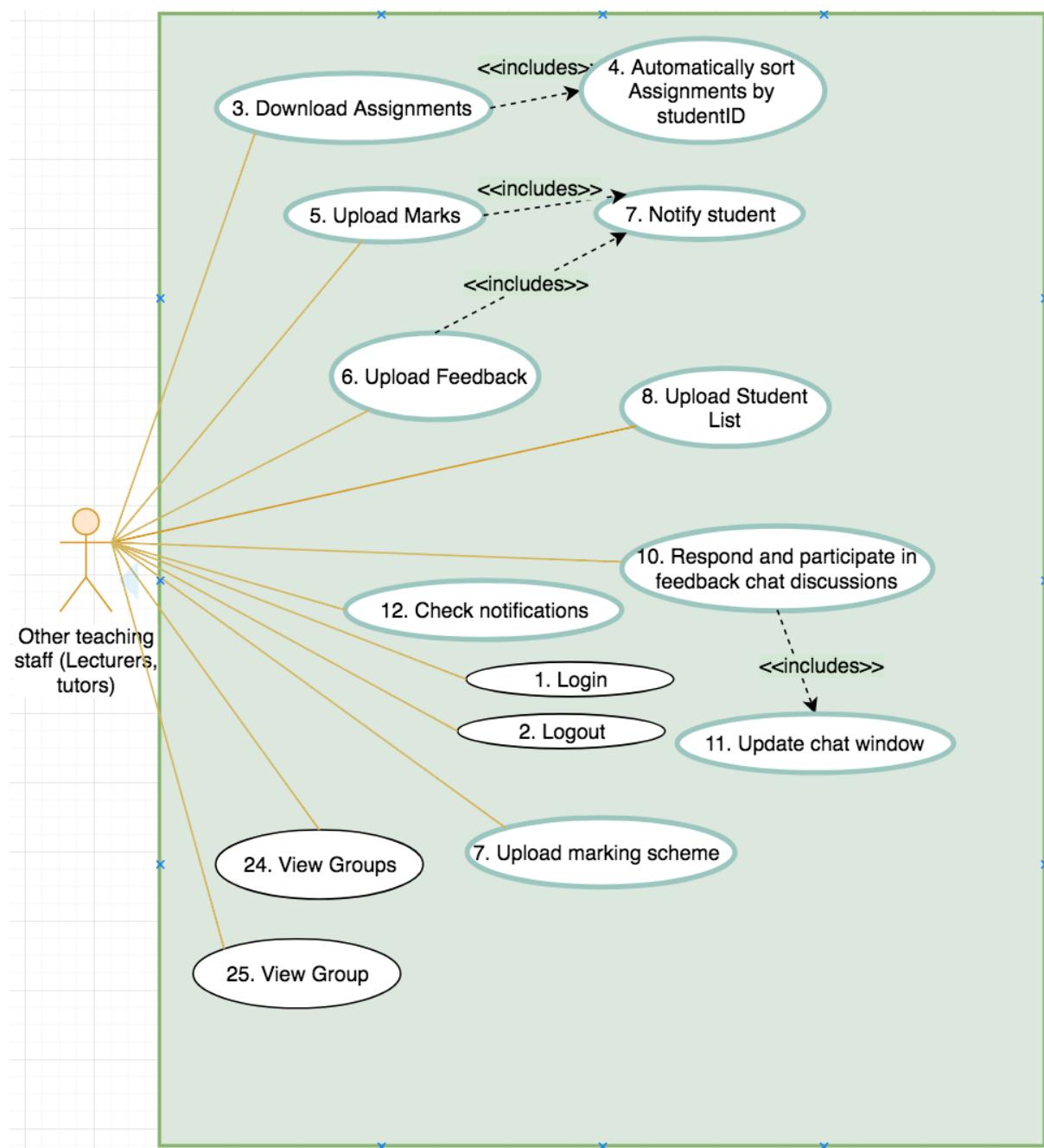
Use Case Diagram - Coordinator



Use Case Diagram - Student



Use Case Diagram - Other Teaching Staff



2. Use Case Descriptions

Use Case Name	Login	
Scenario	A user who is not logged in, logs into 'New Board' to access their personal content.	
Triggering Event	User who is not yet logged in, navigates to 'New Board'	
Brief Description	The user is presented with a form to fill in their user id and password. Once filled and validated, the user proceeds to the New Board home page where they can access personal content	
Actors	User (Students and all teaching staff)	
Related Use Cases	Logout	
Stakeholders	Students and all teaching staff	
Entry Condition	A student who is not logged in, navigates to 'New Board'	
Exit Condition	Student is logged in and their personalised page is on display	
Flow of Events	User	System
	1. User navigates to New Board 2. Fills and submits login form	1.1 System checks to see if a user is currently logged in and displays login page if not 2.1 System validates login details and if valid, requests the personal page for the user
Exception Condition	1.1. A user is already logged in a. The page of the logged in user is displayed 2.1 A user has logged in from another tab before this login page loaded and user submits form a. A warning is displayed that a user is already logged in and must log out before a user can log in again	

Use Case Name	Logout	
Scenario	A logged in user selects 'Logout' and is logged out of their personal site	
Triggering Event	User selects the 'Logout' tab on the sidebar	
Brief Description	The user	
Actors	User (students and all teaching staff)	
Related Use Cases	Login	
Stakeholders	Students and all teaching staff	
Entry Condition	'Logout' is selected from the sidebar	
Exit Condition	User is logged out from the system	
Flow of Events	User	System
	1. Logged in user selects 'Logout'	1.1 User is logged out of the system and loses access to all internal pages 1.2 User is redirected to the logout page
Exception Condition	1.1 User has already logged out in another tab a. Redirected to login page	

Use Case Name	Download Assignments	
Scenario	Course coordinator or other teaching staff downloads all student assignment for marking that they are designated to mark	
Triggering Event	Teaching staff selects 'Download assignments' next to the list of student assignments that the staff member is to be marking	
Brief Description	A course coordinator or other member of teaching staff, downloads all student assignments that they are designated to mark. They select a 'download assignments' link next to the list of students who they are to be marking. The assignments are then downloaded to their local machine.	
Actors	All teaching staff	
Related Use Cases	Automatically sort Assignments by studentID	
Stakeholders	All teaching staff	
Entry Condition	A member of teaching staff selects 'download' on a student assignment	
Exit Condition	The assignment is downloaded to the local machine of the staff member	
Flow of Events	Teaching Staff	System
	<ol style="list-style-type: none"> 1. Staff checks boxes next to all assignments he/she intends to mark 2. Staff selects 'Download assignments' 	<ol style="list-style-type: none"> 2.1. All student assignments that this staff member is designated to mark, are downloaded to their local machine
Exception Condition	1.1 A student has not uploaded their assignment <ol style="list-style-type: none"> a. The student will be skipped in the list b. The marker will be notified if the student later uploads their assignment 	

Use Case Name	Automatically Sort Assignments by Student ID	
Scenario	When a staff member downloads the student assignments, the assignments are sorted alphabetically	
Triggering Event	Staff selects 'download assignments'	
Brief Description	The student is shown their grade for all their completed assessment items at that point, for the course they are currently viewing	
Actors	Teaching Staff	
Related Use Cases	Download Assignments	
Stakeholders	Students and all teaching staff	
Entry Condition	'Download assignments' has been selected	
Exit Condition	Assignments have been downloaded and sorted in alphabetical order	
Flow of Events	Teaching Staff	System
	1. Staff member downloads student assignments for marking	1.1. Places all assignments into one document, and sorts them in alphabetical order before downloading
Exception Condition		

Use Case Name	Upload Marks	
Scenario	A member of teaching staff uploads the marks for a student's assignment to the database	
Triggering Event	A member of teaching staff enters the marks for a student's assignment and selects confirm on the 'Assignment Submission' page.	
Brief Description	After an assignment marker has downloaded a student's assignment and decided on a grade to give the student, the marker navigates to 'Grade Center > Assignment Submission' and enters the marks before submitting to the database.	
Actors	All teaching staff	
Related Use Cases	Notify Student	
Stakeholders	Students and all teaching staff	
Entry Condition	Marks have been entered and submitted to the database for a student assignment	
Exit Condition	The marks have been saved successfully to the database	
Flow of Events	Teaching Staff	System
	<ol style="list-style-type: none"> 1. Staff enters the marks for a student's assignment into a form 2. Staff selects 'Confirm' to upload the marks 	<ol style="list-style-type: none"> 2.1. The marks are saved to the database 2.2. A notification is sent to the student regarding the newly uploaded marks (see use case 5.)
Exception Condition	<ol style="list-style-type: none"> 2.1. A marker inputs an invalid mark <ol style="list-style-type: none"> a. Javascript form validation will display a warning 2.2. A mark has already been uploaded for that student <ol style="list-style-type: none"> a. The marker will instead have the option to 'modify' the student's mark 2.3. The student assignment was late <ol style="list-style-type: none"> a. The penalty will be applied automatically after the marker submits the non-penalty mark (see use case 23.) 	

Use Case Name	Upload Feedback	
Scenario	A marker uploads feedback for a student's submitted assignment	
Triggering Event	The marker inputs the feedback and selects 'Submit'	
Brief Description	After a marker has uploaded the marks for an assignment submission, they see the option to submit feedback. The marker fills in the feedback form and selects 'Submit' and the information is uploaded to the database.	
Actors	Teaching Staff	
Related Use Cases	Upload Marks	
Stakeholders	Students and all teaching staff	
Entry Condition	Staff has inputted feedback to the form and selected 'Submit'	
Exit Condition	Feedback for the student assignment has been uploaded to the database	
Flow of Events	Teaching Staff	System
	1. A member of teaching staff inputs feedback for a student's assignment into a form 2. Selects 'Submit'	1.1. Student feedback for the assignment is saved to the database 1.2. Sends a notification to the student that they have feedback for the assignment (see use case 5.)
Exception Condition	2.1 Feedback already exists for this student and assignment a. The marker is given the option to modify the feedback instead	

Use Case Name	Notify Student	
Scenario	A student needs to be sent a notification	
Triggering Event	Course Coordinator accepted/rejected their adverse request, or a student's grades or feedback have been uploaded.	
Brief Description	When one of the above events occurs, the system creates a notification message, for example, 'Your adverse has been accepted.' The message is sent to the student's inbox, along with any other links/information required, depending on the notification.	
Actors	All teaching staff	
Related Use Cases	Upload marks, upload feedback, accept adverse, reject adverse	
Stakeholders	Student, All teaching staff	
Entry Condition	When one of the upload marks/upload feedback/reject adverse/accept adverse use cases has been completed	
Exit Condition	The student has the notification in their inbox	
Flow of Events	Actors	System
		1.1. Creates the notification message, depending on the event that has occurred 1.2. Adds the message into the student's inbox 1.3. Unread messages = unreadMessages+1 1.4. Visually display the number of unread messages
Exception Condition	1.2. The message cannot be added into the student's inbox a. Repeats the search for the correct student	

Use Case Name	Upload Student List	
Scenario	Coordinator wants to upload a list of all students who are enrolled in a given tutorial	
Triggering Event	Coordinator selects 'Upload list of students'	
Brief Description	Coordinator uploads the file of all the students. The system reads through each line (each student) and make sure the student exists. A list of the students is created in the system.	
Actors	Course Coordinator	
Related Use Cases		
Stakeholders	All teaching staff	
Entry Condition	Coordinator selects 'Upload list of students' and is logged in	
Exit Condition	When there is a list of all students saved in the system	
Flow of Events	Student	System
	1. Coordinator selects 'Upload list of students' 2. Uploads the students list 3. Coordinator selects 'submit' 4. Enters the name of the students list (e.g, Tue2-4Lab)	1.1. A form is displayed requesting Coordinator to upload a file of students (excel files or word files, 1 student per line) 2.1. Creates an empty list for the list of students 2.2. Reads through the file. For each line <ul style="list-style-type: none"> a. Validate given studentID and name in database b. Add studentID, name to the student list 2.3. Display list of students back to Coordinator 2.4. Prompt Coordinator to enter name for the list 3.1. Saves the students list, along with the name

Exception Condition	<p>3.2. The file is not a valid format (example, a powerpoint file)</p> <ul style="list-style-type: none"> a. An error is displayed and the coordinator is prompted to upload a different file <p>3.3. There is a line that contains a student that does not exist</p> <ul style="list-style-type: none"> a. Skip the student, but save the details for later display b. When displaying list back to Coordinator, also display the lines that could not be read c. Display a message reminding the coordinator to check spelling and that correct ids are used d. Ask Coordinator if it is still okay to upload the list (Some lines may not have student details in them) <p>4. Coordinator enters invalid name for the list (eg, ^&*%).</p> <ul style="list-style-type: none"> a. JavaScript will perform validation and display
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Use Case Name	Upload Marking Scheme	
Scenario	Teaching staff uploads the marking scheme for a given assignment	
Triggering Event	A member of the teaching staff is in the Assessment item section and selects 'Upload marking scheme'	
Brief Description	A file is uploaded to NewBoard that contains the marking criteria	
Actors	All teaching staff	
Related Use Cases	Generate Online Form to Mark Assignments	
Stakeholders	All teaching staff, students	
Entry Condition	Teaching staff select 'Upload marking scheme' and is logged in	
Exit Condition	The marking scheme has been successfully uploaded	
Flow of Events	Teaching staff	System
	1. Staff selects 'Upload marking scheme' 2. Fills required information on form 3. Staff selects 'Browse' 4. Selects the file they want to upload as the marking scheme 5. Selects 'Submit'	1.1. A form is displayed asking for information such as the name of the file (for upload) 4.1. The file is uploaded to NewBoard under that particular assessment item
Exception Condition	5.1. The file uploaded is an invalid format (eg, powerpoint, visio, etc) <ul style="list-style-type: none"> a. Displays a message stating which formats are accepted b. Navigates back to the marking scheme upload page 	

Use Case Name	Respond and Participate in Feedback Chat Discussions	
Scenario	A user of the system sends and receives messages in the chat window for an assignment submission in the course they are viewing	
Triggering Event	User types a message and presses send in a chat window	
Brief Description	A user who is viewing a marked assignment for a course will see a chatbox for engaging in a feedback discussion. In this chatbox, recent messages from other users who are involved in the course assignment will be visible and the user will be able to type a message and press 'send' to participate in the discussion.	
Actors	Student and all teaching staff (User)	
Related Use Cases	Update chat window	
Stakeholders	Students and all teaching staff	
Entry Condition	A user has typed a message and pressed 'Send'	
Exit Condition	The message has been sent so that it is visible to all other users involved in the course	
Flow of Events	User 1. A user views any existing messages in the chatbox 2. A user types a message into the chatbox. 3. The user selects 'Send'	System 3.1. The message is uploaded to the database so that it becomes visible in the chatbox of all other users involved in that course
Exception Condition		

Use Case Name	Update Chat Window	
Scenario	When a user sends a message in a chat window, the chat database must be updated	
Triggering Event	A user sends a message in a chat window	
Brief Description	When a user sends a message in a chat window as described in use case 10. , the chat window must be updated in the system	
Actors	Students and all teaching staff	
Related Use Cases	Respond and participate in Feedback Chat Discussions	
Stakeholders	Students and all teaching staff (User)	
Entry Condition	A message has been sent in a feedback chat discussion	
Exit Condition	The chat window has been updated in the system	
Flow of Events	User	System
	1. A user sends a message in a chatbox for their course as described in use case 10	1.1. The message is uploaded and the chatbox is updated in the system to include the message for all other relevant users to view
Exception Condition		

Use Case Name	Check Notifications	
Scenario	Teaching staff or students want to check their notifications	
Triggering Event	A user clicks on the notification link on the top-right of the webpage	
Brief Description	The system will retrieve a list of the user's notifications and display them to the user.	
Actors	All teaching staff, students (Users)	
Related Use Cases		
Stakeholders	All teaching staff, students	
Entry Condition	Users selects the notification link and is logged in	
Exit Condition	The notification has been viewed	
Flow of Events	Users	System
	1. User selects the notification link	1.1. Retrieves a list of the user's notifications 1.2. Displays the list to the user (with pending notifications in a different colour) 1.3. Number of notifications is set to 0 1.4. Number of pending notifications is no longer visible
Exception Condition	1.1. The user has no notifications a. Displays the message 'You have no notifications.'	

Use Case Name	Apply for Adverse	
Scenario	Student applies for adverse circumstances due to events that prevent him/her from undertaking an assessment item on time	
Triggering Event	Student selects the 'Apply for Adverse' tab on the sidebar	
Brief Description	The student is provided a form to fill out and explain their adverse circumstance, including any supporting documentation. Upon submitting the request, then it is sent to the course coordinator.	
Actors	Student	
Related Use Cases	Notify Coordinator, Add to adverse pending list	
Stakeholders	Students, Course coordinators, Hubs and Enquiries	
Entry Condition	'Apply for adverse' has been selected, user is logged in	
Exit Condition	Form and supporting documents are added to the list of pending adverse requests for the coordinator to view	
Flow of Events	Student 1. Student selects 'Apply for adverse' 2. Student fills personal details and details of circumstance 3. Student uploads any supporting documentation 4. Student submits request	System 1.1. A form is displayed to the Student 4.1. Course coordinator is given a notification through the new system 4.2. Displays confirmation
Exception Condition	4. Student submits form with invalid parameters a. JavaScript will perform validation and display errors 4.1 Student has already submitted an adverse for the same assignment a. Student is given an error 'Adverse request already submitted for this Assignment'	

Use Case Name	Accept Adverse	
Scenario	Course coordinator accepts a student's application for adverse circumstances	
Triggering Event	Course coordinator clicks 'Accept' on an application within the adverse circumstances response page	
Brief Description	The course coordinator will view a page which lists all adverse circumstance applications by students for a particular assignment. The content of the application will be displayed with buttons at the bottom to accept or reject the application. 'Accept' is selected. The course coordinator must then select the length and conditions of the extension to be granted to the student for the assignment.	
Actors	Course Coordinator	
Related Use Cases	Reject Adverse, Notify student of outcome	
Stakeholders	Students and all teaching staff	
Entry Condition	The adverse circumstances response page is being viewed and the response 'Accept' is selected	
Exit Condition	A new due date has been applied for the relevant student and assessment. A notification is sent to the relevant student of the result of the application	
Flow of Events	<p>Course Coordinator</p> <ol style="list-style-type: none"> 1. Course coordinator is viewing adverse circumstances response page for an assignment 2. Course coordinator selects 'Accept' at the bottom of an application 1. Coordinator then selects the length of the extension to be granted and enters a message to be sent to the student detailing the conditions. 2. Coordinator selects 'confirm' 	<p>System</p> <ol style="list-style-type: none"> 3.1 A form is displayed to the user for the information to be inputted 4.1 The due date for this student's assignment is updated in the system 4.2 A notification is sent to the student regarding the result of the application 4.3 A message is sent to the student detailing the terms of the extension
Exception Condition	<p>1.1 A student has already had an application approved previously for the same assignment</p> <p>a. A warning is displayed to the course coordinator after they select 'Accept' and the coordinator is prompted to 'confirm'</p>	

	the decision.
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Use Case Name	Reject Adverse	
Scenario	Course coordinator rejects a student's application for adverse circumstances	
Triggering Event	Course coordinator clicks 'Reject' on an application within the adverse circumstances response page	
Brief Description	The course coordinator will view a page which lists all adverse circumstance applications by students for a particular assignment. The content of the application will be displayed with buttons at the bottom to accept or reject the application. 'Reject' is selected.	
Actors	Course Coordinator	
Related Use Cases	Accept Adverse, Notify student of outcome	
Stakeholders	Students and all teaching staff	
Entry Condition	The adverse circumstances response page is being viewed and the response 'Reject' is selected	
Exit Condition	The assignment due date/penalty for the relevant student remains unchanged. A notification sent to the relevant student of the result of the application	
Flow of Events	<p>Course Coordinator</p> <ol style="list-style-type: none"> 1. Course coordinator is viewing adverse circumstances response page for an assignment 2. Course coordinator selects 'Reject' at the bottom of an application 	<p>System</p> <ol style="list-style-type: none"> 2.1. Any automatic calculations of a late penalty for the student remain unchanged 2.2. A notification is sent to the student regarding the result of the application
Exception Condition		

Use Case Name	Notify Coordinator	
Scenario	Student submits an application for adverse circumstances which prompts a notification to be sent to the course coordinator	
Triggering Event	Student submits an application for adverse circumstances	
Brief Description	A student submits an application for adverse circumstances then the system sends a notification to the course coordinator that they have a new application in their adverse applications pending list	
Actors	Student	
Related Use Cases	Apply for Adverse	
Stakeholders	Students and Course Coordinator	
Entry Condition	A new adverse circumstances application has been submitted	
Exit Condition	A notification has been sent to the course coordinator regarding the new application	
Flow of Events	Student 1. A student submits an application for adverse circumstances	System 1.1. The course coordinator's applications for adverse circumstances pending list is updated to include the new application, ready to be reviewed 1.2. A notification is sent to the course coordinator detailing that a new adverse circumstances application has been submitted for the relevant student and assignment
Exception Condition	1.1	

Use Case Name	Notify Student of Outcome (Adverse)		
Scenario	When the course coordinator responds to an application for adverse circumstances, the student receives a notification of the outcome		
Triggering Event	The course coordinator responds to an application for adverse circumstances		
Brief Description	The course coordinator selects either “Accept” or “Reject” at the bottom of an application for adverse circumstances. Then a notification is sent to the relevant student signalling whether their application was accepted or rejected.		
Actors	Course coordinator		
Related Use Cases	Accept Adverse, Reject Adverse		
Stakeholders	Students and all teaching staff		
Entry Condition	The course coordinator has responded to an application for adverse circumstances		
Exit Condition	A notification has been sent to the student regarding the result		
Flow of Events	Course coordinator	System	
	1. Course coordinator selects either “Accept” or “Reject” at the bottom of an application for adverse circumstances	1.1. If application was approved then the relevant student is sent a notification of this result 1.2. Else If the application was declined then the relevant student is sent a notification of this result	
Exception Condition	1.1 The course coordinator has not responded to the application before the assessment is marked a. The marker receives a warning that the assessment cannot be marked until the application is responded to and a corresponding notification is sent to the course coordinator of the situation.		

