**Advanced Software Engineering**

**Project Proposal**

**Team Code Phoenix**

**Project Mentor - Fujunku Chen**

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**Part 0: Language and platform**

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**Summary**

The aim is to to build a light(fast) command line notes application for taking quick notes and creating to-do lists, events and reminders.

The notes created on this application will be available on other devices as well, and will give the user an option to publish the notes to cloud services of his choice (e.g. Google Drive, OneDrive, Dropbox etc.). If some note has been synced with a cloud service, the application would check if the local store has the latest version and pull the latest version from the cloud service if not. Thus a note can be edited on the cloud using other apps and the changes to the notes will reflect in the app. Further, the events and reminders created in the application can be synced with your calendar (Google Calendar etc).

All the notes would be stored locally on the machine on which the user runs the application so that the user can use the application offline in case an active internet connection is not available. To prevent anyone else from accessing any of the notes created from the application, each note would be first encrypted before actually being stored in a persistent store on the user’s machine. Additionally, the encryption would require a key that would be entered by the user. The user would require the same key to decrypt and read the content. The hash of this key would be stored by the application to a database to prompt to the user in case an incorrect key has been input.

The application would also support document versioning. Upto 10 versions of the notes would be stored and available to the user. The user can choose to go back to an older version if required. The user can also view the difference between any 2 versions of the notes.

Along with the above features, the application would provide some common note-taking application features such spell check which would return all the spelling errors on the note specified by the user. The application would also be able to provide the word and character count for all notes taken using the application. There would also be a feature to provide a shareable link to the note from inside the application.

The user would be able to add tags to the notes that she/he creates. This will allow better organization of the notes and make it easier to search notes by relevant tags assigned to it.

The application is expected to be completely functional on the command line. The application is expected to be quick and easy to launch. It would require low memory and compute power to run.

**User stories and acceptance testing conditions**

Format - "< *label* >: *As a < type of user >, I want < some goal > so that < some reason >. My conditions of satisfaction are < list of common cases and special cases that must work >."*

**MVP User Stories**

1. *As a user, I want a note-taking mechanism that allows me to take notes right in the shell which I am using for development/general use. This avoids the overhead of using a separate application and saves time. Along with notes, I want the app to handle my events, to do lists, reminders, etc. My conditions of satisfaction are -*
   1. *Should have an interface to quickly launch the app and take notes.*
   2. *Should support multiple types of notes (Note, Event etc).*
   3. *Before starting any note, I should be asked to select the type.*

*Acceptance conditions -*

1. *The app starts inside the command line as soon as the launch command is typed.*
2. *An error will be thrown in case user selects invalid type of note.*
3. *If the type of note created is event type, an error is thrown in case of invalid/missing date and time.*
4. *The note is not saved in case the app is closed without actually saving the note.*
5. *Since the notes would be stored locally on my machine as well (for offline use), keeping privacy in mind, I want the app to store my notes in some kind of an encrypted format. My conditions of satisfaction are -*
   1. *Notes should be encrypted with a key of my choice*
   2. *Notes shouldn’t be available to read in any case without a key*
   3. *I should be informed in case the key I entered is incorrect.*

*Acceptance conditions -*

1. *If the correct key is input, only then the content of the notes is visible.*
2. *If an incorrect key is input, an error message alerts the user of key mismatch.*
3. *As a user who takes notes on multiple platforms, the notes which I explicitly select should be available to me on any device through syncing with a cloud service of my choice. My conditions of satisfaction are -* 
   1. *The app should support selective sync to cloud services of my choice(Google Drive, MS OneDrive, etc.)*
   2. *I should have an option to select which notes to sync.*
   3. *The notes that are already synced with some cloud service should sync automatically on updates.*
   4. *Conflicts(for example, if I modify a note directly on the Google Drive and also on my local machine so that sync cannot be performed automatically), if any, should not be resolved automatically, but only after asking me.*

*Acceptance Conditions -*

1. *User is prompted in case of successful sync. An error message is provided to user in case the sync failed.*
2. *In case automatic update fails (network, authentication issue etc.), an error message is provided to the user.*
3. *In case of modifications to the file on the cloud, the note will still not be updated automatically ever.*

*4. As a user, I want a way to sort my notes in an organized way with the help of tags. My conditions of satisfaction are -*

* 1. *I should be able to tag my notes with labels while creating a new note.*
  2. *I should be able to edit the tag attached to a note.*
  3. *Different notes must be properly grouped together in their respective tags.*

*Acceptance conditions -*

1. *The app gives an option to custom tag a note while saving.*
2. *One note can have multiple tags.*
3. *Tags can be removed from a note.*
4. *The app gives an option to retrieve all notes with given tags.*

**Wishlist User Stories**

1. *As a user who will modify the same notes multiple times, I want the app to keep a version history of my notes. My conditions of satisfaction are -*
   1. *Keep versioned copies of the notes*
   2. *It should store upto last 10 versions*
   3. *Versioning should be automatic*
   4. *Should be able to get the difference between two versions of a note*

*Acceptance conditions -*

1. *A versioned copy is created if and only if the new copy differs from the most recent copy.*
2. *As soon as the count reaches 10, the oldest version copy is deleted before storing the new version copy.*
3. *As a general purpose user who will be using this instead of the normal note taking apps , I want the app to have features of the other note taking apps. My conditions of satisfaction are -*
   1. *A spell check command to report spelling errors for my notes*
   2. *Even though it is a command line app, I still want it to have some color(for example - git, vim, etc.)*
   3. *Word count/Character count for my notes.*

*Acceptance conditions -*

1. *The app provides a colored command-line interface.*
2. *For the spell check command, every word that is spelled incorrectly in a note is shown with a recommended spelling of the word.*
3. *The app correctly shows the word count and character count for the notes.*
4. *As someone who would like to share my notes with others, I want there to be a way to be able to do this easily. My conditions of satisfaction are -* 
   1. *I would want a feature for sharing my notes with a link, to be supported in this app, which I should get in my console.*
   2. *Sharing should work only by my explicit choice and shouldn’t be automatic.*

*Acceptance conditions -*

1. *A sharing mechanism is present in the form of shareable links. The link created will allow anyone with the link to access the note (google doc associated with a note).*
2. *The link is generated only if a user goes and selects the note for which the link is to be generated. The same link will be provided each time for the same note.*