Project: EduTrak

Team No.: 5

Class: CSE 3310; Fall 2020

Module: System Requirements Analysis (SRA)

Deliverable: SRA Document

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Revision History

Version number	Date	Originator	Reason for change	High level description of changes
1.0	10/18/2020	Team 5	Initial draft	Copying and Pasting information/diagrams from Increment 1.
1.1	10/25/2020	Team 5	Revision	Reviewed first draft together as a team and commented on each other's work. Added more sequences to section 4. Revised requirements from Calendar UI and To Do List to make components match.
1.2	10/28/2020	Team 5	Final Draft	Arranged the page numbers and made the final touches before submission.
1.3	12/7/2020	Team 5	Revised Final Draft	Removed the database from the project context diagram and uploaded clearer project context diagram as per instructor's direction. Also, texts in the project context diagram have been updated to make it same as in System Requirements.

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1. Introduction and Project Overview

As a group of college students with busy schedules, we understand the struggle to keep up with numerous deadlines and events that occur during the school year. That is why we are creating **EduTrak**, an app designed to help students with time management. The app scans your class syllabus file and creates course deadlines for you on an easy to use Calendar UI. This allows for students to get a visual representation of assignment due dates, class lecture times, and exam/quiz dates for all their courses. You may also manually add events on your calendar and view tasks/events as a To-Do List. Thus, allowing for the ability of the user to easily filter certain events and deadlines based on date and course number. Also included is an Automated Chatbot that helps answers any question that a user may have about navigating the app. Lastly, the app is also capable of sending notifications to remind users about any upcoming events.

2. Objectives

2.1 BUSINESS OBJECTIVES

The following is a list of business objectives:

Objective 1: Registration and Login: System will capture the following personal information:

Last name, middle name (optional), first name

Phone number home, cell

E-mail address

University (optional)

User Id & Password

Objective 2: **User Profile Setup**: System will store the following account information:

- Profile creation date/time

User can edit profile information

Objective 3: Syllabus Scanner System: System will capture a pdf and create a list of events and deadlines for assignments and tests.

Type of upload - Auto or Manual Upload

Scanner User Interface – Scan PDF to locate target information

Add information about Class name, time, location

Add information about Assignment name and due date

Add information about Tests and Exam dates

Objective 4: **Calendar User Interface**: The calendar will act as an interface for the user to easily view upcoming tasks/deadlines. They will have a variety of ways to filter/interact with the calendar such as:

Filter/search calendar view by categories (Course Name)

Manually add events to calendar

Delete events from calendar

Objective 5: **Reminder and Notification**: This system will be used to set reminders on/off and send relevant notifications to the users. Notifications will be sent based on the closest deadline and task to complete. Users can get three types of notification:

App Notification (Push Notification)

Email Notification (On Account Email)

Message Notification (On Phone Number)

Objective 6: **Search**: System will search from the calendar and display the schedule based on following filter:

Search by day

Search by date {MM/DD/YYYY}

Search by course {Course Name, Number}

Objective 7: To Do List: System will allow the user to create and update to-do-list manually. The users will be required to enter details like:

Date

Task to be complete with details and time.

They can also view the to do list and update their progress by marking things as done.

Objective 8: Automated Help Chatbot: System will automatically reply to the user's message based on:

Keywords in Question

Frequently Asked Questions (FAQs)

2.2 SYSTEM OBJECTIVES

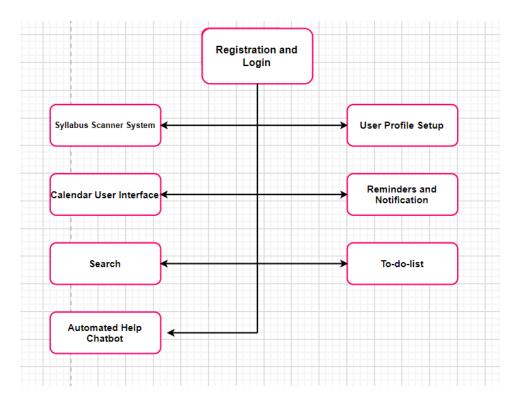
The following is a list of system objectives:

Objective 1: System will be an android application for mobile platform

Objective 2: Firebase will be used for authentication and as the database

Objective 3: Android API will be used

3. Project Context Diagram



4. Systems Requirements

4.1 "LOGIN AND REGISTRATION" REQUIREMENTS

Requirement Title:	Login and Registration	
Sequence No:	001	
Short description:	Registering a new account	
Description:	New users must register before accessing the application. The	
	user will then be asked to input the following information:	
	- First Name	
	- Middle Name (Optional)	
	- Last Name	
	- Email Address	
	- Phone Number	
	- University (Optional)	
	- Classification (Optional)	
	- Username	
	- Password	
	- Select a security question/answer (to be used for	
	password forgot/reset)	
	Username Requirements include:	
	Minimum of 5 characters	
	– Must start with a letter	
	Password Requirements include:	
	Minimum of 10 characters	
	 Must include uppercase and lowercase letters 	
	 Must include one symbol 	
	Must include one number	
	Once done inputting, user can press:	
	– Submit	
	- Cancel	
	– Exit	
Pre-Conditions:	Application must be loaded	
	 Duplicate Registration is not allowed 	
Post Conditions:	 Saved changes will be kept 	
Other attributes:	- None	

Requirement Title:	Login and Registration
Sequence No:	002

Short description:	Login Existing User	
Description:	Enter Username and Password (already established during Registration) and Submit User can press: - Submit - Forgot Username or Password - Cancel (i.e. discard changes) - Exit screen (or close)	
Pre-Conditions:	 User must have already registered for an account 	
Post Conditions:	 Keep a log of the date and time of login 	
Other attributes:	- Allow a maximum of three tries, then recommend using "Forgot Password"	

Requirement Title:	Forgot Password	
Sequence No:	003	
Short description:	Login Existing User	
Description:	 Ask user for the Answer to the "Security Question" entered during the "Registration" phase, i.e. see 001 above. Also ask for e-mail address. If both e-mail and security answer is correct, reset the password and e-mail the temporary password via e-mail. User can press: -Submit -Cancel (i.e. discard changes) -Exit screen (or close) 	
Pre-Conditions:	User must have already registered for an account	
	 Validate e-mail and security question 	
Post Conditions:	Recommend use to change their temporary password	
	after accessing the system	
Other attributes:	 Exit System after three tries 	

4.2 "USER PROFILE SETUP" REQUIREMENTS

Requirement Title:	User Profile Setup	
Sequence No:	001	
Short description:	Edit/Update existing account information	
Description:	Users must have already registered and log-in to edit their account information. The following information may be updated: - Password - University/classification User can press: - Settings - Update Image - Edit Profile - Save Changes - Cancel (i.e. discard changes) - Exit screen (or close)	
Pre-Conditions :	Application must be loaded alreadyUser must be logged in to account they want to edit	
Post Conditions:	- All "Saved" changes will be kept permanently or until edited again.	
Other attributes:	- None	

4.3 "SYLLABUS SCANNER SYSTEM" REQUIREMENTS

Requirement Title:	Syllabus Scanner System
Sequence No:	001
Short description:	Upload of Syllabus Information
Description:	Once scanner window opens, it will ask the user can press one of three options - Manual upload of syllabus - Auto-scan and upload of syllabus - Exit screen (close scanner and return to app home) If the user choses to manual upload option, user will add syllabus information independently. However, if the user chooses to do the auto upload option, a scanner user interface asking the user to upload a pdf of their class syllabus. Once the syllabus is received, the scanner will parse through the syllabus looking for information. For both upload options the target information to be looked for includes: - Information about Class name, time, location - Information about Assignment name and due date - Information about Exam name and date All information gathered will be put into a previewed list that needs to be checked and verified.
Pre-Conditions :	- For the Auto Upload option, the file must be in PDF format
	- User must be logged into application
Post Conditions:	Preview list of all information will need to be verified
Other attributes:	- None

Requirement Title:	Syllabus Scanner System	
Sequence No:	002	
Short description:	Confirmation and Editing of Uploaded Syllabus Information	