Use Case Name	Create Group (for group assessments)	
Scenario	If a group assessment item is released then a student is able to create a group for the assessment	
Triggering Event	Student selects 'Create Group' from the group assessment page	
Brief Description	From the group assessment page a student selects 'Create Group' and is redirected to a group page where members can be added and a group name can be set	
Actors	Student	
Related Use Cases		
Stakeholders	Students and all teaching staff	
Entry Condition	'Create Group' has been selected from the group assessment page	
Exit Condition	Members have been added, a group name has been set, and the group is confirmed	
Flow of Events	Student 1. Student selects 'Create Group' from group assessment page 2. Student adds other student(s) to the group 3. Student sets a name for the group 4. Student selects 'Confirm Group'	System 1.1 A form is displayed asking for information regarding the group 4.1 Creates a new group. Adds selected student(s) to new group. Adds name to new group. 4.2 Send a notification to any group members added to the group
Exception Condition	1.1 If a student is already in a group and tries to create a group a. Group cannot be created and a warning is displayed; "must leave current group before creating a new group" 1.3 If a student tries to add a student who is in another group a. Student cannot be added and a warning is displayed; "student <name> cannot be added, <name> is already in a group, the group was not created"	

Use Case Name	Upload assignment submission	
Scenario	A student submits a group assignment on behalf of their group	
Triggering Event	Student uploads the group Assignment and selects 'submit'	
Brief Description	A student submits an Assignment. As they are listed under a group, the system will determine which group the submitter is from and mark everyone in the group as 'submitted'	
Actors	Student	
Related Use Cases		
Stakeholders	Students, All teaching staff	
Entry Condition	Student selects 'submit' (when on the group submission page), user is logged in	
Exit Condition	When the assignment has been successfully uploaded	
Flow of Events	Student 1. Student selects 'Upload Assignment' 2. Student uploads their Assignment file 3. Student selects 'submit'	System 1.1. A form is displayed to the Student 2.1. If group submission, system finds the groupID based on student who submitted 2.2. For all other members of the group: a. Record Student ID b. Mark them as 'submitted' 2.3. If the Assignment is individual, mark student as submitted 2.4. Display confirmation
Exception Condition	3.1. The student is not part of a group a. The Assignment will be submitted as an individual Assignment 3.2. If the group/student has already submitted an Assignment a. Finds the attempt (attempt 1, attempt 2, etc) b. Makes a new attempt and submits the assignment there	

Use Case Name	View Grades	
Scenario	Student views their grades for a course on the new blackboard system	
Triggering Event	Student selects the 'My grades' tab on the sidebar	
Brief Description	The student is shown their grade for all their completed assessment items at that point, for the course they are currently viewing	
Actors	Student	
Related Use Cases		
Stakeholders	Students and all teaching staff	
Entry Condition	'My Grades' has been selected, user is logged in	
Exit Condition	Grades are displayed on the interface	
Flow of Events	Student	System
	1. Student selects 'View Grades'	1.1. Gathers all the assessment items already completed* 1.2. For each item a. Query DB for the mark 1.3. Collate marks into a table to display 1.4. Display table
Exception Condition	1.1 The student has not submitted the Assignment (they do not have adverse circumstances) a. In the place of the grade, 'Not yet submitted' will be displayed. 1.2 Submission has been completed, but not marked and given a grade. a. In the place of the grade, 'Not yet marked' will be displayed	

Use Case Name	Submit online peer evaluation form	
Scenario	For group assessments, a peer evaluation form is submitted along with the assignment and is used to assess the amount of work put into the assignment by each group member.	
Triggering Event	Student submits a group assignment, asked for peer evaluation form	
Brief Description	For group assessment items, a peer evaluation form must be filled out by each member in which each student rates themselves and each other student on the amount of participation and effort put into the group project. For a group assignment submission to be valid, one of these forms must be submitted for each group member.	
Actors	Student	
Related Use Cases	Automatically calculate an assessment item grade	
Stakeholders	Students, Course coordinators, Teaching staff	
Entry Condition	Assignment files have been submitted for a group assessment item	
Exit Condition	Each group member has submitted an individual filled out peer evaluation form	
Flow of Events	Student	System
	<ol style="list-style-type: none"> 1. Student submits the files for a group assignment 2. Each student submits own peer evaluation form 	<ol style="list-style-type: none"> 1. The peer evaluation form is saved to the system 2. Under the tick for the file submission, a warning is displayed, reading "submission not yet valid" 3. Under the warning, each member name is displayed with an X, reading, "Peer evaluation form not yet submitted for <insertName>" 4. Each time a group member submits their own form, the message next to their name changes to a tick with the message "Peer evaluation form provided for <insertName>" 5. Once all peer evaluation forms are submitted the warning is replaced by a message reading "submission valid" 6. For a valid submission, the peer evaluation forms are scanned and an automatic scaling formula is supplied to the marker to use or modify.

Exception Condition	<ol style="list-style-type: none"> 1. Peer evaluation forms are not consistent, vary widely in their assessment of a student <ol style="list-style-type: none"> a. Marker may choose to ignore one or more forms and rescale or to manually modify the scaling for a student, preferably after consulting with the group and/or individual members 2. A student is concerned about the potential for unfair scaling in their group circumstances and notifies a marker <ol style="list-style-type: none"> a. The marker consults with the group and makes any modifications to scaling they deem necessary 	

Use Case Name	View Future Grades Required for P/C/D/HD	
Scenario	Student views the grades they need to achieve to acquire their desired result for a course on the new blackboard system	
Triggering Event	Student selects the 'My grades' tab on the sidebar	
Brief Description	The student is shown the grade average of all incomplete assessments they need to achieve to acquire an HD, D, C or P grade in the course they are currently viewing	
Actors	Student	
Related Use Cases	View Grades	
Stakeholders	Students and all teaching staff	
Entry Condition	'My Grades' has been selected	
Exit Condition	Required grades are displayed on the interface	
Flow of Events	Student	System

	<p>1. Student selects 'View Grades'</p>	<p>1.1. Gathers all the assessment items and grades both completed and not completed</p> <p>1.2. For each item, queries database for the mark achieved (if completed) and the weighting of the assessment item</p> <p>1.3. Use previous results to calculate the average marks of future assessment items required to achieve each grade result in the course</p> <p>1.4. Collate results into a table to display</p> <p>1.5. Display table</p>
Exception Condition	<p>1.1 The student's current standing in the course is too low for it to be possible for them to achieve a particular grade. E.g. If a student has already achieved 15% less in course weighting than what they could have achieved then a HD grade is no longer possible.</p> <p>a. a warning will be displayed that a HD grade is no longer possible for the course</p> <p>1.2 No assessment items have been completed.</p> <p>a. The default marks required for each grade are displayed</p>	

Use Case Name	Automatically calculate an assessment item grade
Scenario	Late submission assessment items have an automatic grade deduction depending on how late the assessment is and group assessments can be automatically scaled for each student's contribution
Triggering Event	Marker submits unmodified mark for late assessment item and/or group assessment item
Brief Description	For late assessment items, the final mark is automatically deducted by 10% for each day of lateness for up to a maximum of 7 days. If the assessment item is a group project then the scaling for each student's mark is calculated with the data from the peer evaluation form. The marker maintains the ability to manually select the final marks and bypass the automation. The marker stay informed about whether the final mark has been automatically or manually finalised.
Actors	Marker

Related Use Cases	View future grades required..., Submit online peer evaluation form	
Stakeholders	Students, Course coordinators, Teaching staff	
Entry Condition	An assessment item is late. And/or if it is a group assessment item.	
Exit Condition	Grade was recalculated	
Flow of Events	Marker	System
	<p>1. Marker submits the raw mark of an assignment that is late and/or it is a group assessment item</p>	<p>1.1. The marker submits the raw mark for an assessment item</p> <p>1.2. The system checks whether the assessment item was late and whether it was a group assessment item</p> <p>1.3. If The assessment was submitted late then the late penalty is calculated based on the number of days late</p> <p>1.4. If it is a group assessment item then scaling for each student is calculated using the peer evaluation form</p> <p>1.5. The late penalty (if any) and the scaled mark for each student (if applicable) is applied to the assessment item</p>
Exception Condition	<p>4. The assessment item is not late</p> <p>a. No penalty is applied by the system</p> <p>5. It is not a group assessment item</p> <p>a. No individual scaling need be applied</p> <p>6. The marker has manually applied the amount of late penalty and/or the individual scaling per student</p> <p>a. The automatic processes are skipped for any penalty or individual scaling that is manually selected by the marker</p>	

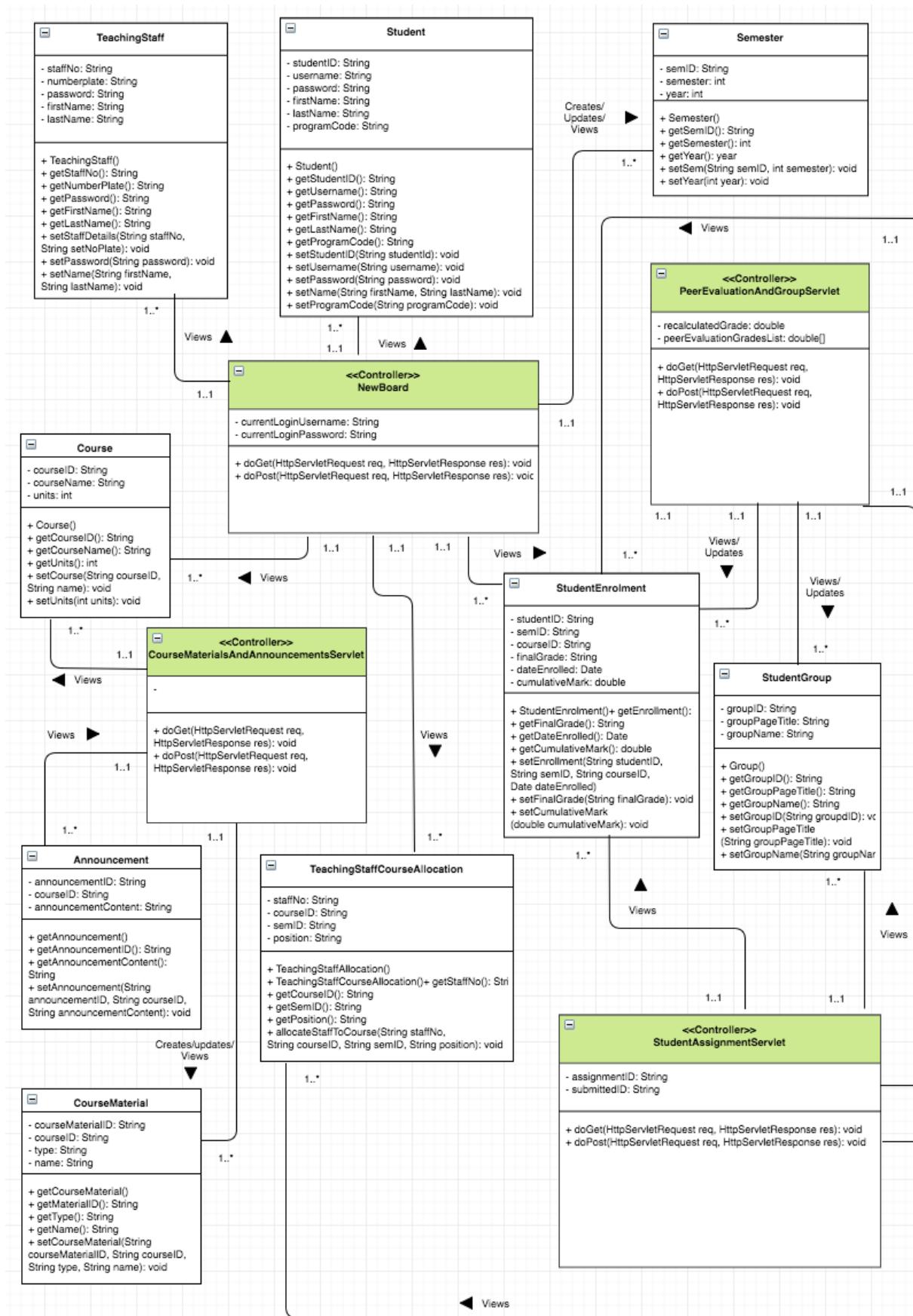
Use Case Name	View Group	
Scenario	Teaching staff view one particular group in a course	
Triggering Event	A member of teaching staff is on the 'View Groups' page, and selects one of the groups	
Brief Description	Information about the group is displayed to the Staff member	
Actors	All teaching staff	
Related Use Cases		
Stakeholders	All teaching staff, students	
Entry Condition	Teaching staff is on the 'View Groups' page, and selects one of the groups, and is logged in	
Exit Condition	The staff member selects 'Exit'	
Flow of Events	Teaching staff	System
	1. Staff select one of the groups in 'View Groups'	1.1. Retrieves details of the group (eg, group name) 1.2. Retrieves the student numbers and names of all students in the group 1.3. Retrieves any assessment items or peer evaluation forms 1.4. Retrieves any other activity or items that the group has been doing (e.g, uploading other files) 1.5. Display group as part of the list with retrieved information
Exception Condition	1.3. Group has not submitted any assessments a. Display "No Assessment items submitted" 1.3. Group has not submitted peer evaluation forms a. Display "No Peer Evaluation Forms submitted" 1.4. Group does not have any other information (extra activities/files) a. Nothing is displayed	

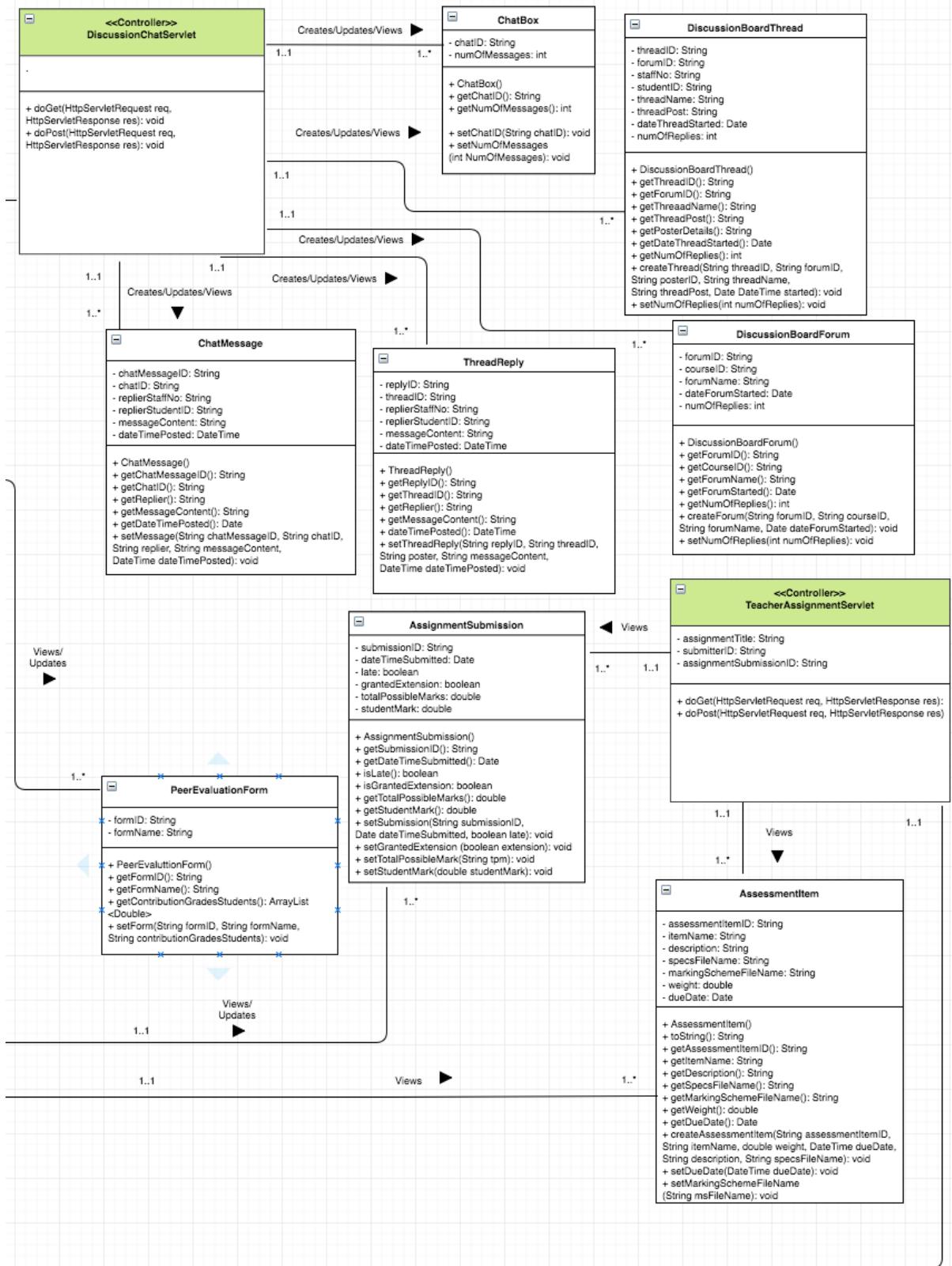
Use Case Name	View Group	
Scenario	Teaching staff view one particular group in a course	
Triggering Event	A member of teaching staff is on the 'View Groups' page, and selects one of the groups	
Brief Description	Information about the group is displayed to the Staff member	
Actors	All teaching staff	
Related Use Cases		
Stakeholders	All teaching staff, students	
Entry Condition	Teaching staff is on the 'View Groups' page, and selects one of the groups, and is logged in	
Exit Condition	The staff member selects 'Exit'	
Flow of Events	Teaching staff	System
	1. Staff select one of the groups in 'View Groups'	1.1. Retrieves details of the group (eg, group name) 1.2. Retrieves the student numbers and names of all students in the group 1.3. Retrieves any assessment items or peer evaluation forms 1.4. Retrieves any other activity or items that the group has been doing (e.g, uploading other files) 1.5. Display group as part of the list with retrieved information
Exception Condition	1.3. Group has not submitted any assessments a. Display "No Assessment items submitted" 1.3. Group has not submitted peer evaluation forms a. Display "No Peer Evaluation Forms submitted" 1.4. Group does not have any other information (extra activities/files) a. Nothing is displayed	

