

COMP1531

Assignment- Planning PDF



COMP1531 Wed1-4 Team 3-

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0. SUMMARY

This report contains the software engineering design process involved in developing and improving the features of our current project Flockr.

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1.

ELICITATION

Interviewees:

Name	Email	Purpose
Anmol Bhalla	anmolbhalla@gmail.com	Personal/ Interest group
Aryan Panchal	aryan.panchal3@yahoo.com	(Small) business-employee
Charbel Boutrous	charbel_b@gmail.com	(Big) business-manager

Interview:

1. What are your first thoughts using Flockr?

Anmol: This software has a basic interface. Its interface is ordinary but acceptable for a communication software. It is to be noted though that this software has the potential to be further developed.

Aryan: It is a simple application. It has the standard tools which are present in other teamwork collaborative applications. As long as this software is able to operate as intended then its purpose will be fulfilled.

Charbel: This software is only a half-finished product, as a communication software many tools that one can expect are not present. The user interface does not attract users in contrast to other softwares such as Messenger or Flocker. It is difficult for users to remember every command for different functions without the assistance of a menu.

2. How do you find navigating the interface? Do you think the interface is convenient?

Anmol: The process is simple and easy for first time users, it displays the basic functions that users need for their team members such as creating channels and joining any public channels. It allows users to create different channels to meet their needs. Allowing users see the other channels that are available for them.

Aryan: The interface is basic, making it easy to navigate. Its simple appearance ensures that a guide is not required to operate it. While the application's convenience is to be commended, the dim interface makes it unattractive.

Charbel: The navigation bar is not engaging. It is only able to provide the most basic functions to the users such as different messaging channels. With a major flaw being the absence of a tool to directly contact another user. It would be difficult to compare it with existing softwares in the market.

3. Does Flockr support users who have different responsibilities in a team?

Anmol: As a team leader the ability to manage members and messages in the channel is crucial in organising group tasks. The search tool in the channel is useful as It allows to find specific messages which contain vital information in a short amount of time. This significantly improves the productivity of group members.

Aryan: This application doesn't contain all the features that are expected to be there for users who have different responsibilities. For example, If I was a team leader in a group I would want an area where I could assign my team special tasks for them to complete. Also, useful tools like a calendar where the team could manage their deadlines are lacking. However, the capacity to control the channel as an admin is important to the organisation of group projects.

Charbel: Flockr is difficult to use and manage for a large group. The absence of a variety of tools available for different users is its most prominent flaw. As this application only has two roles: a member and an admin. It results in an inability to assign particular tasks to individuals which is a major component of working in a team. Also the absence of a feature to measure the progress of completion like a timetable or calendar causes the management of large group projects problematic to experience in the long term.

4. Does Flockr support collaboration of team tasks in a successful manner?

Anmol: Flockr has all the tools a user needs to collaborate with colleagues. The message tool improves team building experience and it allows everyone to update their progress.

Aryan: Flockr has all the basic tools which are required to communicate with group members. However, it has major limitations in comparison to existing softwares that exists on the market . The texting tool in this application is sufficient for teams but its inadequate features compel team members to use other applications which hold certain features (e.g. calendars).

Charbel: No. The software provides minimal support for team tasks for communication software. It does not help in the team building process in a significant way. The absence of many useful features (e.g. images & video) forces group members to actively use other applications . Also as a manager It would be extremely useful if there was an option to have notifications. This would alert employees on incoming messages ensuring that they are aware of

their team's progress. This would also assure that urgent matters are dealt with instantly. The usage of other applications for different features complicates the communication process and results in an unproductive environment.

5. Do you think Flockr will improve the efficiency of how you would communicate within a team?

Anmol: Yes, it improves the efficiency of communication like any other successful message software. Other additional messaging features could also be considered. For example, GIFS would be a useful way to communicate to other users in a fun and lighthearted manner. Tagging users would also be helpful to communicate directly to a particular user(s).