Description:	Once information has been gathered, user will have the chance to review all information in a preview list. When reviewing the list, the user can press one of four options - Edit Information - Yes, all information is accurate. Upload to Calendar - Re-scan syllabus file - Exit screen (close scanner and return to app home) If user chooses to Edit, they can review the preview list of information items and can press of three options - Add item to list - Remove item from list - Edit item from list If user choses Yes, all information is correct, they will be asked to check if everything entered is correct. If they press Yes again, the system will use the gathered information to create events in the Calendar User Interface, and the user will exit the scanner system. If No, then they will return to review screen for the information item list. If the user chooses Rescan, then they will be asked whether they want to rescan the pdf file or manual input syllabus file information (refer to 001).
Pre-Conditions :	 User information for syllabus must have already been gathered. User must be logged into application
Post Conditions:	Calendar will be updated with new events gathered from the syllabus
Other attributes:	- None

4.4 "CALENDAR USER INTERFACE" REQUIREMENTS

Requirement Title:	Calendar User Interface	
Sequence No:	001	
Short description:	View deadlines/events on calendar	
Description:	The calendar will display the events/deadlines captured from the schedule the user uploaded. The calendar view may be adjusted by: - Week - Month (default view) - Year In the monthly view, the user can filter events displayed on the calendar by course number. User can press: - Previous Month - Next Month - Create	
Pre-Conditions :	 User must be logged in to an existing account. System should be able to access time zone of user. To filter, there must already be events on the calendar. 	
Post Conditions: Other attributes:	Events displayed on calendar will vary by view/filter.None	

Requirement Title:	Calendar User Interface
Sequence No:	002
Short description:	Manually add, edit and delete an event to calendar

Description:	Existing users can create an event to add to the calendar. The
•	following event/deadline information will be saved:
	Adding an Event:
	- Title
	- Date/time
	- Description
	Adding a deadline:
	- Title
	- Course Number
	- Date/time
	- Description
	User can press:
	- Create
	- Delete
	- Save
	- Cancel
Pre-Conditions :	- User must be logged in to an existing account.
Post Conditions:	- All added events/deadlines will be displayed on
	calendar.
	- System should be able to access time zone of user.
	- All changes will be permanently saved.
Other attributes:	- None

4.5 "REMINDERS AND NOTIFICATION" REQUIREMENTS

Requirement Title:	Reminders and Notification
Sequence No:	001
Short description:	Set Reminder and Notification
Description:	Existing users can set reminders on and off in this section. When user sets reminders on, they are accepting to receive notification. Users can get three types of notification which are as follows: - App Notification (Push Notification) - Email Notification (On Account email) - Message Notification (On Phone Number) Notification will be based on the closest deadline and task to complete. User can press: - Toggle Reminder On

	- Toggle Reminder Off
	- Back
	- Exit screen (or close)
Pre-Conditions :	 Application must be loaded already
	- There must at least one deadline/task coming up
	- User must be logged in
Post Conditions:	 When reminder is on, relevant notification will be sent
	to users.
Other attributes:	None

Requirement Title:	Reminders and Notification
Sequence No:	002
Short description:	Choose type of notifications and time
Description:	Once the reminder is set on users can manually choose the types of notifications s/he wants to receive. Types of notifications are as follows. - App Notification (Push Notification) - Email Notification (On Account email) - Message Notification (On Phone Number) Likewise, the user can also set how many days prior and how frequent they want to be notified User can press: - Set Notification Type - Set parameters for Notification (how many days prior) - Exit screen (or close)
Pre-Conditions :	 Application must be loaded already There must at least one deadline/task coming up User must be logged in
	- The reminder must be on.
Post Conditions:	- None
Other attributes:	- None

4.6 "SEARCH" REQUIREMENTS

Requirement Title:	Search
Sequence No:	001
Short description:	Search by Day/Date/Course
Description:	User can search for event(s) from the calendar based on following filter: - Day {Manually enter or search from the drop-down menu} - Date {Manually enter in the format MM/DD/YYYY or select from displayed calendar} - Course {Manually enter in the format {Course Name, Number} or select from the courses displayed in the calendar} User can press: - Display result - Cancel (i.e. discard changes) - Exit screen (or close)
Pre-Conditions :	- Scanner System must have captured the schedule pdf.
Post Conditions:	 Keep a log of day, date, or courses searched for future reference.
Other attributes:	- None

Requirement Title:	Search
Sequence No:	002
Short description:	Display Result Schedule
Description:	Display the schedule based on search filter (already established during search) User can press: - Display Schedule - Back (Go back to change search filters) - Exit screen (or close)

