

# Sprint 3 Planning Document

Team 16 - xpac

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## Sprint Overview

For the third sprint, we plan on implementing versioning of packages and updation of already installed packages. We will also be working on making xpac a more robust and polished product by the end of this sprint. We will also do extensive testing on the client for this sprint and also stress test the server. If time permits, we would also like to add customization features.

**Scrum Master:** Adit Kumar

**Meeting Plan:** Sunday (5:30 pm to 7:30 pm)

**Risks and Challenges:** A significant part of this sprint is involved with even more algorithmic challenges to grapple with, as we need to work with generating differentiating trees in order to support versioning. Also, we would definitely need to work on coming up with algorithms to safely deleting a package without breaking any other packages' dependencies. Finally, testing and making our software robust is going to be an important focus in this sprint. Finally, we need to polish up and refactor all existing code so that xpac performs to the highest expected standard. And finishing up, if time permitting, we would like to add the ability to customize xpac to the users liking.

## Current Sprint Detail

We plan to achieve the following user stories during the course of this sprint:

### User Story #1:

As a user, I would like to ensure that the packages served by xpac are not corrupt or malicious.

#### Task Details:

#	Task Description	Estimated Time	Team	Owner
1	Implement checksum verification of files fetched, utilizing the MD5 algorithm on client-side.	4 hrs	Client	Amol & Parth
2	Implement the hashing functionality for MD5 on server-side.	2 hrs	Server	Amol & Parth

#### Acceptance Criteria:

- The client is able to perform validation on the integrity of file fetched from the server by comparing the hash generated using the MD5 algorithm on client-side to the hash on the server-side.
- The server is able to store the hash in the metadata of the new package being introduced into the universe of packages.

### User Story #2:

As a user I would like xpac to utilize compression and decompression functionalities in order to efficiently manage my packages.

#### Task Details:

#	Task Description	Estimated Time	Team	Owner
1	Set up functions to compress and decompress package bundles employing common compression algorithms.	3 hrs	Server & Client	Amol & Parth

#### Acceptance Criteria:

- The server is able to compress the packages.
- The client is able to decompress this bundled package.

### User Story #3:

As a user, I would like xpac to be able to handle versioning of packages.

#### Task Details:

#	Task Description	Estimated Time	Team	Owner
1	Implement difference trees for newer version of packages	7-8 hrs	Client	Amol & Parth
2	Implement existing graph algorithms to work with branching of existing packages with the aforementioned difference trees.	7-8 hrs	Client	Amol & Parth

#### Acceptance Criteria

➤ The client should be able issue commands to list any updates possible, and to update specific packages, or all packages already installed by xpac.

### User Story #4:

As a user, I would like xpac to be able to remove installed packages.

#### Task Details:

#	Task Description	Estimated Time	Team	Owner
1	Implement deletion of packages installed by xpac, whilst keeping care of not removing any dependencies required by any other packages.	10-15 hrs	Client	Amol & Parth
2	Work with existing dependency tree model to calculate orphaned packages and remove them.	10-15 hrs	Client	Amol & Parth

#### Acceptance Criteria:

➤ The client should be able to delete any package without breaking any existing package dependency, and the user should also be able to issue commands to remove all orphaned packages.

### User Story #5:

As a user, I would like xpac to be a stable and robust piece of software.

#### Task Details:

#	Task Description	Estimated Time	Team	Owner
1	Set up stress testing for server.	7 hrs	Testing	Adit & Anunai
2	Set up unit testing for client.	6 hrs	Testing	Adit & Anunai

#### Acceptance Criteria:

➤ Given that the above user stories are completed, rigorous testing and quality control should be performed on each component of xpac and its functionalities to ensure stability and robustness.

### User Story #6:

As a user, I would like to be able to tweak and customize xpac for a more personalized experience.

#### Task Details:

#	Task Description	Estimated Time	Team	Owner
1	If time permits, implement a xpac config file to tweak user preferences	7 hrs	Client	Amol
2	Polish and refactor all of the implemented features in xpac to guarantee a great user experience	6 hrs	Client	Amol

#### Acceptance Criteria:

➤ The client should be able to state their preferences in the form of a configuration file, and the server should reflect those preferences by changing its state and behavior. Finally, all the features implemented yet in xpac need to be working perfectly with each other in order to ensure xpac performs to the highest expectant standards.

## Remaining Backlog (25/25 Stories Complete)

- ~~1. As a user, I would like to have the ability to connect to the server which hosts repositories.~~
- ~~2. As a user, I would like the server to establish multiple connections with clients, concurrently.~~
- ~~3. As a user, I wish to be able to send and receive files to and from the repository.~~
- ~~4. As a user, I would like xpac to be able to efficiently manage packages.~~
- ~~5. As a user, I would like to have the ability to know the packages hosted by the server.~~
- ~~6. As a user, I would like to have the ability to know the versions available of a particular package.~~
- ~~7. As a user, I would like to have the ability to install composite packages.~~
- ~~8. As a user, I would like to have the ability to list the packages already installed using xpac.~~
- ~~9. As a user, I would like to have the ability to update the software database.~~
- ~~10. As a user, I would like to view if there are any updates available for the packages installed.~~
- ~~11. As a user, I would like to have the ability to update packages.~~
- ~~12. As a user, I would like to have the ability to do a full system wide update.~~
- ~~13. As a user, I would like to have the ability to delete packages.~~
- ~~14. As a user, I would like to have the ability to delete orphans and unneeded packages.~~
- ~~15. As a user, I would like to have the ability to compile from source from packages if needed.~~
- ~~16. As a user, I would like to have the ability to choose between a stable version, or a current bleeding edge version package for installation.~~
- ~~17. As a user, I would like to be able to automate package management using xpac.~~
- ~~18. As a user, I would like to be able to tweak and customize xpac for a more personalized experience.~~
- ~~19. As a user, I would like to have the ability to use xpac to manage packages on different Unix based operating systems.~~
- ~~20. As a user, I would like to have access to proper software documentation, like man pages for xpac.~~
- ~~21. As a user, I would like xpac to have an online presence to be able to connect with the community of contributors and other users.~~
- ~~22. As a user, I would like xpac to have a way to connect to the developers in order to submit valuable feedback and necessary critiques and comments about xpac.~~
- ~~23. As a user, I would like xpac's website to be responsive and elegant.~~
- ~~24. As a user, I would like xpac to be a stable and robust piece of software.~~
- ~~25. As a user, I would like to have xpac to be easy to use.~~