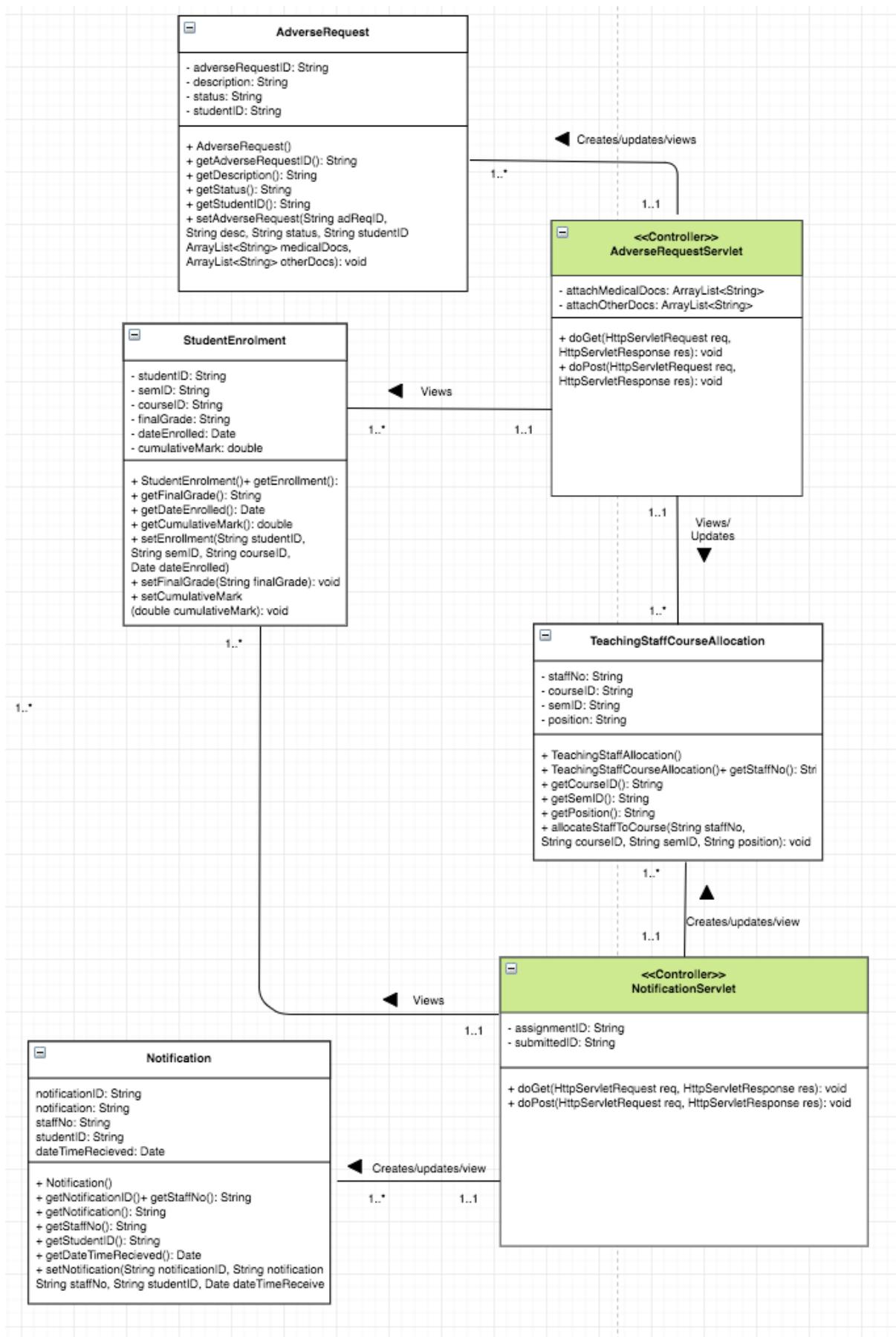
5. Content Model

Class Diagram

- Next page (40) - Class Diagram Part 1 (Left side)
- Following page (41) - Class Diagram Part 2 (Right side)
- Following page (42) - Class Diagram Part 3