Pre-Conditions :	- User must have entered/selected search filters and hit
	"Display Schedule".
Post Conditions:	- Schedule is displayed on calendar.
Other attributes:	- None

4.7 "To Do LIST" REQUIREMENTS

Requirement Title:	To Do List
Sequence No:	001
Short description:	Display operations
Description:	- Existing users can go to the To Do List section to manually create and check the To Do List for a particular day. The users will be prompted to choose options (buttons) for the action (check/create to do list)
	User can press: - Edit Tasks - Create To Do List - Back - Exit screen (or close)
Pre-Conditions:	 Application must be loaded already Users must be in To Do List section User must be logged in
Post Conditions:	- Based on users' response, the relevant interface will be loaded
Other attributes:	- None

Requirement Title:	To Do List
Sequence No:	002
_	
Short description:	Create To Do List
Description:	When user chooses 'Create To Do List' option, application
	will allow the user to make to do list for a particular day. The
	users will enter details like:
	 Date for To Do List
	 Things to Do along with details and time

	After user is finished adding all 'Things to do' User can press: - Save - Back - Exit screen (or close)
Pre-Conditions :	- Application must be loaded already
	- Users must Create To Do List option
	- User must be logged in
Post Conditions:	- The database will save the recently created to-do-list
	with a unique ID.
Other attributes:	- Issue a warning if there is already an existing To Do List with similar details.

Requirement Title:	To Do List
Sequence No:	003
Short description:	Check To Do List
Description:	When user chooses 'Check To Do List' option, application will allow the user to view/update the existing to-do lists. The users can choose the to do list by date. Two options will be displayed once user decides on a particular to do list - Display (Simply displays all Things to do and their state in the list and allows users to go back) - Update (Refer to Sequence 004) User can press: - Display - Update - Back
	- Back - Exit screen (or close)
Pre-Conditions :	 Application must be loaded already Users must have pressed the Check to Do List option There must at least one existing to do list User must be logged in
Post Conditions:	Based on users' response (display or Update), the relevant interface will be loaded

Other attributes:	- Toast Message if any to do list does not exist.
	- Toast Message if the searched to do list is not found

Requirement Title:	To Do List
Sequence No:	004
Short description:	Update
Description:	When user chooses 'Update' option, application will allow the user to change the state of things to do in the list. S/he can mark the task as done by clicking on checkbox. User can mark or unmark the check box. User can press: - Save - Back - Exit screen (or close)
Pre-Conditions: Post Conditions:	 Application must be loaded already Users must choose Update option There must at least one existing to do list User must be logged in Recently updated to-do-list will also be updated in the to do list.
Other attributes:	- Issue a final confirmation that the user wants to make this change to the to do list.

4.8 "AUTOMATED HELP CHATBOT" REQUIREMENTS

Requirement Title:	Automated Help Chatbot			
Sequence No:	001			
Short description:	Send Message			
Description:	User can send message or ask help for anything related to the application. User can open chatbot and type the message. User can press: - Send message - Cancel (i.e. discard changes) - Exit			
Pre-Conditions :	Application must be loaded already.Chatbot should be opened.			
Post Conditions:	- Chatbot will send an automated reply.			
Other attributes:	- None			

Requirement Title:	Automated Help Chatbot
Sequence No:	002
Short description:	Get automated reply
Description:	User will get automated reply to the questions they ask based on keywords in message to search. User can: - Type message again - Press Send message - Press Cancel (i.e. discard changes) - Exit

Pre-Conditions :	- Application must be loaded already.
	- Chatbot should be open.
	- All the automated message should be already uploaded
	to the system.
Post Conditions:	 Recommend using keywords in message to search.
	 Chatbot will send an automated reply.
Other attributes:	- If the chatbot could not help, it will redirect the user to
	customer support section. (email)

5. Software Processes and UML Diagrams

5.1 HARDWARE AND INFRASTRUCTURE

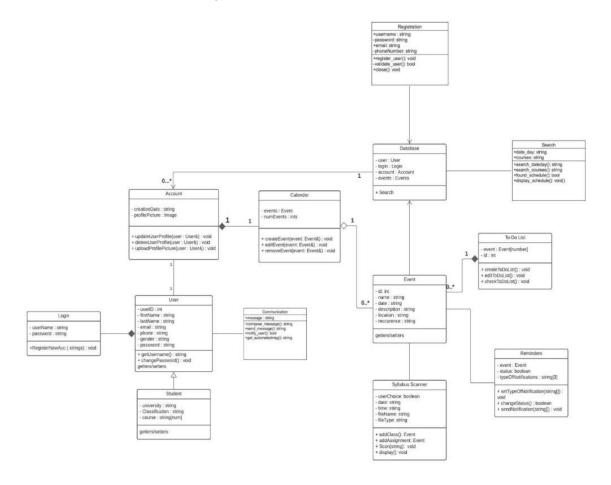
The user must have fully functioning android smartphone.

