

# Synchronous

Team 10

## Sprint 1 Planning Document

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# Sprint Overview

During this sprint, our team's main focus is to get the basic workspace working, and provide a shell for each of the planned apps. A basic workspace consists of the ability to add various placeholder apps and for users to join the workspace and see that others are online. Once we have the workspace working, we will then shift our focus to the individual apps and make sure that we can integrate existing apps within the workspace, to see if in later sprints we have to create custom functionality for certain apps.

Scrum Master  
Shreyas Iyengar

Meeting Plan  
Tuesdays/Saturdays @ 6:00pm Eastern

## Risks and Challenges

The biggest challenge in regards to the User stories for this sprint is the fact that all our user stories depend on User Story 1, which is getting the workspace up and running, and making it available as a testing environment to run the rest of the planned apps and functionalities. This means that if we don't get User Story 1 done in time, we won't have enough time to finish the rest of the User Stories. It is important that we get User Story 1 done as soon as we can, as that will set the pace for the rest of the Sprint. Our team is also facing the challenge of new and unknown technology. None of us have worked with any of the technologies and/or APIs that we have chosen to use after much research. We will have to learn as we go, and that will take a lot of time and effort outside of the actual coding process.

## Current Sprint Details

### User Story 1

As a team leader, I would like to be able to create a workspace.

Tasks	Time	Assigned to
Create UI that allows a user to create a workspace	5 Hrs (Total)	Ryan/Shreyas
Create an algorithm to generate a unique ID for the database	2 Hrs (Total)	Saksham/Kevin
Interface with the database to store the workspace information	3 Hrs	Kevin

Connect the database with the UI to allow users to see whether the workspace was created or not	3 Hrs (Total)	Ryan/Shreyas
Test to ensure that a workspace can be created and its information is stored in the database	2 Hrs (Total)	Ryan/Shreyas

#### Acceptance Criteria

- Given that the UI has been created properly, when the user presses the create workspace button, a new workspace should be created.
- Given that workspace creation is implemented correctly, when the user creates a workspace then the user should be redirected to the page where their workspace can be accessed.
- Given that a given workspace creation failed, the user should be shown an error message.

#### User Story 2

As a team leader, I would like to set a workspace's unique ID.

Tasks	Time	Assigned to
Build a UI text field to allow users to enter a unique ID and a button to set the ID	1 Hr (Total)	Ryan/Shreyas
Create algorithm to verify if a given ID has collisions	3 Hrs (Total)	Saksham/Kevin
Connect backend to database to modify a unique ID in the database	3 Hrs (Total)	Saksham/Kevin
Connect backend to UI to show whether the ID change succeeded	2 Hrs (Total)	Saksham/Kevin
Debug and test ID verification algorithm with unit tests	2 Hrs (Total)	Saksham/Kevin

#### Acceptance Criteria

- Given that the UI and the collision verification algorithm has been implemented, when the user enters a duplicate ID, the user should see an error message.
- Given that the UI and the backend are connected and the new ID is not a duplicate, when the user enters a new ID, the user should see that the unique ID has changed.
- Given that a workspace is accessible through its unique ID, when the user changes a workspace's unique ID, the workspace should then be accessible through the new unique ID.

### User Story 3

As a team leader, I would like to be able to password protect my workspace during creation so that unauthorized users cannot access it.

Tasks	Time	Assigned to
Option to create a new password	1 Hr	Saksham
Prompt for password input (if exists)	1 Hr	Saksham
Allow access for correct password	3 Hrs	Kevin
Store passwords in the workspace database table in a secure manner	4 Hrs	Kevin
Send error message for incorrect password and reprompt	1 Hr	Saksham
Option to remove password	1 Hr	Saksham
Manually test that workspaces cannot be accessed without the correct password	2 Hrs	Saksham

### Acceptance Criteria

- Given that a password has been correctly set up, when I join the workspace it should prompt for a password
- Given that a password has been correctly set up, when I input the CORRECT password, I should gain workspace access
- Given that a password has been correctly set up, when I input the INCORRECT password, I should be displayed error message and be prompted
- Given that the password has been removed (or no password), when I try to join the workspace, I should require no authentication

### User Story 4

As a team leader, I would like to optionally let others view my workspace without a password but have editing privileges be password-protected so I can share something for others to see but not edit.