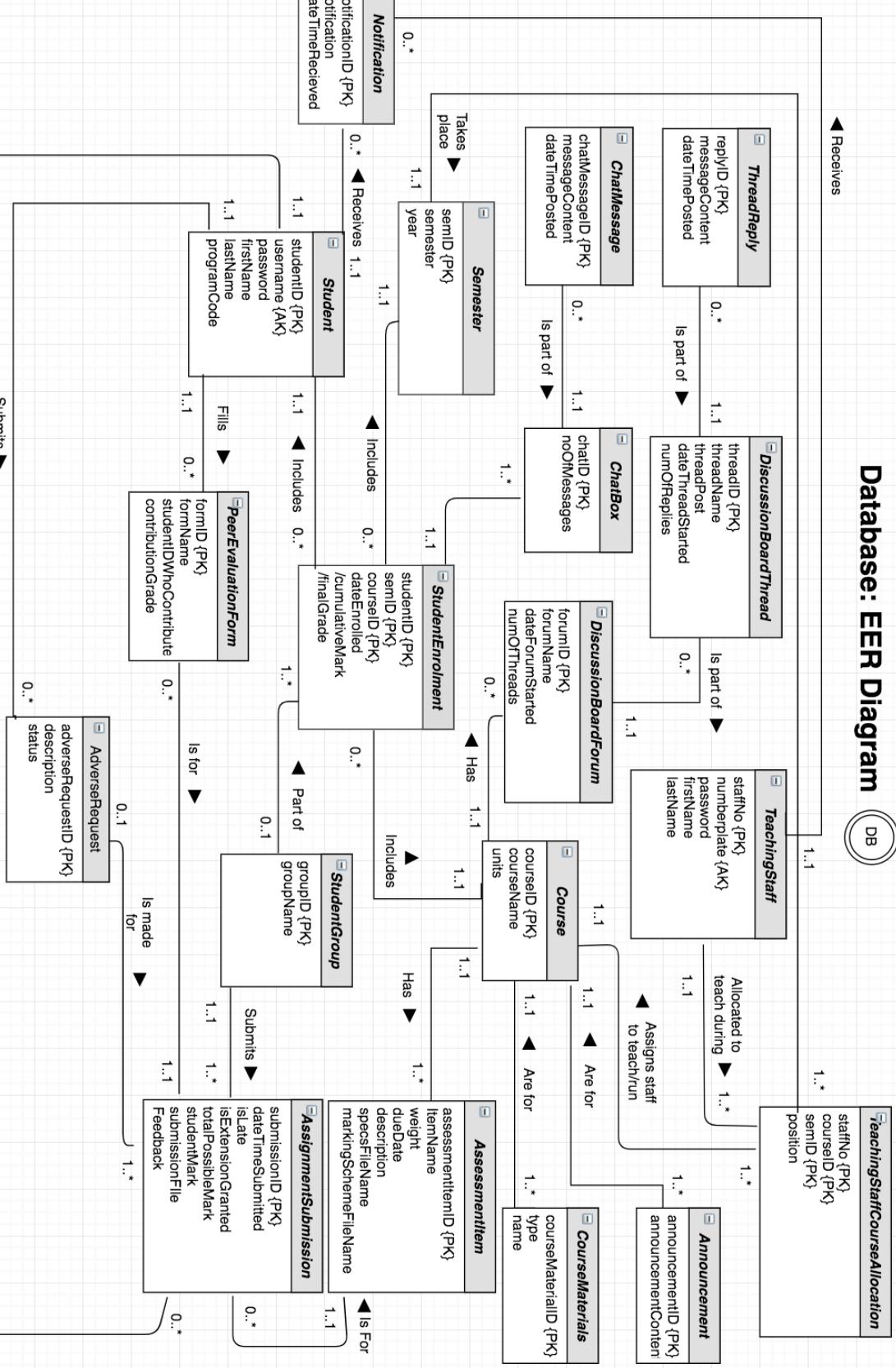






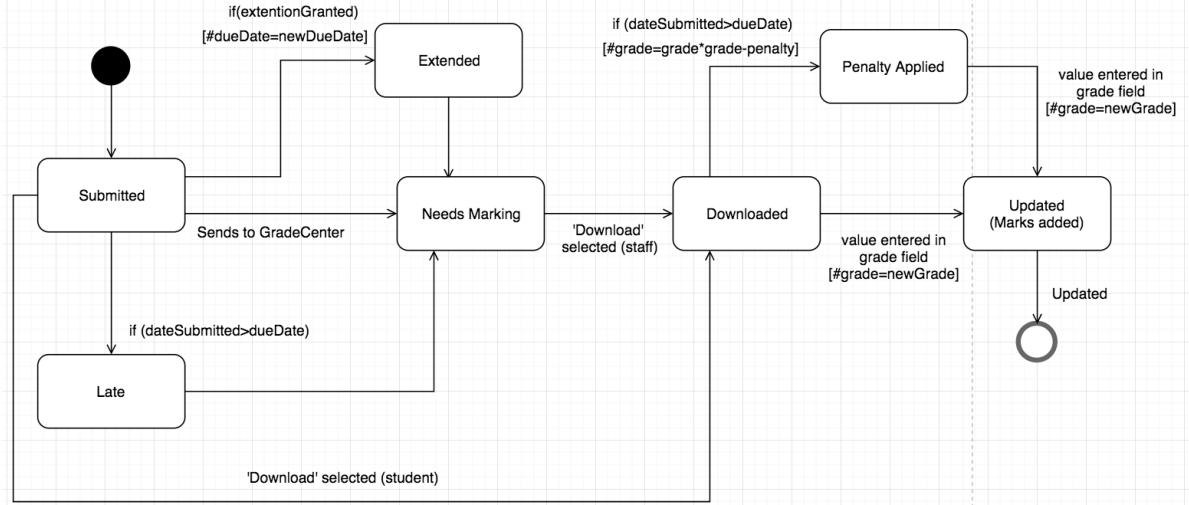
EER Diagram

Database: EER Diagram

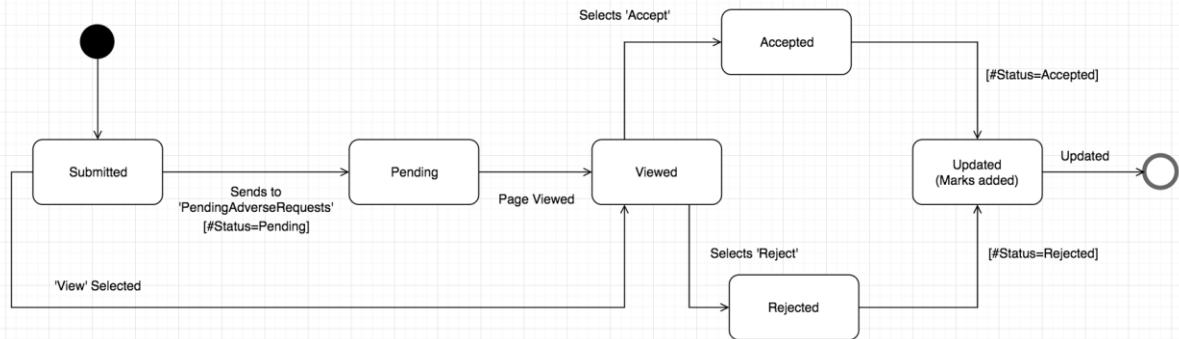


State Diagrams

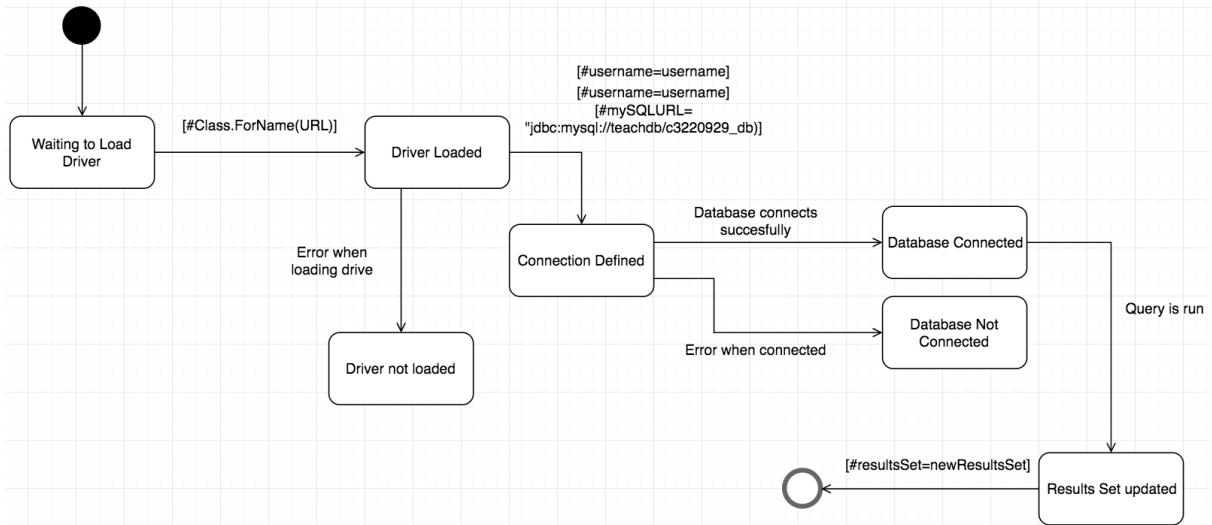
Assignment Submission



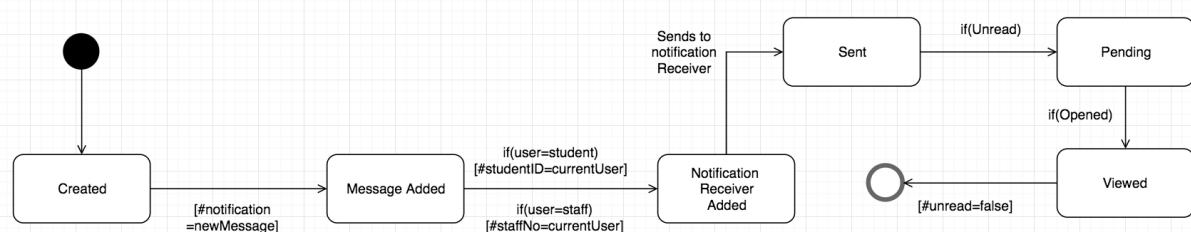
Adverse Request



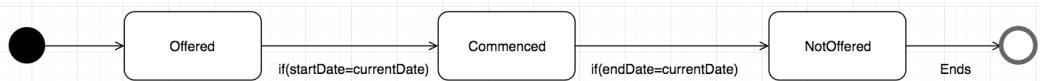
Database Functions



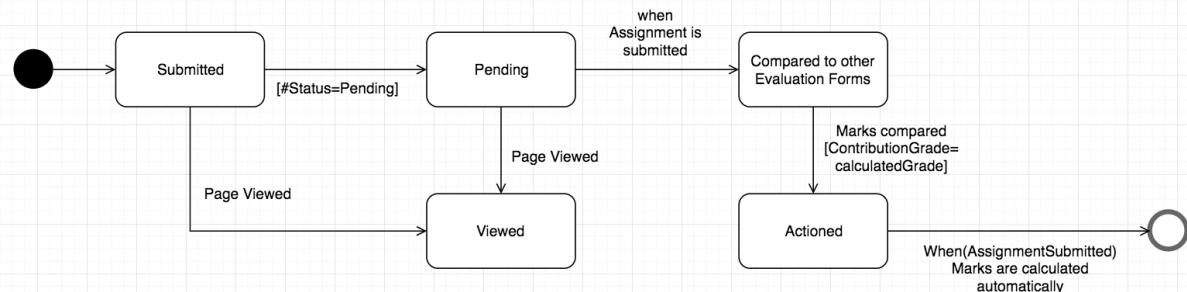
Notification



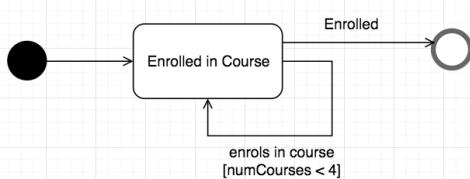
Course



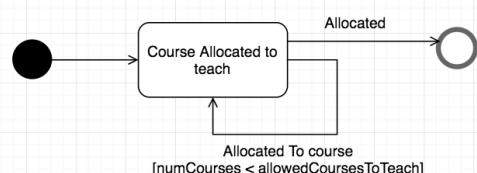
PeerEvaluationForm



Student



Teaching Staff



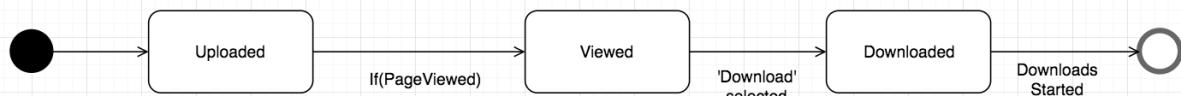
Semester



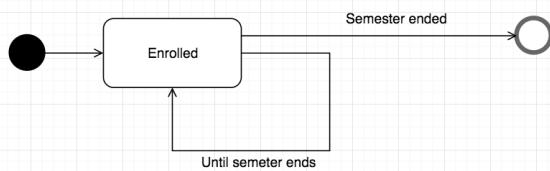
Announcement



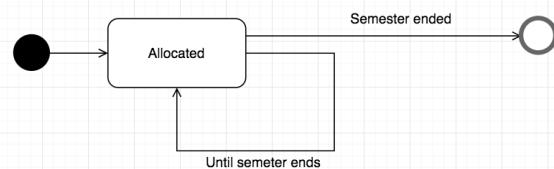
CourseMaterial



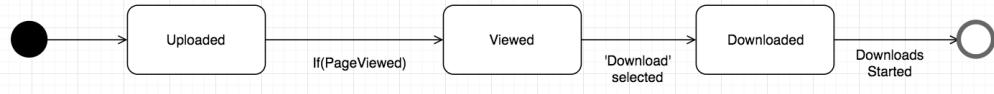
StudentEnrolment



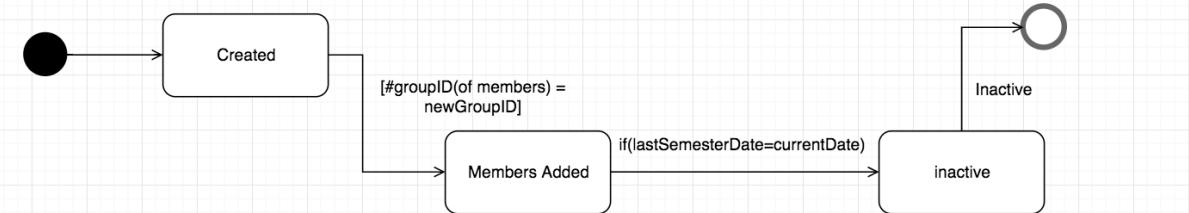
TeachingStaffCourseAllocation



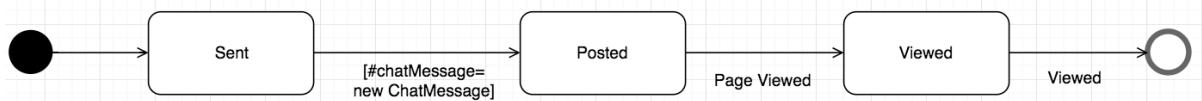
AssessmentItem



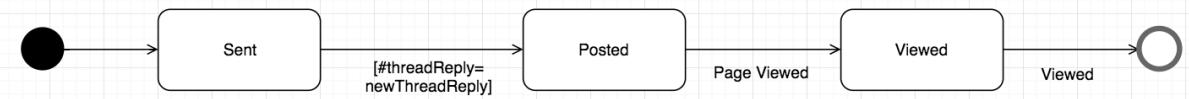
StudentGroup



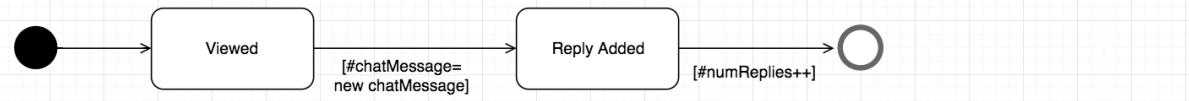
ChatMessage



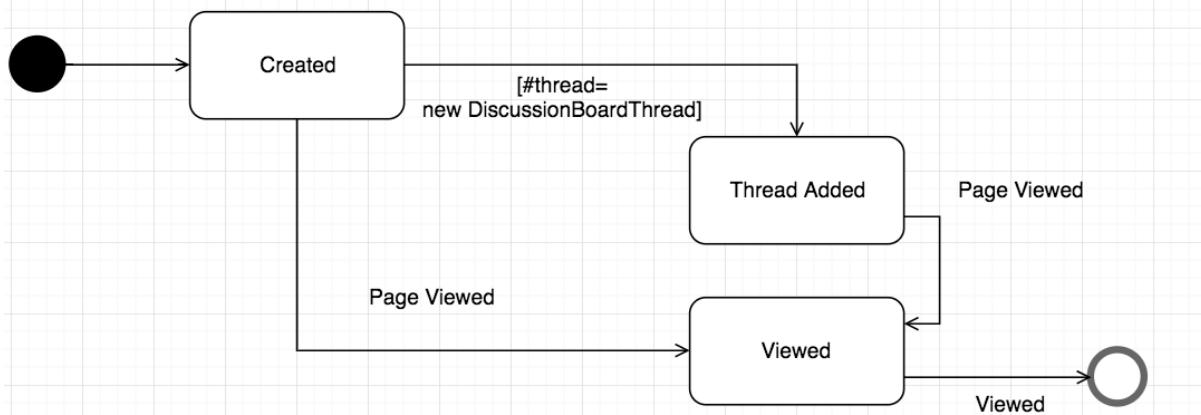
ThreadReply



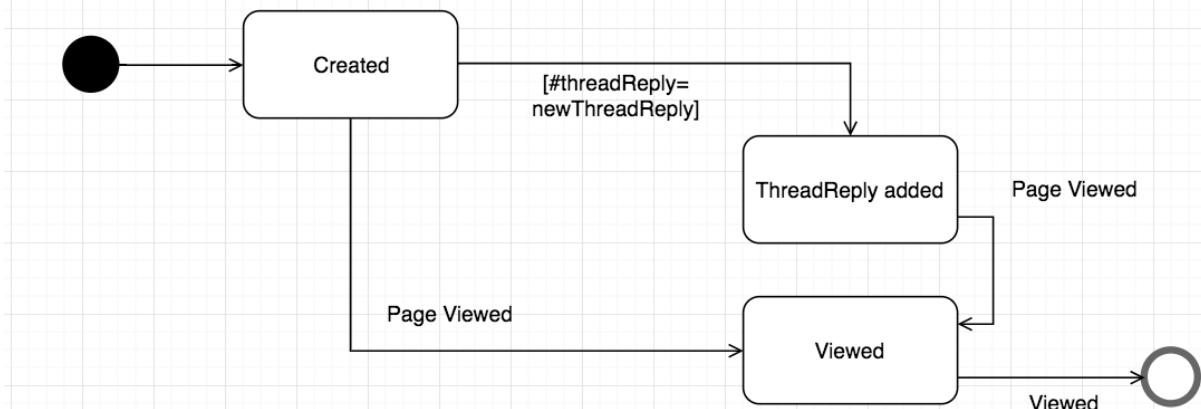
ChatBox



DiscussionBoardForum



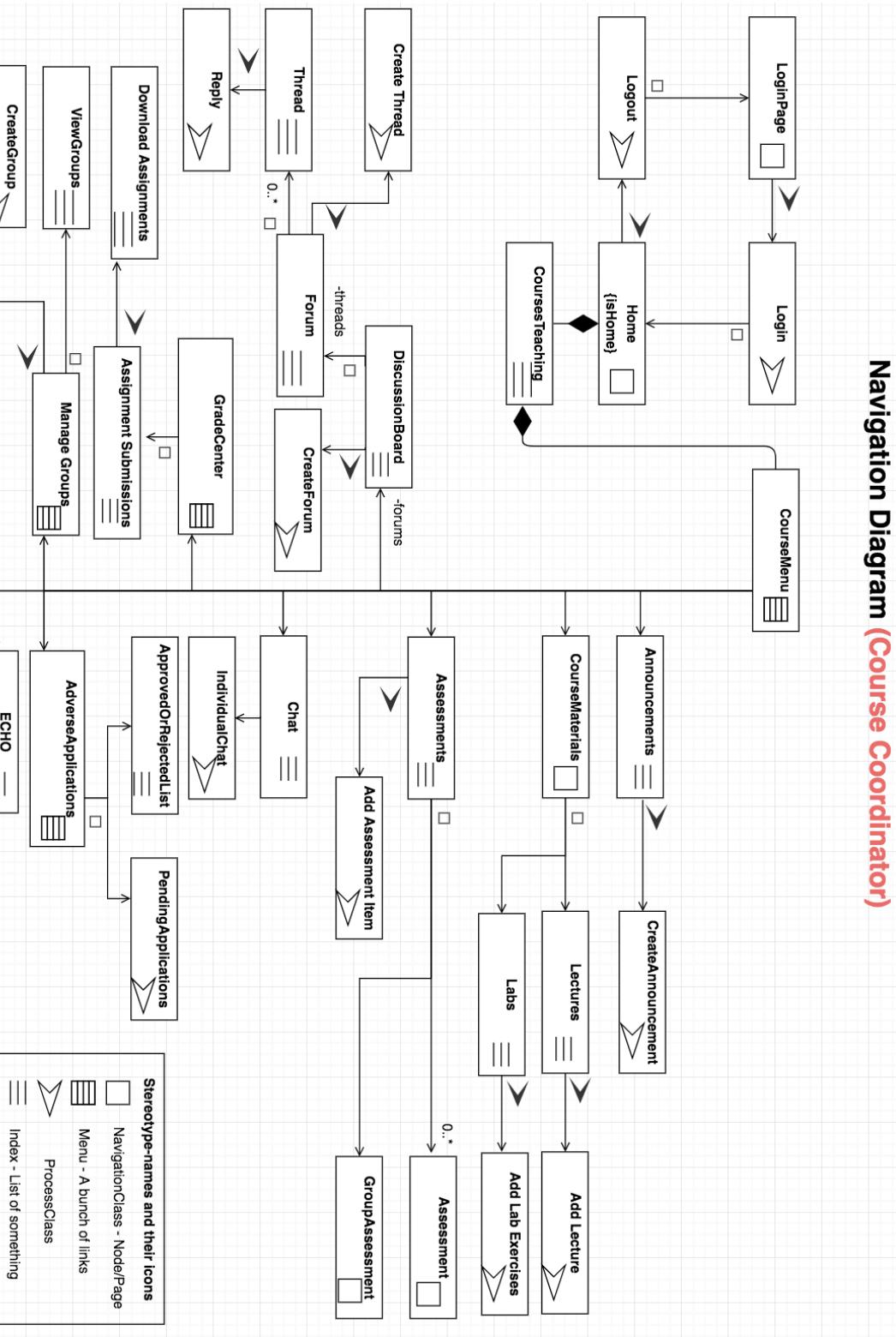
DiscussionBoardThread



6. Presentation Models

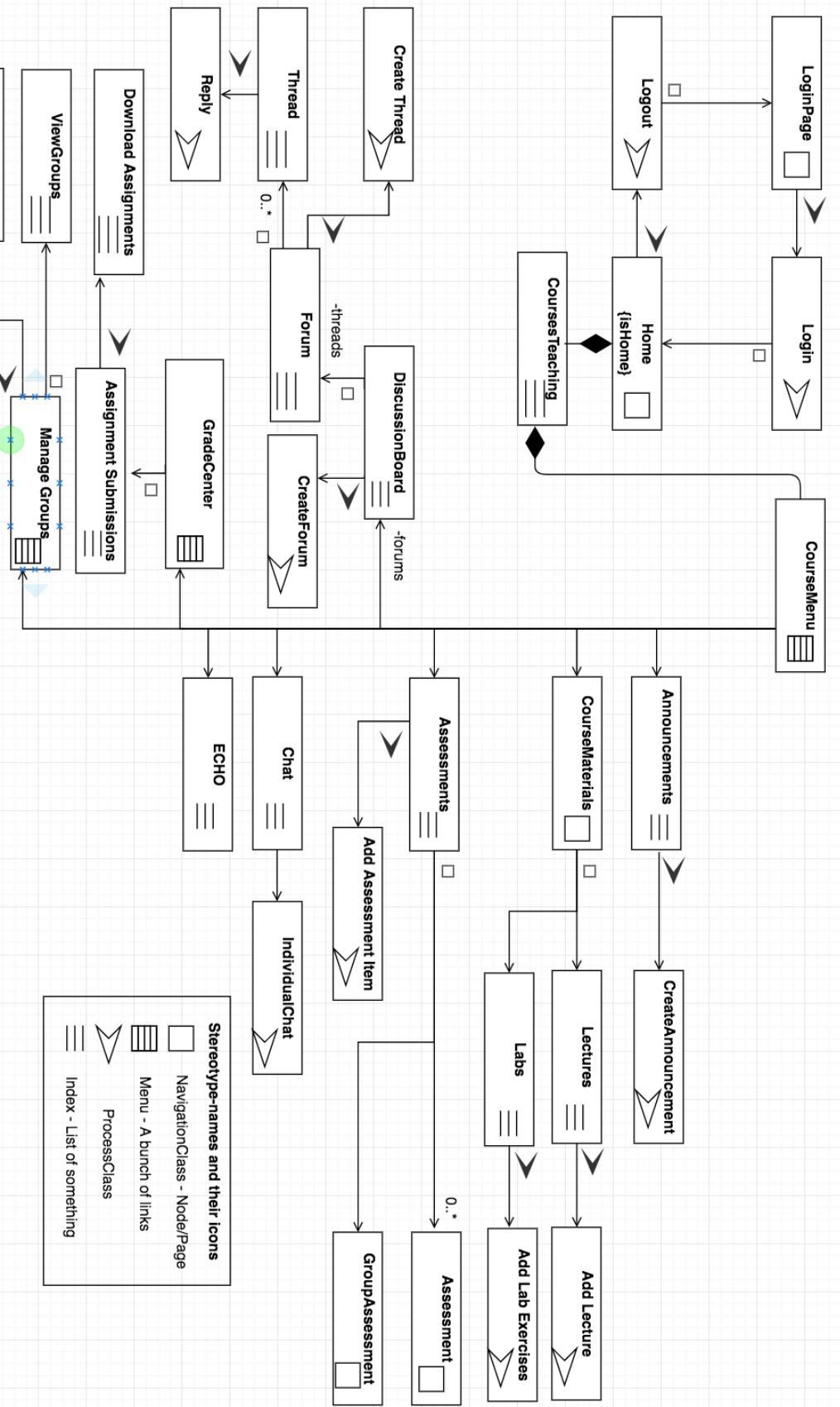
Navigation Diagram (Course Coordinator)

Navigation Diagram (Course Coordinator)



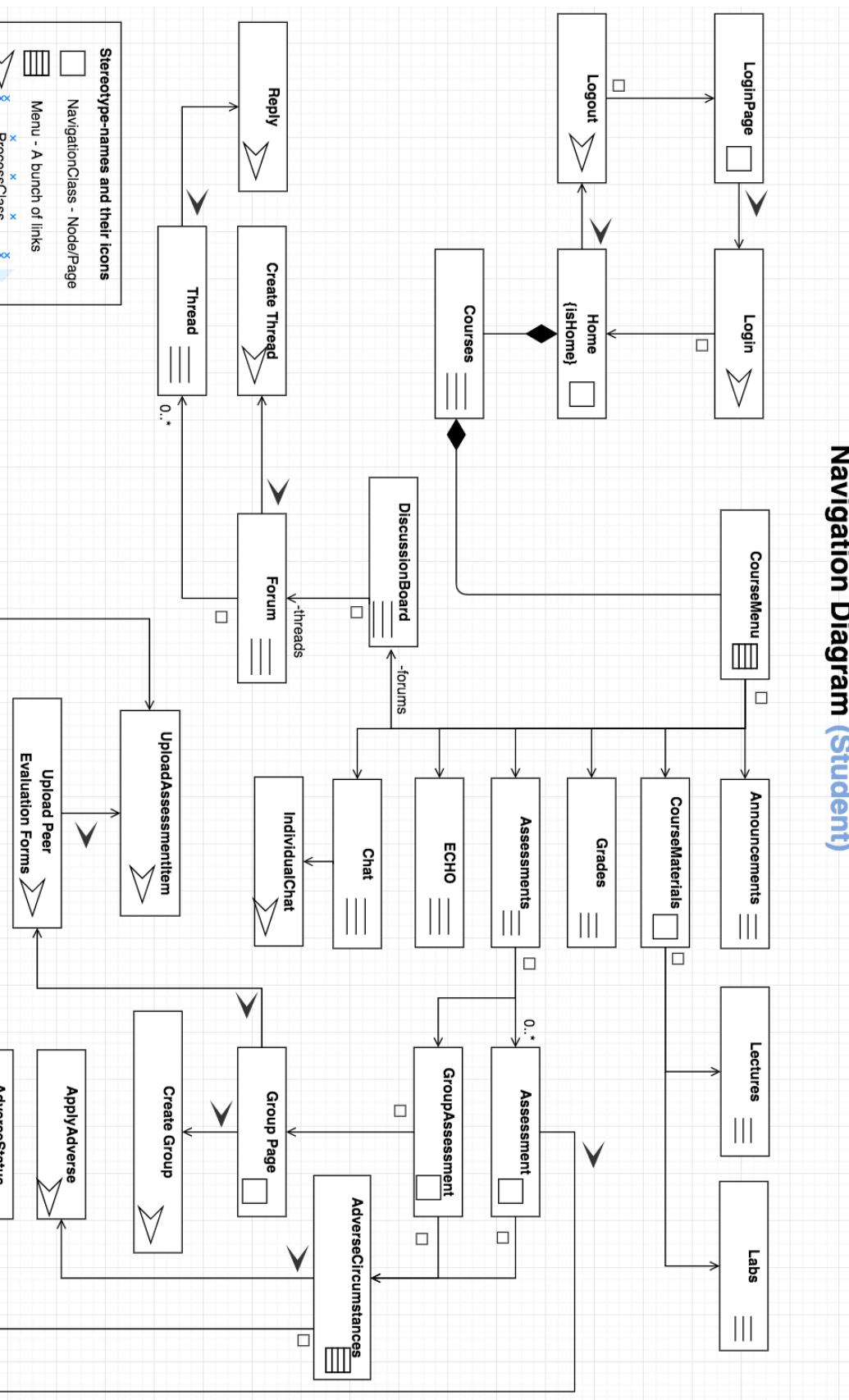
Navigation Diagram (Other Teaching Staff)

Navigation Diagram (Other Teaching Staff)



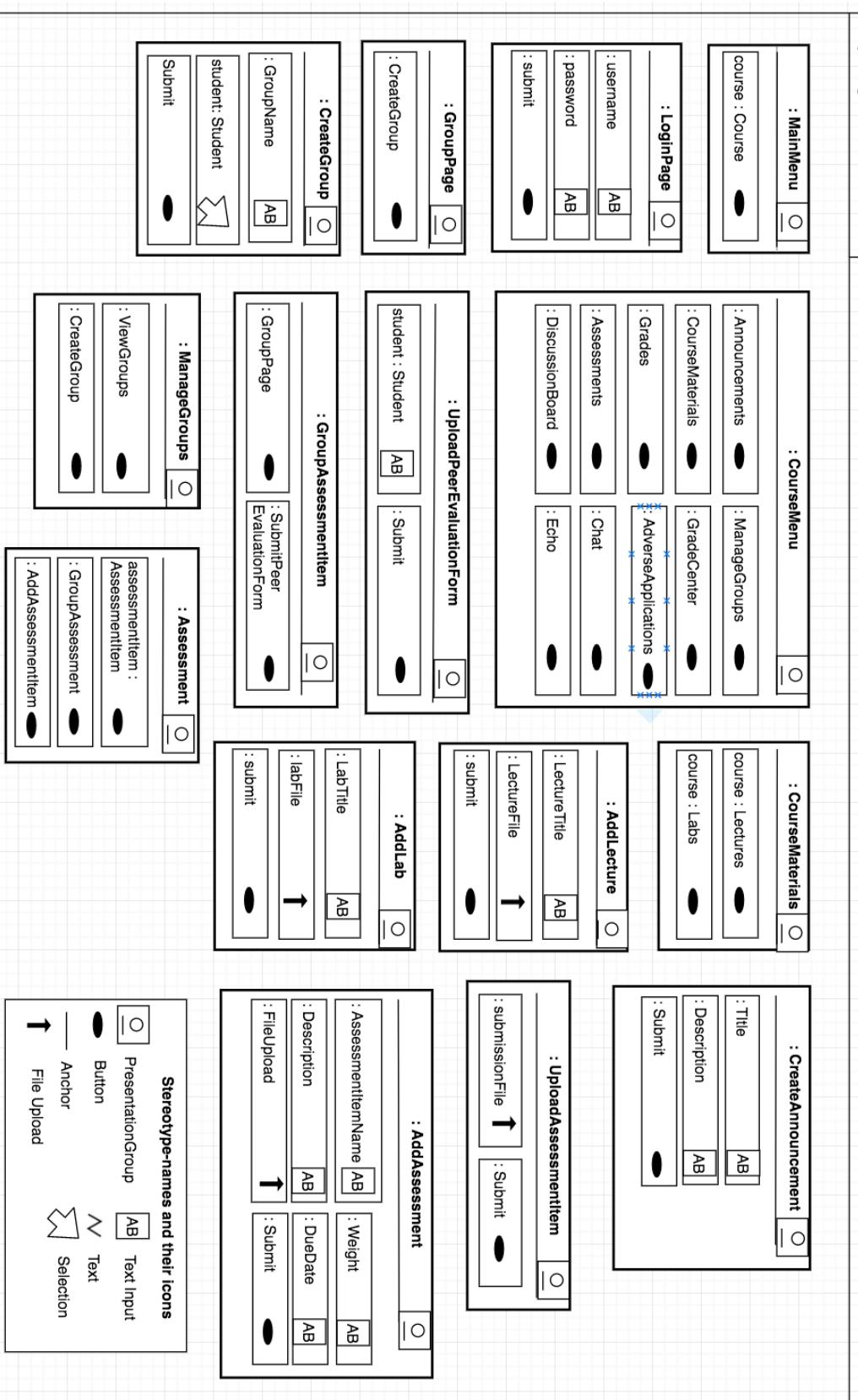
Navigation Diagram (Student)

Navigation Diagram (Student)