Aryan: It would improve the efficiency as any messaging application should, the group channel will be useful in giving each member updates on what they are completing. This would also be useful as a lot of our members can work on their part from the comfort of their own home. But again this application has limitations on what It can do. If there were more features it would make our group work more convenient and efficient. But from where it stands, yes this application does improve the group's efficiency as it has 80% of what we need.

Charbel: It improves efficiency like any other message software. However, the lack of direct message function makes it difficult to discuss group member's mistakes/problems in private. Additional features such as games should also be considered, as studies show that games in workplaces is a team building activity which fosters growth and friendship among members.

6. Do you think Flockr will improve the effectiveness of how you would communicate within a team?

Anmol: Yes. Flockr allows users to communicate with each other any time. Any problems occurred in the project can be updated to everyone in the team in real time. The message pin function allows

the urgent /important message to be displayed first, which will improve the effectiveness of the team overall.

Aryan: Yes, the ability to talk in the group channel will fundamentally increase the effectiveness. This alone will solve a lot of the challenges that a group can face in such projects, as text messaging can limit misunderstandings regarding the projects. Also, the ability to seek help and assistance almost immediately make it very effective. It is to note though that the potential of this application to add more rewarding features will make it even a more effective platform. One noticeable feature that is lacking is a tool to direct message other colleagues. This worthy feature is necessary in a group environment as it would be befitting to directly contact another member in private than disturb the group chat.

Charbel: No, there should be more functions for larger groups. For instance, a voice over the internet function and the ability to receive and send files are common practices in teams. Relying on different applications for communication purposes disturbs and confuses group members creating inefficiencies in team projects. The ability to centralise a group's communication is important to managing a group and ensures the streamline the competition of a project. Advanced tools on Flockr need to be considered to ensure that group productivity and morale can be maintained.

7. What is one feature of a communications system that is essential to teamwork?

Anmol: Voice call function is a crucial feature that will improve the teamwork experience further. As voice calls are important in situations where the group is partaking in complex problems. Additionally, sending and receiving files would also be essential as this would cut the need to use emails. This would unify our communication process and simplify our conversations.

Aryan: The messaging channel of course. The ability to have a tool to text immediately is a crucial tool when working in a group chat.

Charbel: The ability to upload and download files from other users in the same channel.

8. Does Flockr have all the tools that are needed for teamwork?

Anmol: Most of the basic tools. Flockr should consider implementing functions such as image editing.

Aryan: It doesn't have all the features that are required for teamwork. However, it has the most essential one which is the available texting platform. But substantial features to the texting platform could be added such as pinning messages and tagging specific members of the group. This would make it easier to ask questions and reply to certain members. Additionally tools such as voice call, video calls and ability to send files through the application are not present. Thereby, other platforms have to be used to ensure clear group communication.

Charbel: No it doesn't. There are many essential tools missing such as the ability to voice call the group, video call the group, give different accesses to different members, to send files and download files and to upload photos to the channel or a particular user.

9. What communications tools would you like to see in Flockr to improve your experience?

Anmol: Allowing users to create public or private voice channels for team conferences. The profile upload picture is very creative but there should be an individual cropping function allowing users to edit their images before uploaded to the channel.

Aryan: As mentioned before, this application can add more features such as a calendar, voice call, video call and the ability to send files through. This would make all the things our group needs in one application, and we won't have to resort to other applications. The addition of such features will improve the effectiveness and efficiency of our work.

Charbel: The task board and the ability to assign many different roles to different members should be the priority implementation.

10. What are functions in Flockr assisting your team the most?

Anmol: The ability to message each other in the channel is a fundamental part of teamwork. The innovative function such as the standup function allows team members to brainstorm different ideas, this allows us to get all opinions from our members in a friendly manner.

Aryan: The group channel through which we can message our members. Additionally, the ability to upload profile pictures to reflect the diversity and distinct personality among the team members is important in showcasing our team.

Charbel: The message sent later function significantly assists our team. It serves as a reminder to the team that a meeting or a progress update will occur. However, a function to handle notifications is essential in reminding everyone there are new messages or new plans for the team in the channel. The private channel create function is also pivotal as this function can be used to create specialised channels. This would be important in communicating with members of different organisational hierarchies.