Tasks	Time	Assigned to
Create separate view and edit modes	4 Hrs	Shreyas
Prompt to enter password if necessary	1.5 Hrs	Shreyas

Manually test that workspaces can be viewed but not edited without the correct password	2.5 Hrs	Shreyas
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#### Acceptance Criteria

- Given that a workspace has been created, when the creator is setting permissions there is a view-only option
- Given that a workspace has been created, when a user invites other users they can give them view only options
- Given that a user wants to join a workspace, if they do not have the password they can still view the workspace (if it was set up that way)

#### User Story 5

As a team leader, I would like to have my workspace automatically delete itself after 24 hours.

Tasks	Time	Assigned to
Create a timing mechanism for seeing how long each workspace has been up for	4 Hrs	Saksham
Email user 1 hour before the workspace purges	2.5 Hrs	Saksham
Make sure that the workspace is deleted automatically after 24 hours.	2.5 Hrs	Saksham
Manually check what happens after the time limit expires (Change from 24 hours if necessary)	2 Hrs	Saksham

#### Acceptance Criteria

- Given that a workspace is created, there is a set timer that is created that show, how long the workspace has been up
- Given that a workspace is created, when 24 hours have passed the workspace and its data should be deleted
- Given that that a workspace is created, when there is 1 hour until the purge the user is notified

#### User Story 6

As a team member, I would like to be able to access a workspace through its URL.

Tasks	Time	Assigned to
Create method that auto-generates a url based on workspace name	4 Hrs	Saksham/Kevin

Check if workspace URL is already taken	2 Hrs	Saksham/Kevin
Send proper error message if no workspace exists	2 Hrs	Saksham/Kevin
Test that workspace is accessible through its URL	3 Hrs	Saksham/Kevin

#### Acceptance Criteria

- Given that a user wants to create a workspace, when the workspace is created, a valid URL should be generated
- Given that the workspace URL is already in use, when the new workspace attempts to be generated, an error is thrown
- Given that a workspace URL has been generated, when a user enters a VALID url they are taken to the workspace
- Given that a workspace URL has been generated, when a user enters a INVALID url they should be displayed an error message
- Given that a user is using any browser, when they try to connect, they are able to do so

#### User Story 7

As a team member, I would like to be able to access a workspace by entering its unique ID.

Tasks	Time	Assigned to
Build UI that prompts for workspace ID	2 Hrs	Ryan
Redirect user to respective workspace when ID is inputted	3 Hrs	Ryan
Send error message if no workspace exists	1 Hr	Ryan
Test that workspace is accessible by entering its unique ID	2 Hrs	Ryan

#### Acceptance Criteria

- Given that a user wants to join a workspace, there is a simple UI for them to do so
- Given that a user wants to join a workspace, when they input a VALID workspace they are redirected to respective workspace

- Given that a user wants to join a workspace, when they input a INVALID workspace they are displayed an error message

## User Story 8

As a team member, I would like to be able to send an email out to invite people.

Tasks	Time	Assigned to
Create interface for users to input other users email addresses	2 Hrs	Ryan
Create a mechanism to send automatic emails	2 Hrs	Ryan
Put workspace URL/ID (and password if needed) within email	1 Hr	Ryan
Allow for additional comments to be put in email message	1 Hr	Ryan
Test manually to check if emails go through to users	2 Hrs	Ryan

## Acceptance Criteria

- Given that a user wants to invite another user, there is a UI to input their email addresses
- Given that a user has received an email from Synchronous, when the new user receives it they have the required information to join the workspace
- Given that a user wants to invite another user, when they input the email address they can add additional comments

## User Story 9

As a user, I would like to be able to see who else is online in my workspace.