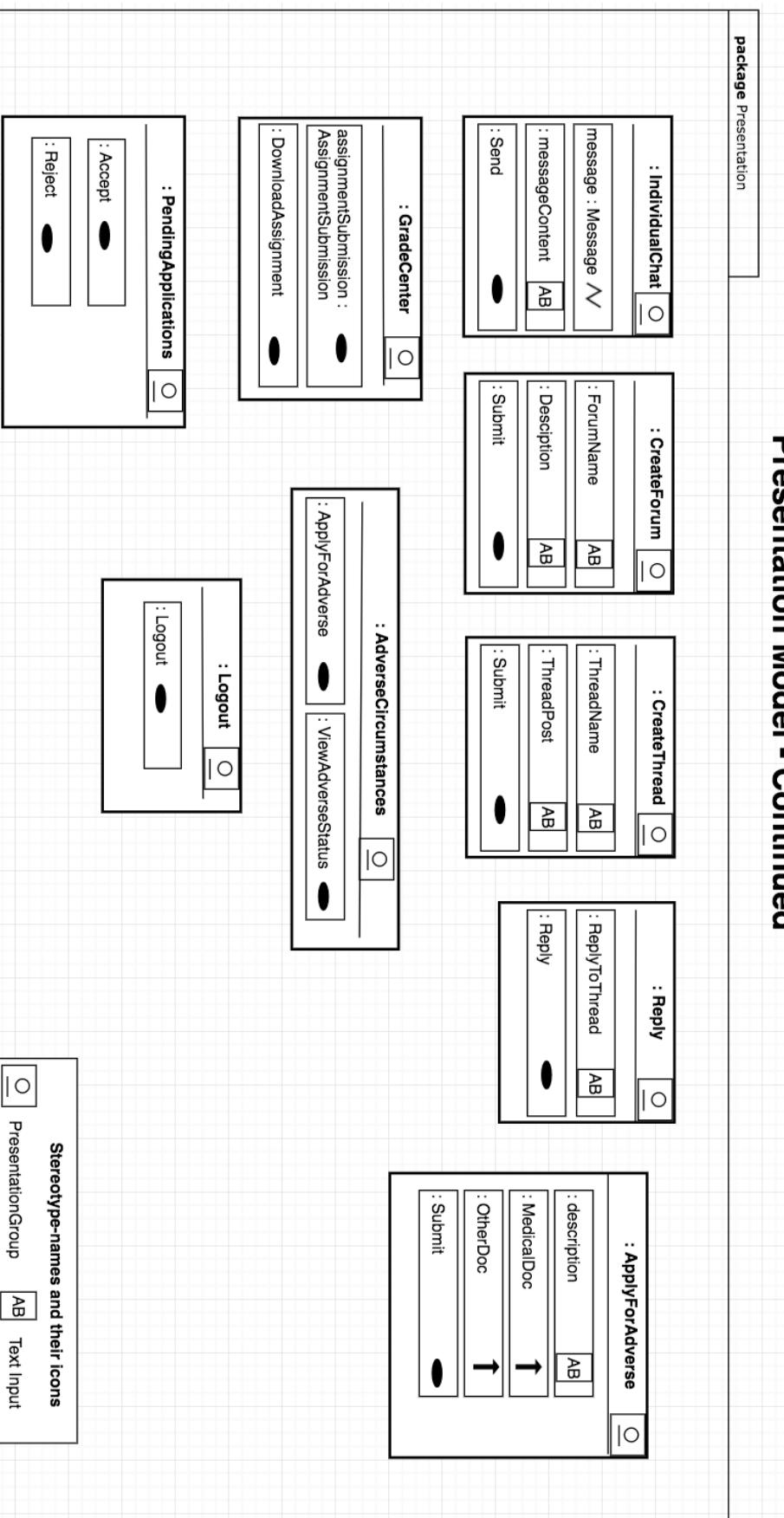


Presentation Model

Presentation Model

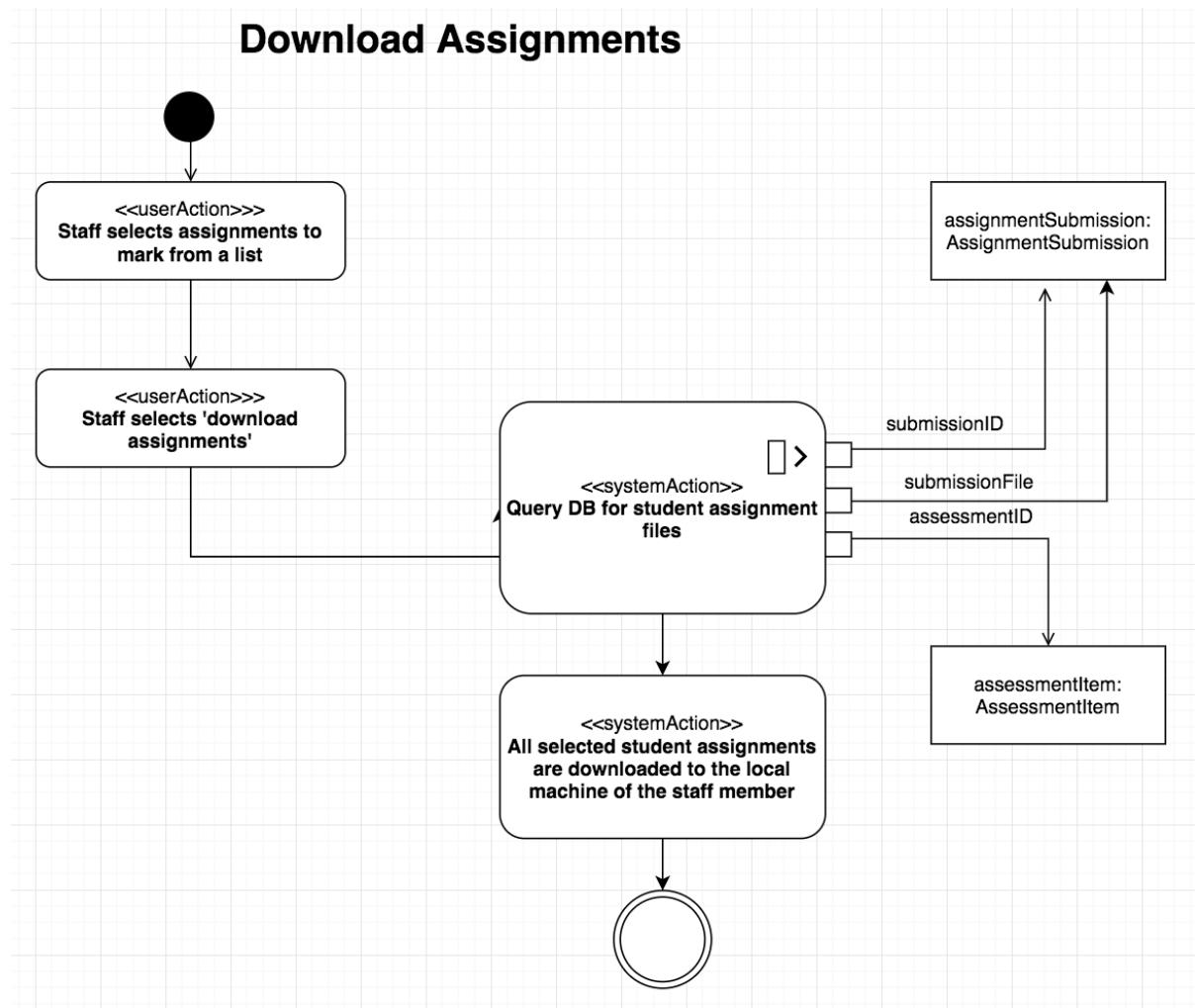


Presentation Model - Continued

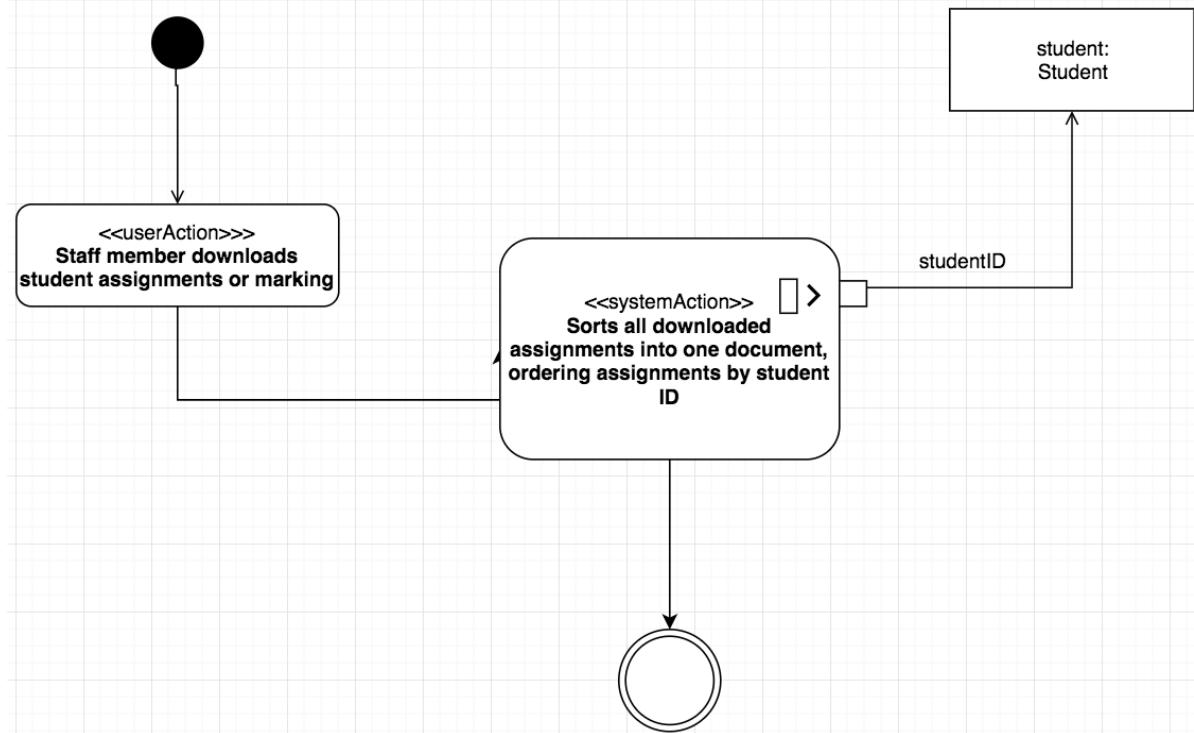


7. Process Flow Model

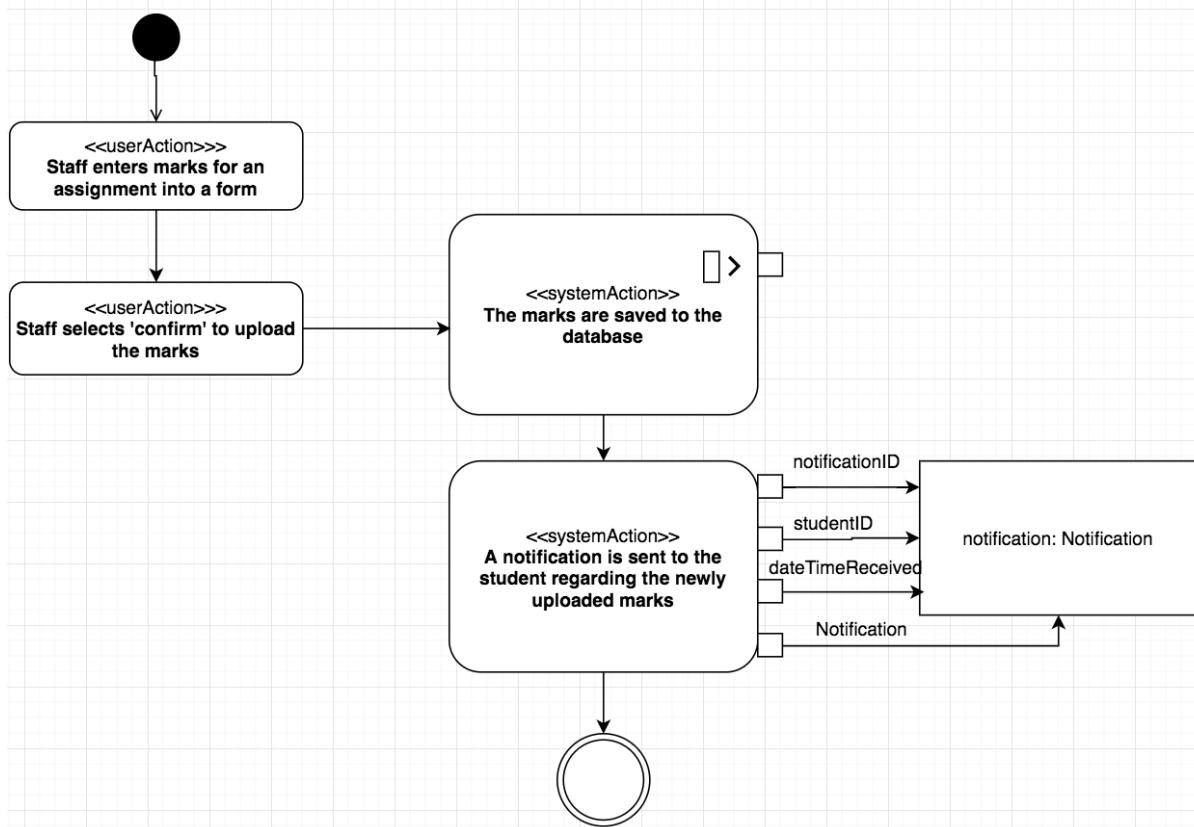
Process Flow Diagrams



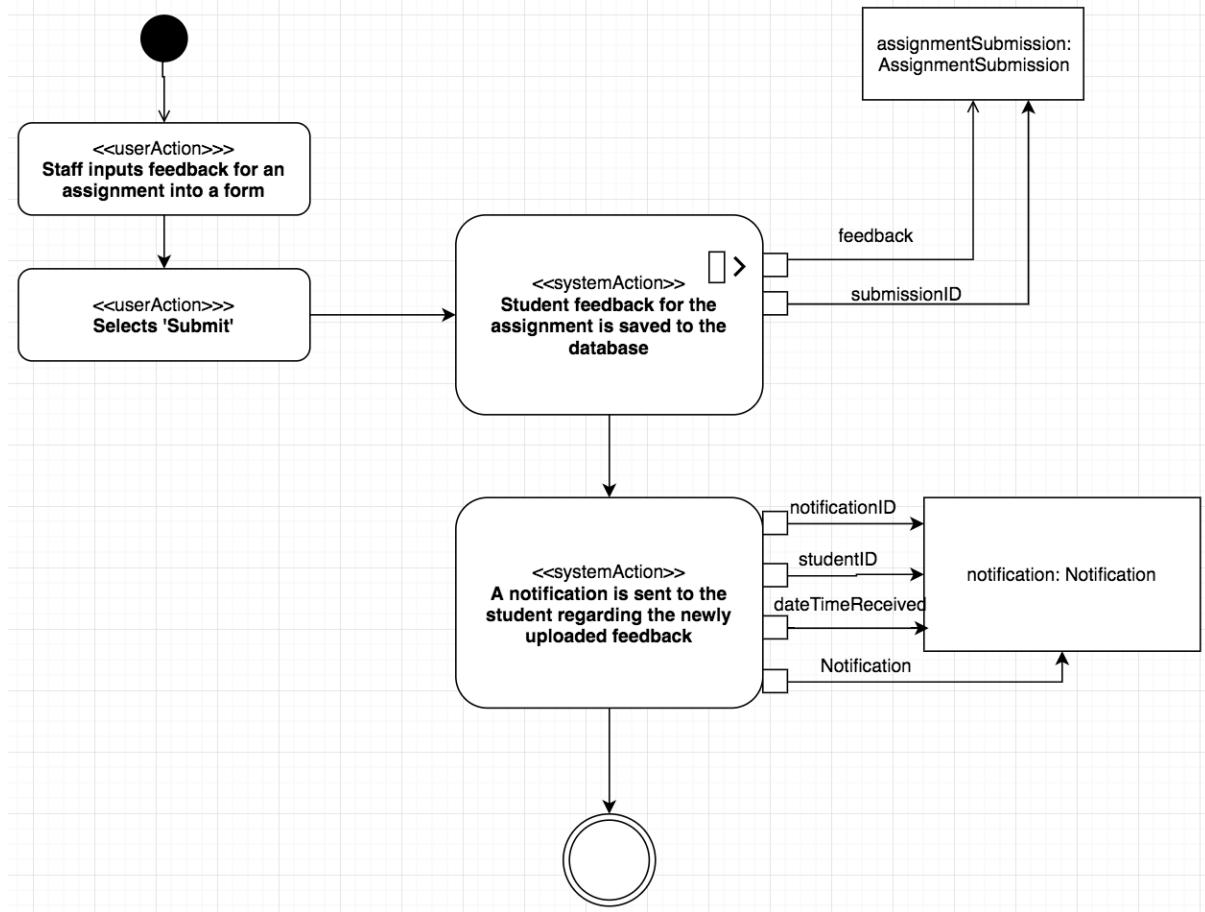
Automatically Sort Assignments by Student ID