11. Would you consider Flockr for large (15+ users) and complex projects and why?

Anmol: Yes. Flockr assisted me in my personal interest group project. Its messaging channel is useful in its ability to communicate with all members immediately. This ensures that the group's productivity is constantly high.

Aryan: I wouldn't. It would be very difficult to assign and handle responsibilities in large groups. The limitations of this application that I have mentioned before is the main reason why I won't consider it. When working in large groups I would wish for all

members to use one application as then the collaboration will be effortless . Accordingly, Other competitors will be more suitable for large scale projects as they have an integrated platform of multiple tools.

Charbel: No, I will not use or recommend Flockr to anyone doing a large project. Flockr will need substantial improvement in its features for it to be used effectively. It would be difficult to manage large groups as a leader as an integrated communication platform will be ever so important in a large scale project. Flockr's insufficient features will result in an unproductive team environment which would hinder team performance.

12. What else can the Flockr improve on to have better team communication?

Anmol: Flockr should have more options for its messaging channel such as a message react option. Also to establish a wholesome working environment, games such as hangman should be considered. This will increase the friendly atmosphere between team members and create a calm setting for team members to relax. Flockr should also consider implementing the ability to mute, kick and block to maintain a safe and personal environment for its users.

Aryan: The user interface needs to be updated as it is very dull at the moment. Increasing the features would significantly improve communication so inefficient systems like email's can be decreased in use. Flockr should also consider implementing the GIF emojis. This will allow team members to interact with each other in a more casual manner.

Charbel: For better team communication, Flockr should consider these ideas. The Flockr should display the message status after it is sent. For example, the message should display the time when it was sent, the person who sent the message and who had read the message. Creating the video conference tool will significantly increase the quality of the interactions between members.

2.

ANALYSIS & SPECIFICATION - USE CASES

Analysing the elicitation:

#	Topic	Related Responses (quotes from elicitation)
1	Taskboard	<p>Aryan: If I was a team leader in a group I would want an area where I could assign my team special tasks for them to complete.</p> <p>Charbel: Flockr does not have a task board or calendar.</p>

2	Video/Voice Calls	Charbel: There should also be a video call function. Our scheduled conference has to be held on some other software.
3	Calendar	<p>Aryan: ...small things like a calendar where the team could manage their deadlines would be a useful feature that is missing.</p> <p>Charbel: Flockr does not have a task board or calendar.</p>
4	Messages- sendlater, custom reactions, time sent, seen/ read/ delivered, direct message, tag	<p>Charbel: The lack of a direct message function makes it difficult to discuss group member's mistakes/problems in private.</p> <p>Charbel: The message sent later function significantly assists our team. It serves as a reminder to the team that a meeting or a progress update will occur.</p> <p>Anmol: Tag users would be helpful to communicate directly to particular user(s).</p> <p>Aryan : This worthy feature is necessary in a group environment as it would be befitting to directly contact another member in private than disturb the group chat.</p> <p>Charbel:The Flockr should display the message status after it is sent. For example, the message should display</p>

		<p>the time when it was sent, the person who sent the message, who had read the message.</p> <p>Anmol: Flockr should have more options for message react.</p>
5	User Roles/ Permissions	<p>Charbel: As an admin, I want the ability to give different access to different members so that I can give them different permissions to access different features of the app in the channel.</p> <p>Charbel: The private channel create function also assisted my team, team leaders can use this function to create undisturbed working places for team members.</p>
6	Send and receive files	<p>Charbel: I cannot send or receive files on this software, we have to rely on other software such as emails</p> <p>Anmol: This would cut the need to use emails. This would unify our communication process and simplify our conversations.</p>
7	Notifications, muting notification	<p>Charbel: However, a function to handle notifications is essential in reminding everyone there are new</p>