Tasks	Time	Assigned to
Create a users list in the workspace in the backend	4 Hrs	Kevin
Create a visual layer to show active/inactive users	2 Hrs	Kevin
Create a timestamp that activates after the user goes inactive to show duration of inactivity	2 Hrs	Kevin
Debug and test user list manually	3 Hrs	Kevin

## Acceptance Criteria

- Given that a user has joined the workspace, the user list should add them and be visible

- Given that there is other users in the workspace, when users become active/inactive their names should represent that
- Given that a user has been inactive, a timestamp should be created and the user should be shown as inactive

## User Story 10

As a user, I would like to be able to minimize, rearrange, and resize an app without affecting what other users connected to the workspace see so that I can customize my workspace layout.

Tasks	Time	Assigned to
Create a placeholder app for testing	2 Hrs (Total)	Ryan/Shreyas
Allow users to minimize an app	3 Hrs (Total)	Ryan/Shreyas
Allow users to un-minimize an app	1 Hr (Total)	Ryan/Shreyas
Allow users to drag and move an app	4 Hrs (Total)	Ryan/Shreyas
Allow users to resize an app	3 Hrs (Total)	Ryan/Shreyas
Test to check whether app is resizing, rearranging and minimizing	3 Hrs (Total)	Ryan/Shreyas

## Acceptance Criteria

- Given that a user wants to minimize an app, when they click the “minimize” button then it minimizes the application
- Given that a user wants to un-minimize an app, when they click the “un-minimize” button then it un-minimizes the application
- Given that a user wants to change their workspace, when they click on an app they can drag it to the desired location
- Given that a user wants to change their workspace, when they click on an app they can change the dimensions of it
- Given that a user wants to change their workspace, when they change their workspace, it leaves the other users unaffected

## User Story 11

As a user, I would like to be able to delete an app so that I can discard its contents.

Tasks	Time	Assigned to
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Enable closing of tabs	2 Hrs (Total)	Ryan/Shreyas
Discard all data in the workspace when app windows are closed.	1 Hr (Total)	Ryan/Shreyas
Make sure that other windows automatically resize to fill empty app space and fit the full window.	2 Hr (Total)	Ryan/Shreyas
Make sure that when the user reopens an app, it opens a fresh iteration of the app with the contents discarded.	1.5 Hr (Total)	Ryan/Shreyas
Make sure that the user can close the app in multiple ways (window, right click, keyboard shortcuts etc.)	2 Hrs (Total)	Ryan/Shreyas
Manually create and delete apps for testing	2 Hr (Total)	Ryan/Shreyas

### Acceptance Criteria

- When a user closes an app, the app should have discarded the contents of the app.
- Make sure that the user has multiple ways to close the app window.
- When the app closes, make sure that the other windows automatically resize to fit the empty space left by the closed app.
- When the user decides to reopen the app, make sure it opens a fresh app without any of the previous data.

### User Story 12

As a user, I would like to be able to submit bug fixes and user issues to the developer.

Tasks	Time	Assigned to
Creating a way to access a bug report.	1 Hr	Shreyas
Finding or creating a tool that will allow users to create and submit the bug report.	3 Hrs	Saksham
Store the bug report in an easily accessible database or workspace, where each bug report is stated clearly in a particular format.	3 Hrs	Shreyas

Convert the bug reports into tasks that can be assigned to a team member to investigate and eventually fix.	2 Hrs	Shreyas
Manually send bug reports to test	2 Hrs	Shreyas/Saksham

### Acceptance Criteria

- Users should be able to access and use a Bug Report tool to create a bug report, and be redirected successfully once finished.
- The Bug Report should then be sent and stored into a database successfully.
- The Bug report should follow a specific format for better search and filter for the Dev Team
- The Bug Report should then be pushed to the dev Task Board as a new task for the dev team to take a look at.