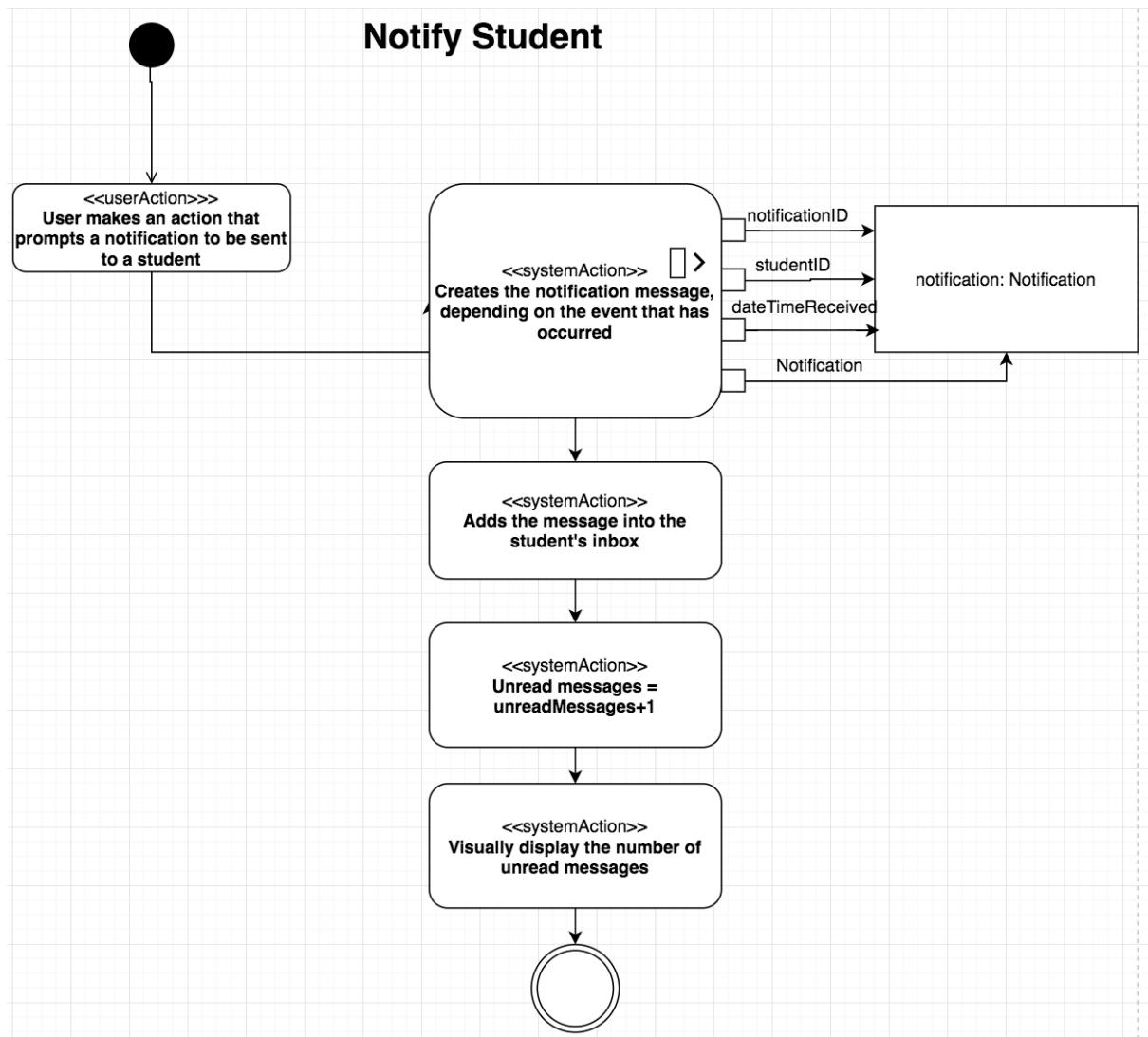


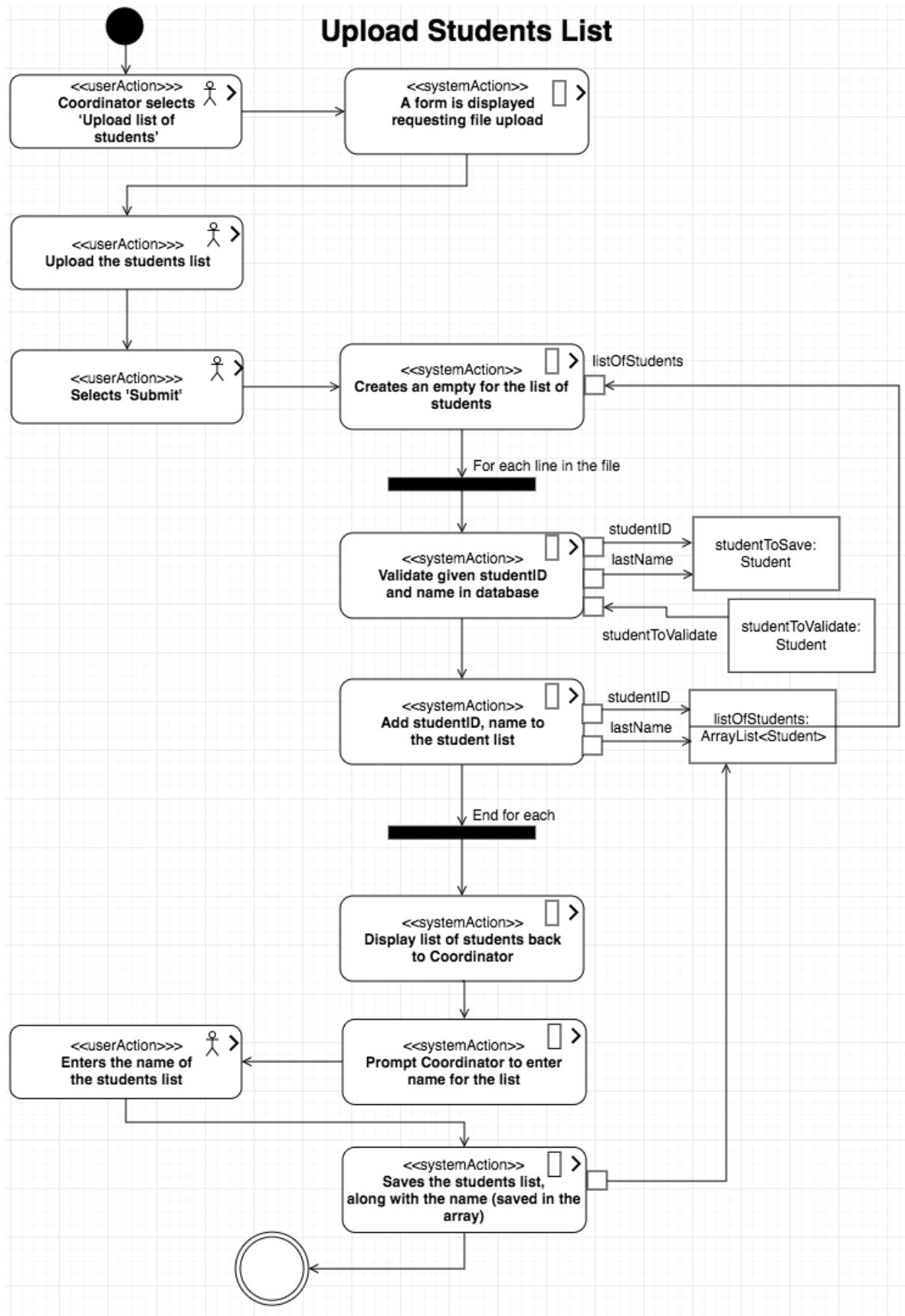
Upload Marks



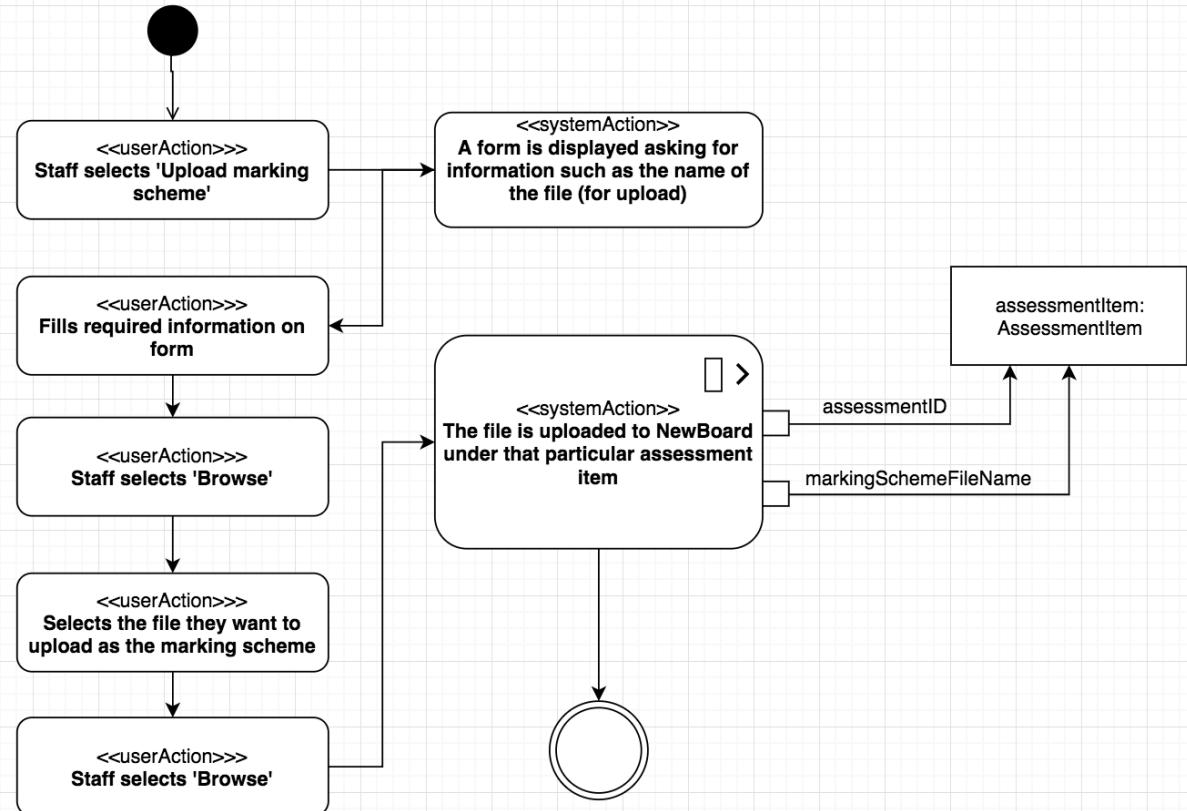
Upload Feedback



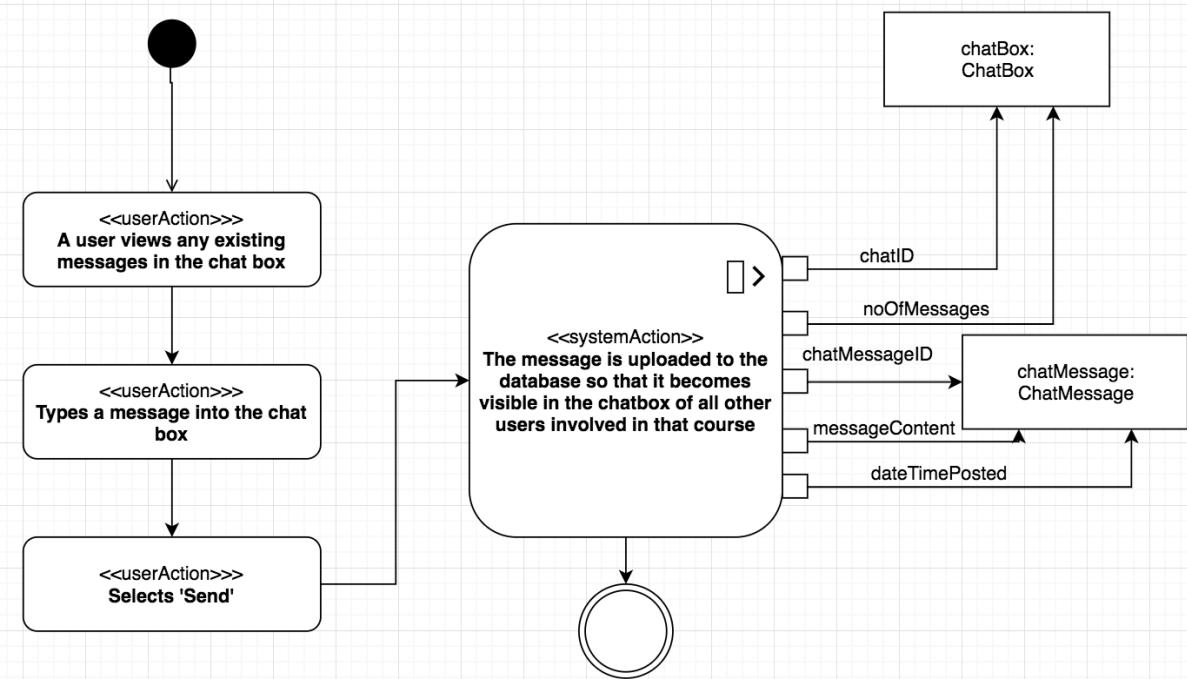




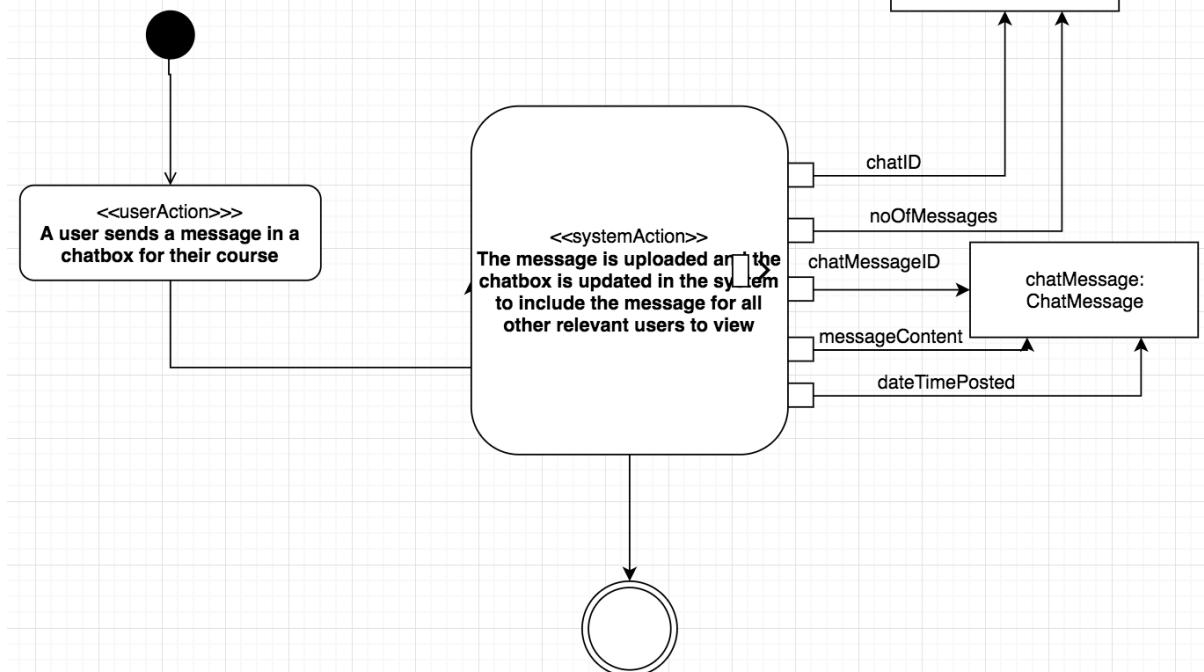
Upload Marking Scheme



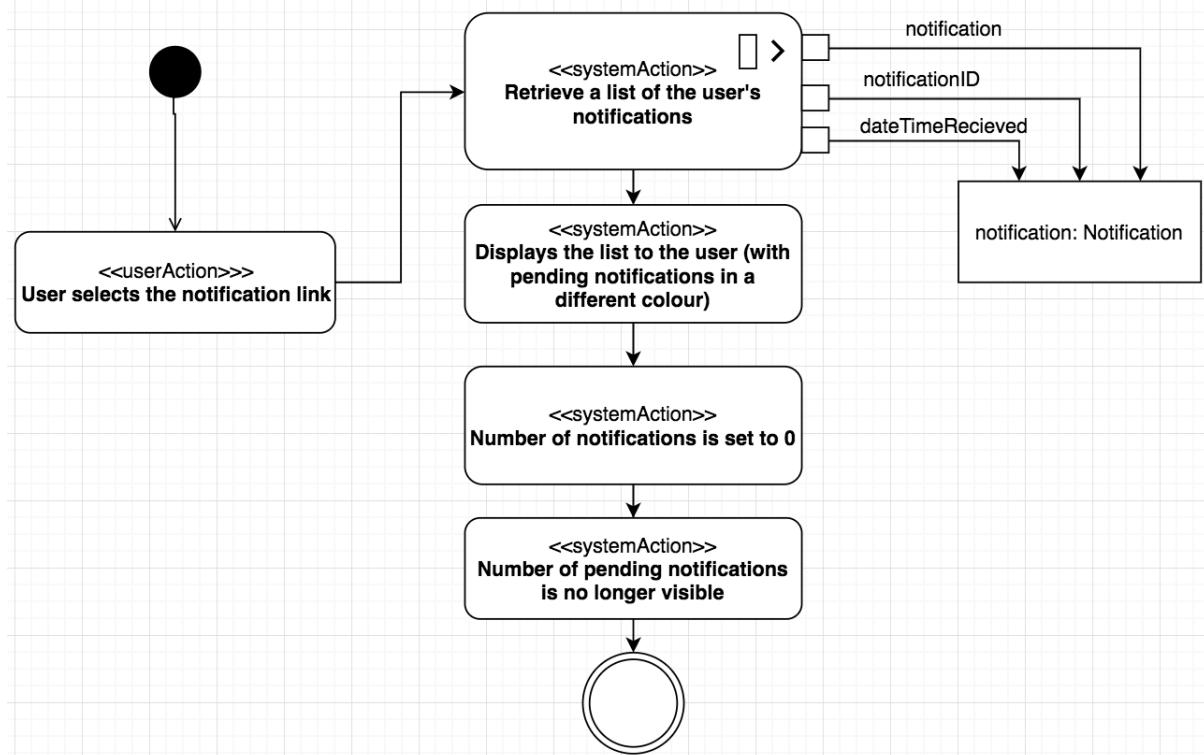
Respond and Participate in Feedback Chat Discussions