		<p>messages or new plans for the team in the channel</p> <p>Charbel: This would alert employees on incoming messages ensuring that they are aware of their team's progress. This would also assure that urgent matters are dealt with instantly.</p>
8	Games	<p>Charbel: features such as games should also be considered... games in workplaces is a team building activity which fosters growth and friendship among members.</p> <p>Anmol: It will increase the friendly atmosphere between team members and create a calm setting for team members to relax.</p>
9	GUI for profile pic uploads	<p>Aryan: The ability to upload profile pictures to reflect the diversity and distinct personality among the team members.</p> <p>Anmol: Flockr should consider implementing functions such as image editing.</p> <p>Anmol: The profile upload picture is very creative but there should be an individual cropping function allowing</p>

		users to edit their images before uploaded to the channel.
10	GIFs	<p>Anmol: GIFS would be a useful way to communicate to other users in a fun and lighthearted manner.</p> <p>Aryan: Flockr should also consider implementing the GIF emojis. This allows team members to interact with each other in a more casual manner.</p>

Use Cases:

Use Case 1:

As a user I want to be able to allocate tasks to team members.

- A Kanban Task board will be accessible on an overlay with the ability to add tasks and labels for them.
- The board will be accessible under the second tab when the calendar button is clicked
- There will be a way to create and organise by different views for different aspects of the tasks (labels)
 - The tasks could be organised by progress, assignee etc

Use Case 2:

As a user I want to have both video and voice calls with my team members in the same channel.

- Video and voice call buttons is located next to the channel name
- Video and voice call starts when the user clicks either "Video Call" or "Voice Call"
- Screen should pop out and show members being called and members who have already joined the call
- The user can call all members in the channel

Use Case 3:

As a Team leader, I want a calendar so that the team can manage their deadlines better.

- The board will be accessible under the first tab when the calendar button is clicked
- This calendar will display all of the events that are added
- It will show all days in the current month, and the month in viewing can be changed by the left and right buttons on each side of the calendar
- If the Kanban board exists, it will show the tasks as well

Use Case 4:

As a user, I should be able to send messages at a scheduled message.

- Schedule message button should appear next to the send message button
- Once "Schedule" is clicked by the user, a pop window should appear allowing the user to choose the time their message will be sent

- After the “Send” button is clicked the message should appear in the textbox, but it should be grey-coloured text with time it will be sent appended next to it
- The schedule message option should allow to send files as well as text
- The user cannot send a scheduled message with more than 1000 characters

As a user, I should be able to have more reactions to messages rather than just likes or dislikes.

- An upload reaction button should exist next to the react button
- Once “Upload reaction” is clicked, the user should be able to upload a custom image which will be cropped
- Once the “React” button is clicked, it should show a popup with the available reactions which the user can use to react to a message
- The user can upload a maximum of 10 custom reactions

As a user, I want to be able to see what time messages were sent.

- Under each message, the time and date the message was sent should be displayed
- This field is in a grey-coloured text

As a user, I want to be able to view if my message has been received by other members.

- Under each message, a list of users who have seen/read the message should appear next to the time the messages were sent
- This field is in a grey-coloured text

As a user, I should be able to send a direct message to another user without having to be in the same channel.

- The user can right-click another user and a popup should display a button with the option to send a direct message
- Direct message chat opens once the user clicks "Message user"
- The same functionality of messages in channels should be available for direct messages to another user

As a user, I should be able to tag participants in the same channel.

- The user can send a message which includes another users handle
- The user with the matching handle will always get a push notification alerting them that a message has tagged them
- This handle should appear as a blue-coloured text hyperlink which other users can click
- Once the link has been clicked, it sends the user to that user's profile.

Use Case 5:

As an admin, I want the ability to give different access to different members so that I can give them different permissions to access different features of the app in the channel.

- The 'change permissions' button is located in a drop-down menu when the user clicks 'admin' in the top bar.
- The permission change starts once the user clicks 'change permissions'.
- A fixed pop-up window appears with the title 'Set User Permissions' and the following instructions: 'Select a user below to set permissions for this user' both in grey text.
- Following this is a 'member' selection field, a 'permission' selection field and three buttons:
 - The 'member' field is a drop down menu, containing a list of all Flockr users. A user must be selected in this menu, before a permission can be altered.
 - The 'permission' field contains options for different permissions such as member, owner, and others (unique, created by user) that can be selected (indicated by an empty or filled bubble).
- The three buttons are named: 'new permission', 'cancel' and 'set':
 - If the user wishes to add a new role for a team member with unique permissions to the default (member or owner), then this occurs when they select 'new permission'.
 - If the user wishes to save their changes to permissions, this occurs when they select 'set'. Both the 'member' and 'permission' field must have an option selected before these changes can be set.