Application is supported for Android KitKat up to Android Red Velvet Cake.

5.2 UML DIAGRAMS

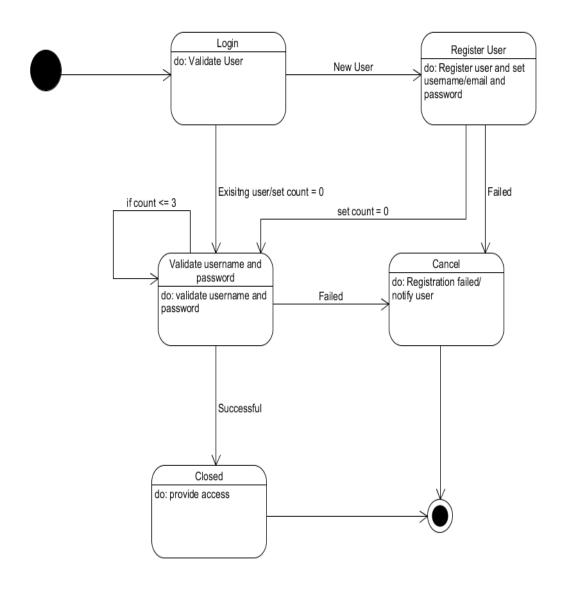
UML DIAGRAM: EDUTRAK SYSTEM (WHOLE SYSTEM)

UML Diagram Type: Class Diagram



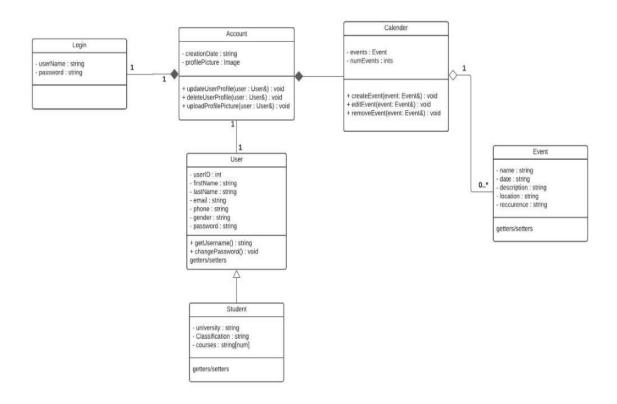
UML DIAGRAM: "REGISTRATION AND LOGIN"

UML Diagram Type: State Diagram



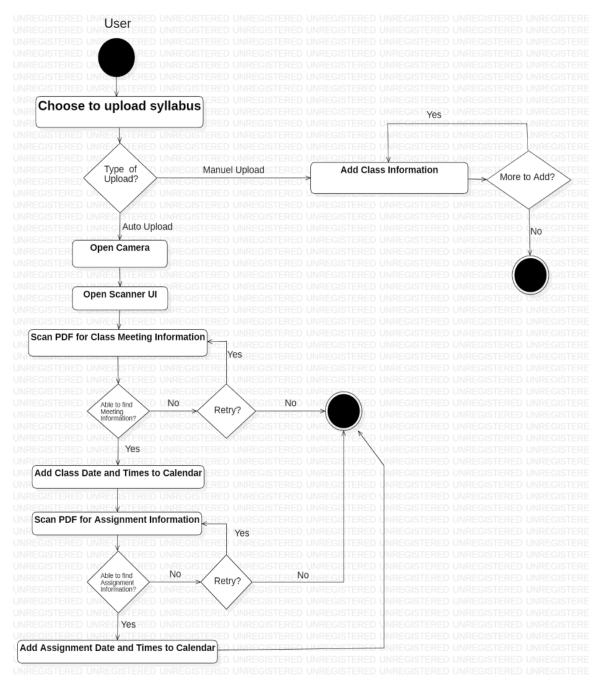
UML DIAGRAM: "USER PROFILE SETUP"