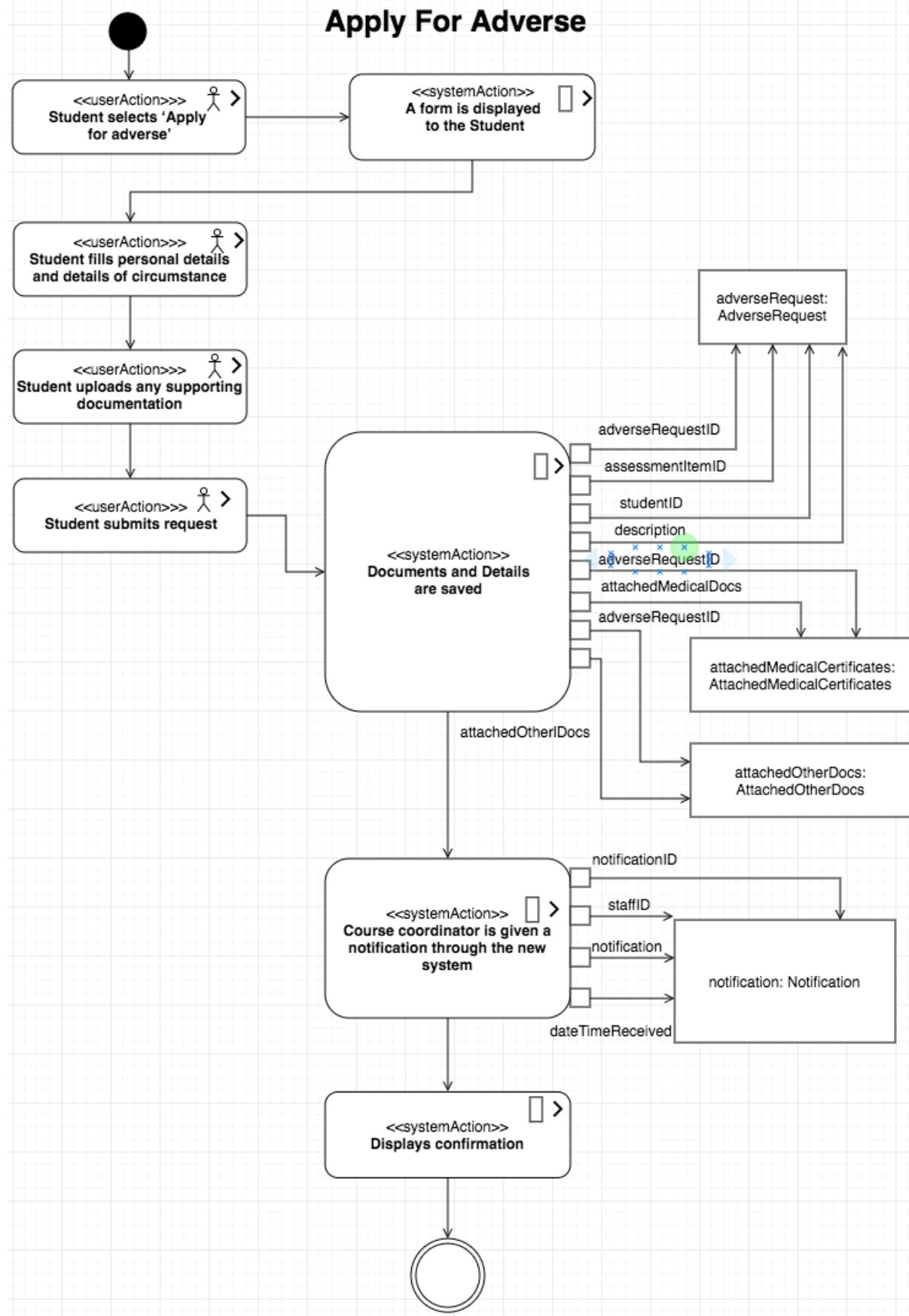
Update Chat Window



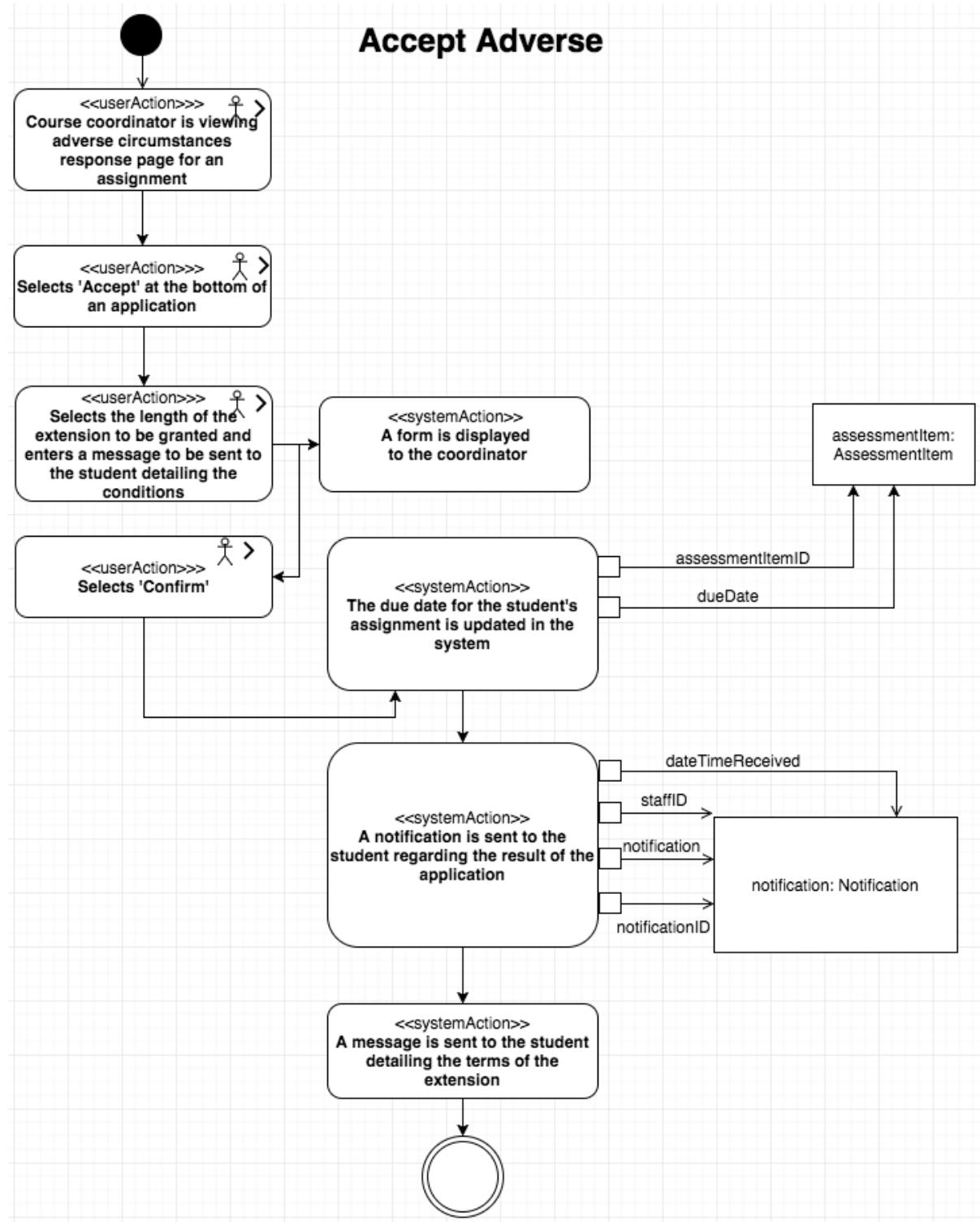
Check Notifications



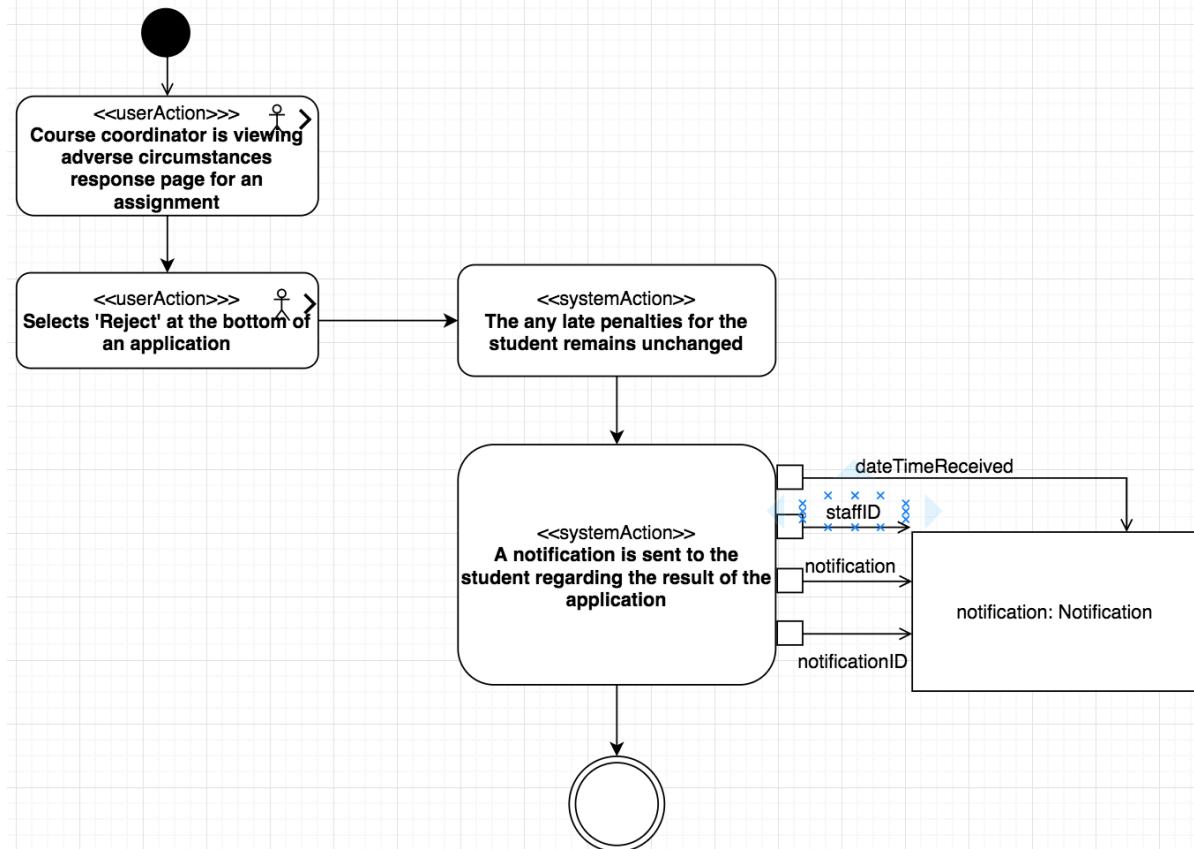
Apply For Adverse



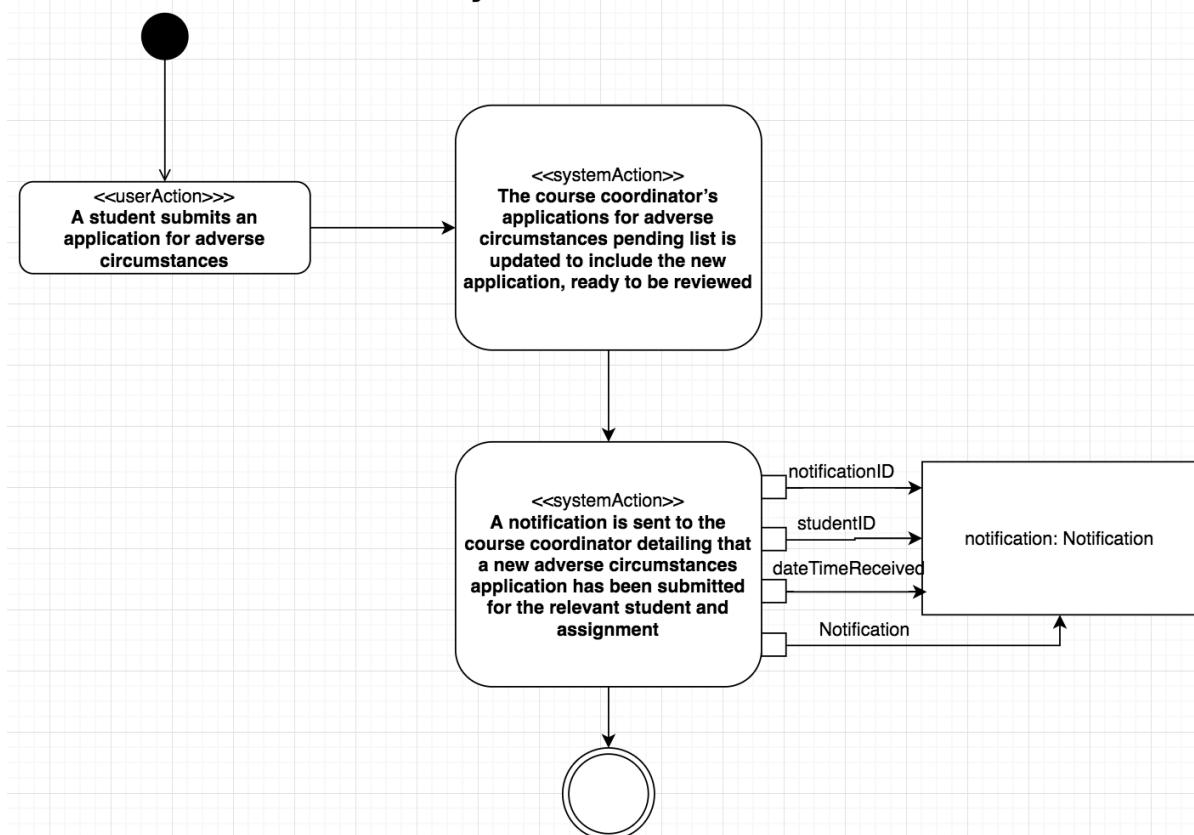
Accept Adverse



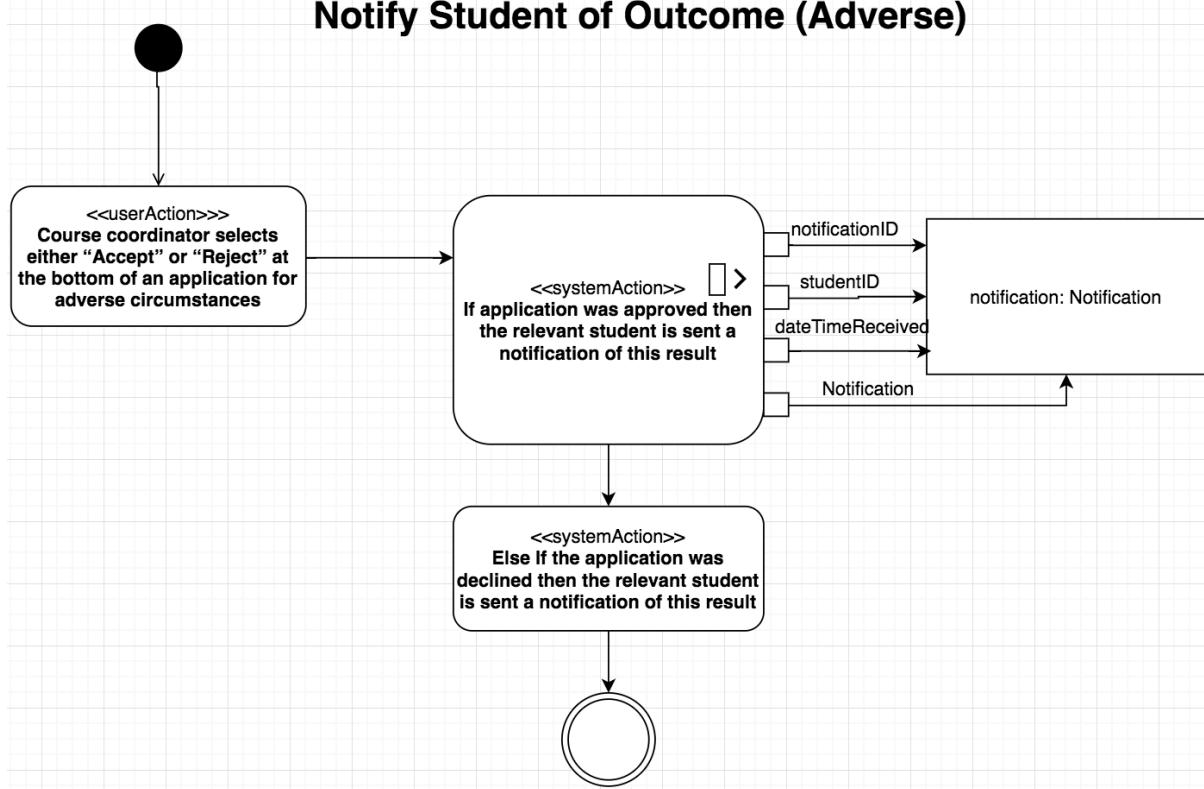
Reject Adverse



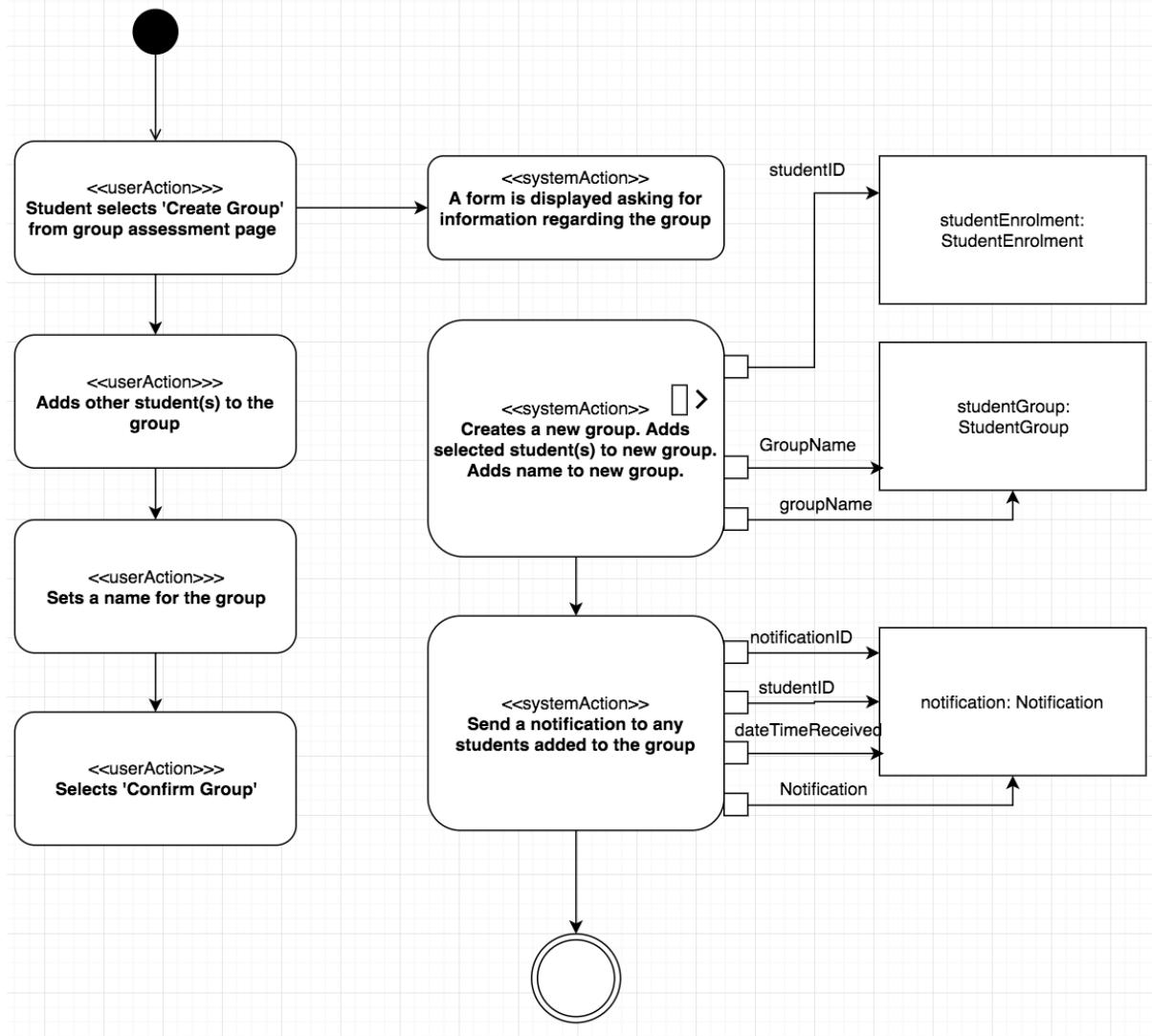
Notify Coordinator



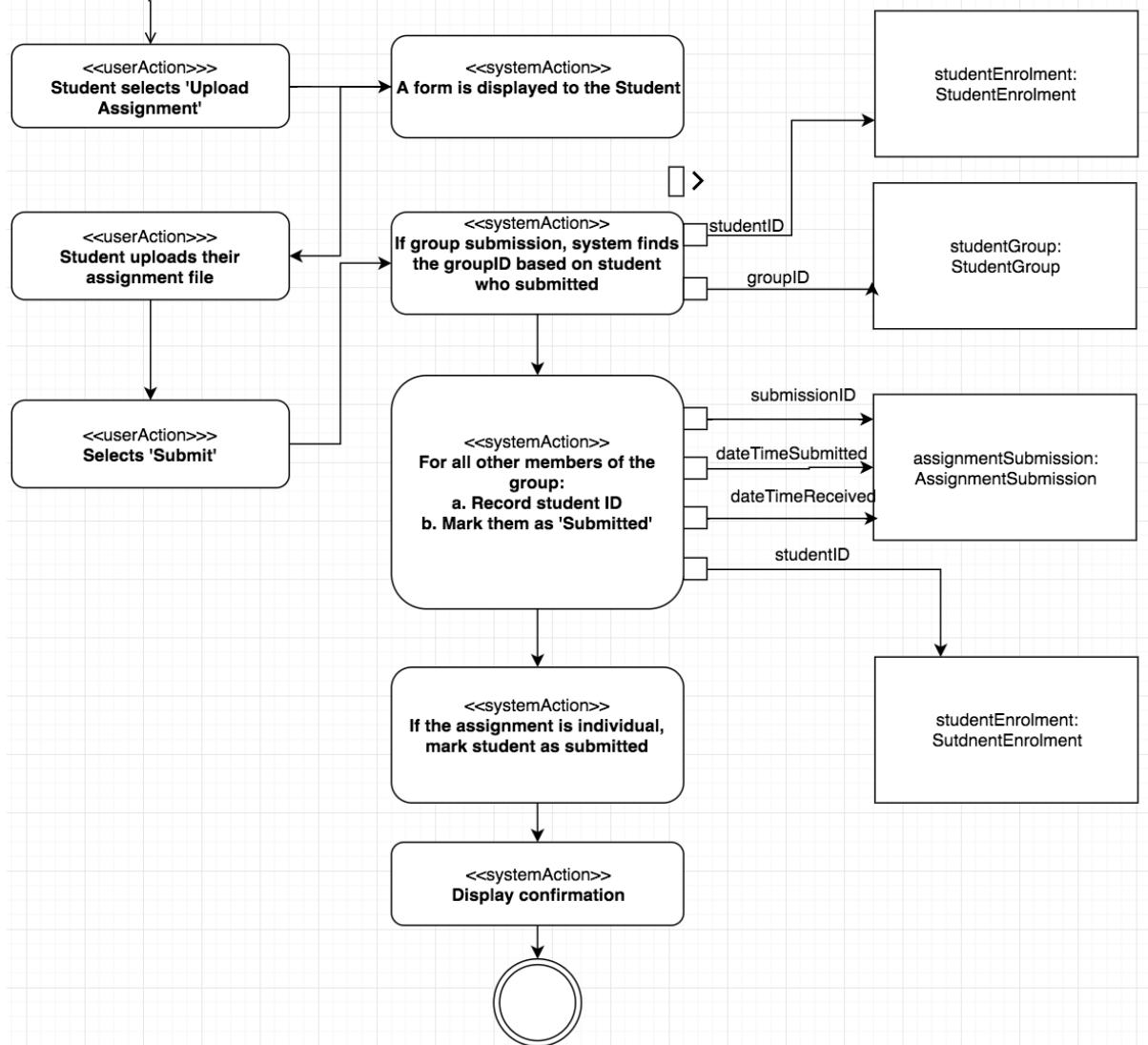
Notify Student of Outcome (Adverse)