## Hours Allocated

Kevin Wu	32.5
Ryan Borzello	34.75
Saksham Jain	32.5
Shreyas Iyengar	33.75
Total	133.5 Hours

## Remaining Backlog

### Functional

- ~~1. As a team leader, I would like to be able to create a workspace.~~
- ~~2. As a team leader, I would like to set a workspace's unique ID.~~
- ~~3. As a team leader, I would like to be able to password protect my workspace during creation so that unauthorized users cannot access it.~~
- ~~4. As a team leader, I would like to optionally let others view my workspace without a password but have editing privileges be password-protected so I can share something for others to see but not edit.~~
- ~~5. As a team leader, I would like to have my workspace automatically delete itself after 24 hours.~~

- ~~6. As a team member, I would like to be able to access a workspace through its URL.~~
- ~~7. As a team member, I would like to be able to access a workspace by entering its unique ID.~~
- ~~8. As a team member, I would like to be able to send an email out to invite people.~~
9. As a user, I would like to be able to change my nickname in my workspace so that other users can see who is making changes.
- ~~10. As a user, I would like to be able to see who else is online in my workspace.~~
11. As a user, I would like to be able to add a text document app to my workspace that synchronizes the text with all other users and shows what text I am selecting to them.
12. As a user, I would like to be able to view and revert to a point in the history of a text document (if time allows).
13. As a user, I would like to be able to create rich text content in a text document app.
14. As a user, I would like to add suggestions to sections of text in a text document app.
15. As a user, I would like to create a text document app by uploading a PDF document, an Office Open XML document (.docx), or a plain text file and be able to edit the document's contents (if time allows).
16. As a user, I would like to be able to download the contents of a text document app as a PDF document, an Office Open XML document (.docx), and a plain text file.
17. As a user, I would like to add objects (Tables, shapes, etc.)
18. As a user, I would like to be able to add a whiteboard app to my workspace that synchronizes all changes on the whiteboard.
19. As a user, I would like to draw on the whiteboard with multiple colors.
20. As a user, I would like to use different marker sizes for drawing on the whiteboard.
21. As a user, I would like to be able to erase strokes on the whiteboard.
22. As a user, I would like to see other people's pointers in a whiteboard app.
23. As a user, I would like to be able to upload an image to the whiteboard app so that I can draw on top of it.
24. As a user, I would like to be able to download the contents of a whiteboard app as a PDF document, a JPG file, or a PNG file.
25. As a user, I would like to be able to add a chat app to my workspace so that I can communicate with other users connected to the workspace.
26. As a user, I would like to be able to add a file sharing app to my workspace so that other users connected to the workspace can download the file I am sharing.
27. As a user, I would like to be able to share any type of file in the workspace.

- ~~28. As a user, I would like to be able to minimize, rearrange, and resize an app without affecting what other users connected to the workspace see so that I can customize my workspace layout.~~
29. As a user, I would like to be able to view what apps are minimized in the workspace in a sidebar so I can reopen them.
- ~~30. As a user, I would like to be able to delete an app so that I can discard its contents.~~
31. As a user, I would like to download the contents of all apps at once (if time allows).
32. As a user, I would like to upload the contents of all apps to recreate a past workspace (if time allows).
33. As a user, I would like to split the workspace into multiple workspaces within the same session.
- ~~34. As a user, I would like to be able to submit bug fixes and user issues to the developer.~~
35. As a new user, I would like to have a tutorial explaining all the features when using the app for the first time.
36. As a user, I would like to be able to edit data in apps if my connection is lost and have my changes be synced when I rejoin the connection.

## Non-functional

### Hosting

1. As a developer, I would like the clients to connect to the database to synchronize changes in the apps in real time.
2. As a user, I would like to be able to create a workspace within 200ms.

### Security

1. As a user, I would like my workspace IDs to be guaranteed to be unique.
2. As a user, I would like to have any communication between the client and the server as well as the client and the database be encrypted.

### Usability

1. As a user, I would like to access Synchronous on any web browser, including browsers on mobile devices.
2. As a user, I would like the user interface to be intuitive/easy to understand.

### Performance

1. As a developer, I would like new updates to the database to be shared to all clients within 500ms.

### Resilience

1. As a developer, I would like each of the server's apps to handle at least 1,000 concurrent connections.
2. As a developer, I would like the main server (serving static files) to handle at least 3,000 concurrent connections.