- If the user wishes to cancel all changes to permissions, this occurs when they select 'cancel'.
- If the user accesses this feature whilst viewing a channel:
 - These changes will only apply within the channel
 - The user must be an owner of the channel
- If the user access this feature whilst on the homepage:
 - These changes will apply to all channels
 - The user must be an owner of Flockr
- These roles are displayed on the user's profile and next to their names when in a channel (ie. list of members, sending a message)
 - Roles can be given different colours.
 - Members can have multiple roles:
 - There is a linear hierarchy of roles that determines the colour to use if the user has multiple roles

Use Case 6:

As a user I want to be able to send and download files to and from other users respectively.

- The user can drag the file onto the screen and it will show a confirm dialog for uploading that file
- This will generate a link that is posted in the channel that is currently open

Use Case 7:

As a user I want to be able to receive notifications when I have been messaged directly or when someone sends a message in a channel I am participating.

- A overlaid box will show in the top right hand corner
- Multiple notifications can be shown at the same time and they will stack downwards as the newest is added to the top right corner every time
- They can be dismissed by clicking the close button at the top right of the notification

As a user I want to be able to choose which channels will push notifications.

- There will be a bell icon at the top that can be used to toggle notifications for each individual channel
- It will have a line going through the icon to show when it is disabled

Use Case 8:

As a user, I want text-based chat games for entertainment purposes.

- There will be a game of Hangman available

Use Case 9:

As a user, I would like a graphical user interface to be able to upload and change my profile image.

- When the profile image is edited, it will only require a URL now.
- After clicking save, It will open a cropping application with 2 freeform sliders on top of the image. One will be at the top left, and the other will be at the bottom right.
- The user can use this to crop the image in order to highlight themselves in their profile picture
- The cropping application will resolve the coordinates and automatically upload that image url with the coordinates for the cropped image without the user entering the coordinates manually.

Use Case 10:

As a user, I would like my GIFs to play as embedded images in the chat history rather than clicking on the link to view its content.

- The Frontend of the website should detect .gif links and directly embed them into the chat log.
- The gif should automatically play on repeat forever

3.

VALIDATION

Anmol:

One of the features that I had mentioned in my Interview was the ability to send GIFs to my project partners. While the solution that has been described (Use Case 10) is a significant improvement in the fact that image formats can now be sent. It is to be noted that the absence of an in-built function which automatically has hundreds of GIFS available to be sent immediately is a tool that should be considered. Manually having to copy GIF links is a tedious and bygone process that is not reflective of the current time. Competitors such as messenger and discord have this feature which simplifies the ability to send GIFS.

Another few features that were discussed in the interview was updating the message functionality to have a variety of ways to communicate. The improvement to this functionality in the solution (Use Case 4) is a considerable upgrade compared to the existing. The additions of message react and user tags help have quality communication with other group members. Also the ability to personalise your profile by having your profile picture that could be

edited enhances the application and gives users an enjoyable experience.

Creating a positive team atmosphere is important in a group especially when you will be working with others for long periods. The solution to having an in-built game of hangman is worthy for any team. Such an experience will relax group members and will build a friendly vibe within the group.

The addition of new features in the messaging functionality will raise the quality of this application. As the messaging function is the most important for communication, these features will lead to more productive and engaging conversations.

Aryan:

As an employee of a business, It is crucial to be able to manage deadlines and straightforwardly organise tasks at hand. The development of a Taskboard (Use Case 1) will be very helpful in ensuring that employees can know their work obligations. Furthermore, the calendar feature (Use Case 3) complemented with the task board will further enhance the user experience as It will be a worthy planning tool for employees to share. The integration of these two integrated features will make switching between the task board and the calendar simple.