UML Diagram Type: Class Diagram



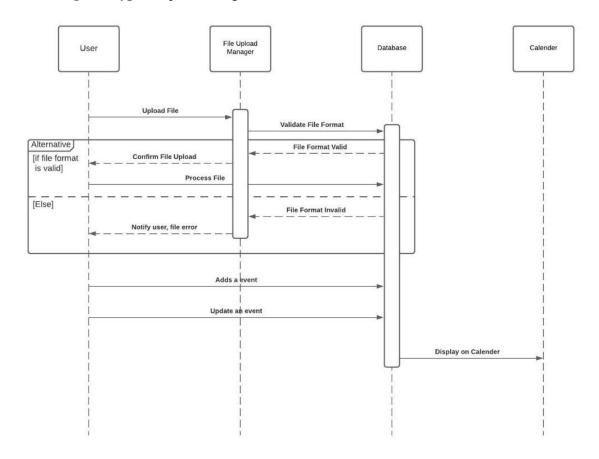
UML DIAGRAM: "SYLLABUS SCANNER SYSTEM"

UML Diagram Type: Activity Diagram



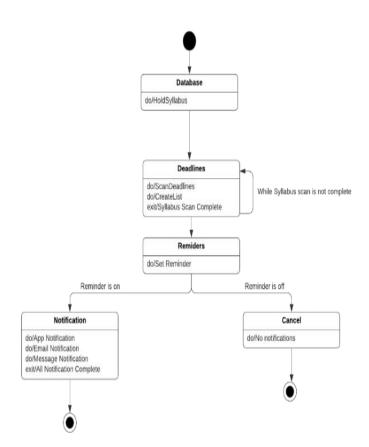
UML DIAGRAM: "CALENDAR USER INTERFACE"

UML Diagram Type: Sequence Diagram



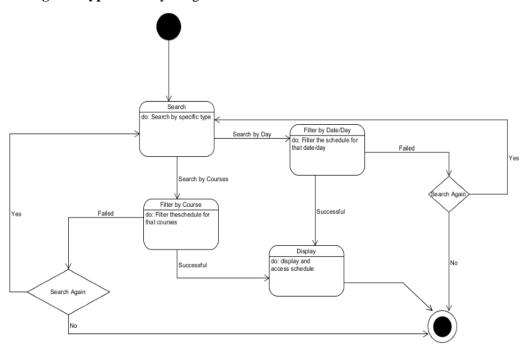
UML DIAGRAM: "REMINDERS AND NOTIFICATIONS"

UML Diagram Type: State Diagram



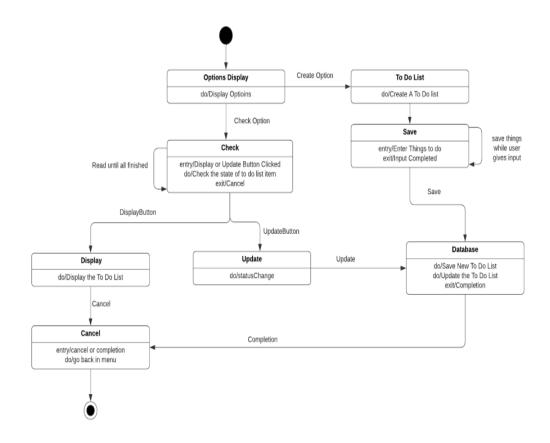
UML DIAGRAM: "SEARCH"

UML Diagram Type: Activity Diagram



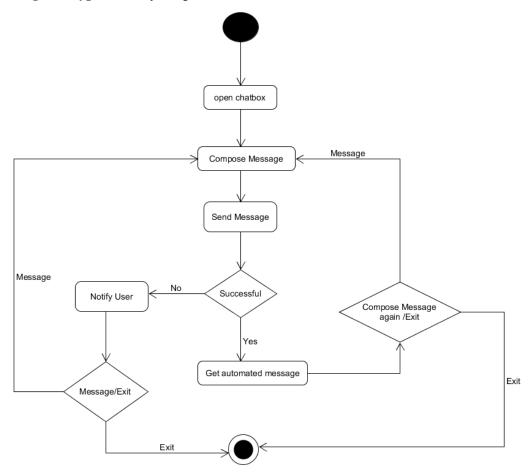
UML DIAGRAM: "TO DO LIST"

UML Diagram Type: State Diagram



UML DIAGRAM: "AUTOMATED HELP CHATBOT"

UML Diagram Type: Activity Diagram



5.3 TEST PLAN

A Test Plan will be provided at a later stage.