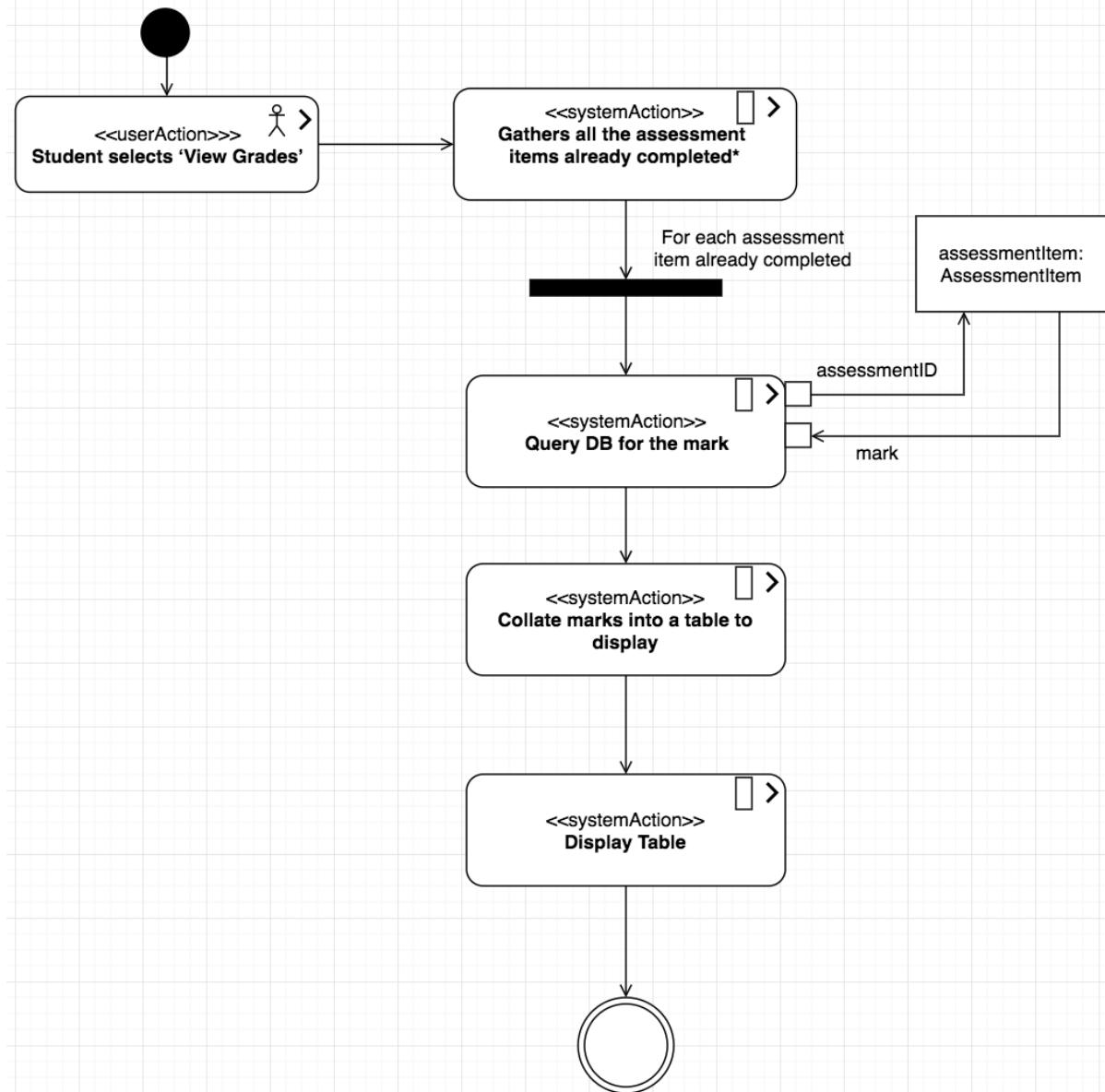
Create Group (for group assessments)



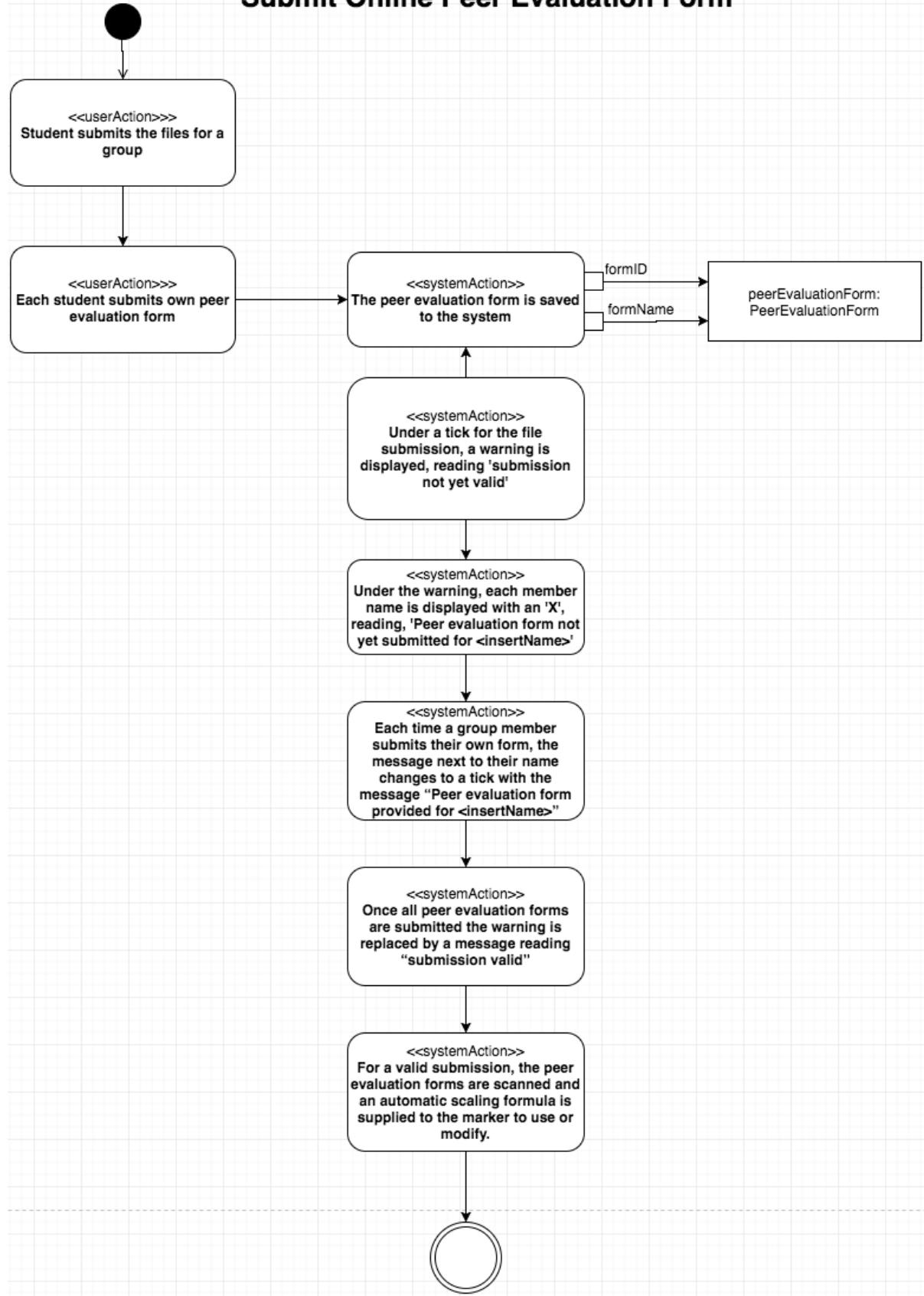
Upload Assignment Submission



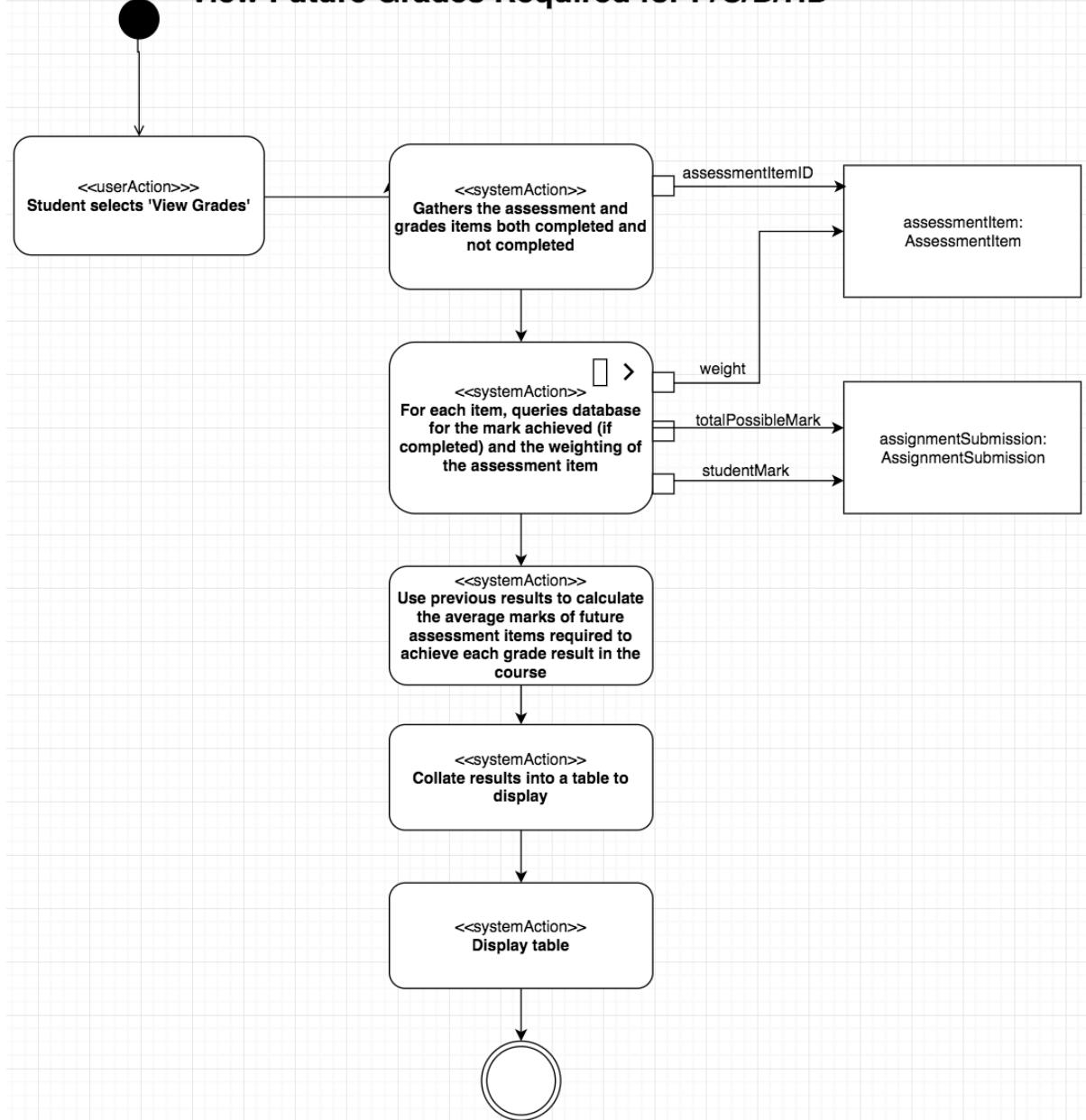
View Grades



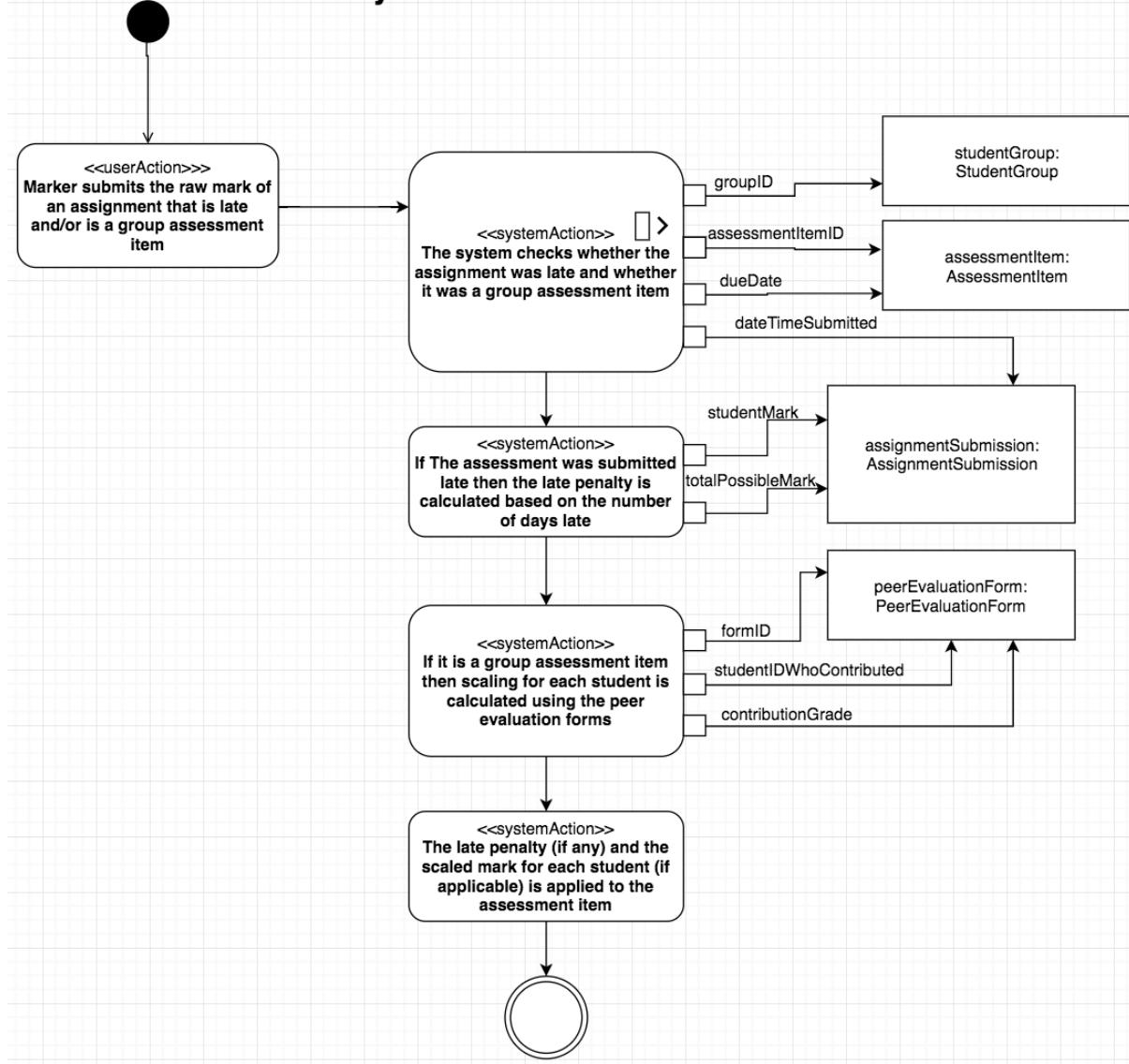
Submit Online Peer Evaluation Form



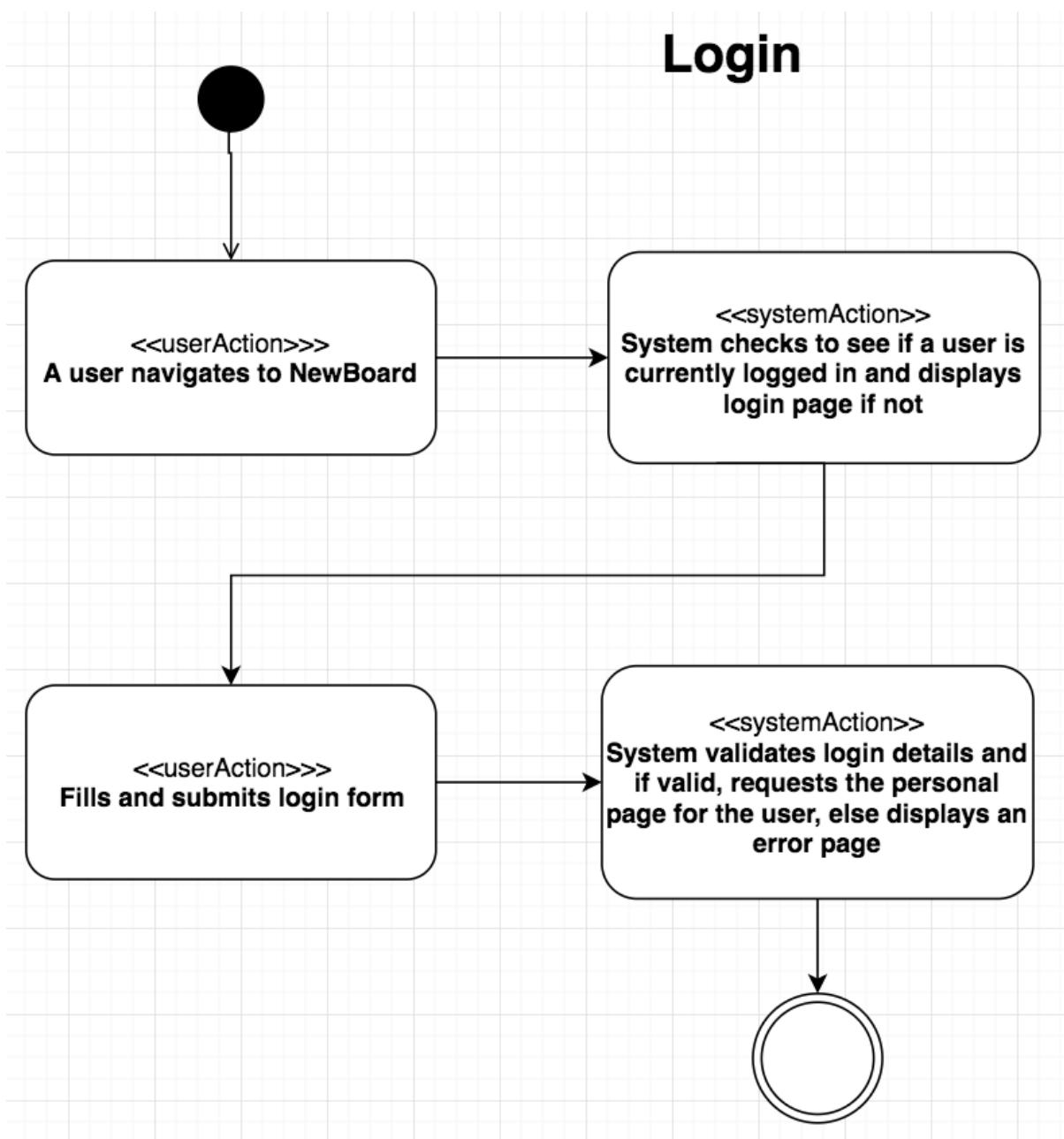
View Future Grades Required for P/C/D/HD



Automatically Calculate an Assessment Item Grade



Login



Logout