The addition of a variety of functionality (Use Case 4) in the messages channel greatly increases the satisfaction that will be experienced in using this application. The most prominent addition will be the ability to directly message other employees. As an employee for a business, this would make communicating with my colleagues more accessible and private. Also the arrangement to send files (Use Case 6) over the application will significantly centralise the employees communication to Flockr. This would enable us to reduce our time on email and other inefficient applications.

Charbel:

The addition of new functionalities that have been proposed on the basic Flockr will make it into a complete and polished product. As a manager, I have to ensure the productivity of my employees and this means that the systems and processes my team use to communicate have to be of high quality. As I can see the proposal of a task board and calendar (Use Case 1 & 3) will be an invaluable tool to manage teams in a good manner. However I hope that in the development stage that UI design is of high quality as the unattractive and dull nature of the user interface was a constant critique in the interview.

Also the inclusion of message status and details such as time sent, seen and read will be key features that will help with the communication of the team. As these features reduce the misunderstandings that can potentially occur with the ability to pin urgent or important messages act as important reminders within the group channel. Another useful feature that has been included is the ability to video/voice call. This will centralise our communication system as we won't have to rely on other softwares such as Zoom or Microsoft Teams. As a manager, the grant of special permissions as an admin will befitting. This will allow me to create separate channels based on the organisation hierarchies of the company and organise the teams appropriately.

The addition of a notification system will be crucial for employees as urgent matters would need to be resolved. The proposal described (Use Case 7) will be satisfactory in meeting what's required. To improve upon this notification system, It would be useful to have notifications also be pushed to employee's emails particularly when they are of utmost importance. This would be favorable as In workplaces It is common to have IT issues surrounding logging into applications. Receiving emails for such situations will ensure that employees are kept up to date with what's happening in the workplace when such circumstances occur. Also the inclusion of the

hangman game (Use Case 8) will be a notable addition to Flockr, this will be a fun activity that can be used by teams to build team chemistry. However, the game itself would lose its appeal after a few tries. Instead the development of a more engaging game will be better suited to Flockr. As I need to ensure to create an engaging environment for my employees, a point system game in which employees can compete with others will be an improved design. This would ensure that the game on Flockr is a tool that is used regularly rather than a tool that no one uses. It is to be noted that such additions have made me reconsider my position on using this application for large groups. As the expansion of tools on Flockr will make it a convenient application to operate for large groups.

4.

INTERFACE DESIGN

Function name	HTTP Method	Parameters	Return type	Exceptions	Description
message/details	GET	(message_id)	{message_time, message_seen}	InputError when message_id is not a valid message	Given a message id, provide basic details about the

					message
message/uploadreact	POST	(token, url)	{}	<p>Access Error when Authorized user is not a member of the channel</p> <p>InputError when url is not a jpg</p>	Given a URL of an image on the internet, upload the image to the react library
call/video	POST	(token, u_ids, channel_id)	{}	<p>Access Error when Authorized user is not a member of the channel</p> <p>InputError when u_id or</p>	Given a channel_id start a video call with all u_ids in the channel

				channel_id are not valid	
call/voice	POST	(token, u_id, channel_id)	{}	Access Error when Authorised user is not a member of the channel InputError when u_id or channel_id are not valid	Given a channel_id start a voice call with all u_ids in the channel
task/add	POST	(token, task)	{task_id}		Given a task, generate a unique task_id
task/edit	PUT	(token, task_id, task)	{}	InputError when task_id	Given a task_id and task,

				is invalid	modify the the specified task
task/remove	POST	(token, task_id)	{}	InputError when task_id is invalid	Given a task_id, remove that specified task
notification/mutechannel	PUT	(token, channel_id)	{}	InputError when channel_id is invalid	Mute all notifications from the channel matching the given channel_id
notification/muteuser	PUT	(token, u_id)	{}	InputError when u_id is invalid	Mute all notifications from the user matching the given u_id

notification/enableall	POST	(token)	{}	N/A	Unmute all notifications
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NOTE: This is not shown on the table above. An `AccessError` is raised whenever the user's token is invalid.