5.4 SCREEN SHOTS

No screen shots available at this time.

6. Assumptions and Constraints

6.1 ASSUMPTIONS

The following is a list of assumptions:

- Only people older than 13 can use this product
- Targeted user audience are college-students who are familiar with mobile applications.
- Users' main objective is to manage time and keep track of due dates, exam, lectures and other schoolworks.

6.2 CONSTRAINTS

The following is a list of constraints:

- · Team lacks android development skills
- Team lacks back-end development knowledge/skills
- Time restriction to develop app
- Scheduling conflicts between team members

6.3 OUT OF SCOPE MATERIAL

The following is a list of "out of scope" material:

- Post Project maintenance is not covered
- Use of APIs
- Database and backend development
- App deployment

7. Delivery and Schedule

{List all tasks/milestones from start of the project to the end with specific dates for both Anticipated Start & End Dates

Task/Milestone Description	Anticipated Start Date	Anticipated End Date	Status ("Complete"; "In progress", TBC")	Comments
Prepare UML diagrams	9/14/2020	10/1/2020	Complete	UML diagram delivered
				Increment 1 Deliverable
SRA document (Includes project objectives, Requirements and UML diagrams)	10/2/2020	10/29/2020	Complete	Deliverable will be the SRA document. All stakeholders agree on the content of the SRA by signing in section 8.
				Increment 2 Deliverable
Design: Design big picture, define format, navigation and functionality to include	10/29/2020	11/13/2020	Complete	
Implementation: Home screen design	11/3/2020	11/13/2020	Complete	
Implementation: Database	11/5/2020	11/10/2020	In Progress	SQLite
Implementation: Login and registration	11/5/2020	11/10/2020	Complete	
Implementation: Syllabus Scanner	11/10/2020	11/17/2020	To Be Completed (TBC)	
Implementation: Calendar	11/10/2020	11/17/2020	In Progress	
Implementation: To Do List	11/10/2020	11/17/2020	Complete	Works, but does not show tasks in descending order by date.
Implementation: Search	11/15/2020	11/20/2020	To Be Completed (TBC)	

Implementation:	11/23/2020	11/26/2020	To Be	
Chatbot	11/20/2020	11/20/2020	Completed (TBC)	
Test case design	10/30/2020	11/19/2020	To Be Completed (TBC)	Increment 3 Deliverable
External Documentation (i.e. User Manual)	11/20/2020	12/8/2020	To Be Completed (TBC)	
Project presentation	11/20/2020	12/8/2020	Complete	
Final Milestone: project delivery		12/8/2020	Complete	Increment 4 Deliverable

8. Stakeholder Approval Form

Stakeholder Name	Stakeholder Role	Stakeholder Comments	Stakeholder Approval Signature and Date
Bahram Khalili	Development Mgr		
Akshit Singhal	Project Assistant		
An Nguyen	Developer	Excited to see this project come to life! This app would be very attractive to university students who want to have their schedules in one place.	An Nguyen 10/25/2020
Nathen Paul	Developer	I am super excited to create this app. As a student who has ADHD, it is sometimes hard for me to keep track and manage classes. I am sure that our team develops an app that helps will college students manage the stress associated with school.	Nathen Paul 10/25/2020
Shishir Bishwokarma	Developer	Amid pandemic and online education –the new normal, it has been hard for students like us to keep track of homework, lectures, exam, etc. which is also hampering our progress in the education. We are trying to create an application to solve this issue to some extent. Also, this is going to be the first complete android application made by us, so I am very excited and motivated.	Shishir Bishwokarma 10/26/2020
Yunika Upadhayaya	Developer	I am very happy to work on this app. As someone who finds it very difficult to keep track of all the schoolwork, I am looking forward for this one. I hope this app will be easy and helpful for all the college students like me. Also, this is the first android app that	Yunika Upadhayaya 10/26/2020

	I am developing, so I am super excited.	

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None