5.

STATE DIAGRAMS

State Diagram 1: Task Board

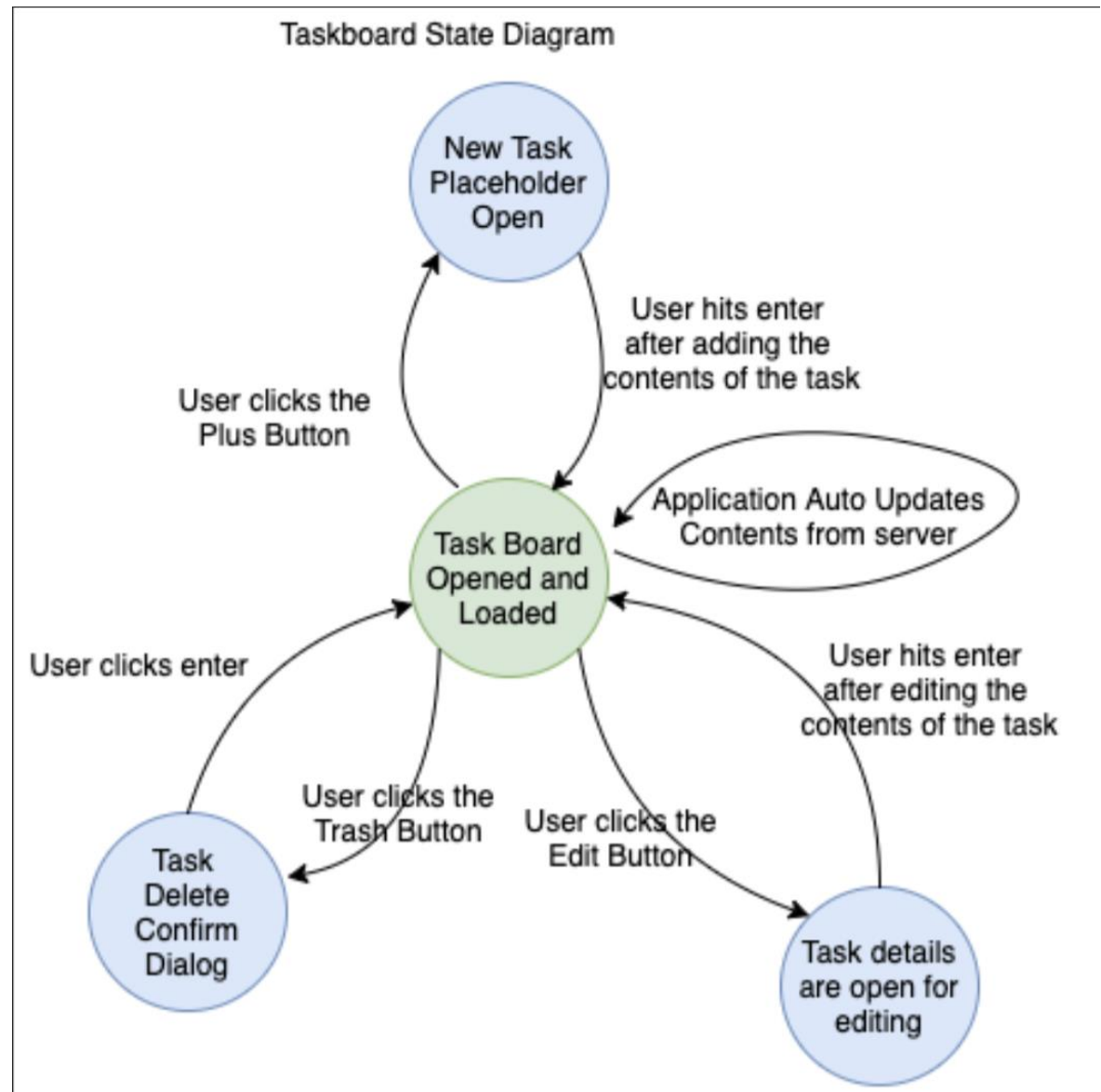


Diagram 2: Image cropping tool

