Software Requirement Specification

Non-Functional Requirements

CS 345-346

Problem 2 : Classnote Taking Application

Group 18

Name	Roll Number
Param Aryan Singh	180101055
Parth Dhananjay Bakare	180101056
Pooja Gajendra Bhagat	180101057
Tejas Prashant Khairnar	180101081

Contents

1 Introduction

1.1 Purpose

The purpose of the document is to capture the description and the **non-functional requirements** of a class note-taking application, focusing mainly on the needs of college-going students. The document mainly **focuses** on the **usability** part of non-functional requirements which is studied by doing a contextual inquiry.

1.2 Document Conventions

The format specified by **IEEE** was followed while creating this document.
Font Family used was **Computer Modern** and the font size was 12pt. The headings of each topic are in bold. Bullet points are used wherever required.

1.3 Intended Audience and Reading Suggestions

This SRS document is a part of a project under the **CS345** and **CS346** courses - Software Engineering. The intended audience is our course instructor, **Dr. Samit Bhattacharya**, and teaching assistants tasked with evaluating this project. The document acts as a guide to check the project progress at various stages and inspect if the objectives of the project are being met or not. The document also provides a summary of the non-functional requirements to the evaluators.

1.4 Product Scope

Sincerely taking notes during lectures helps a student center and better comprehend the principle ideas being taught by the professor. Note-making is a core value diligently followed by an ideal student, and helps him/her recollect the learnings and reproduce and apply them when needed to.
This application aims to provide a one-stop destination to a student that satisfies his/her needs to take notes digitally. This system eases the process of not only making notes, but also efficiently organising them in a manner best suited to being used by the student as and when needed. When used effectively, the application acts as an extension of the student's mind, recording his/her thought processes and saving them in the form of electronic notes for future use. The student can make notes in various forms provided by the application.

1.5 References

1. IEEE SRS Template
2. CS345 and CS356 course slides by Dr. Samit Bhattacharya. (Winter Semester 2021)

2 Contextual Inquiry

2.1 Planning

We chose to observe three students when they would be attending classes or watching recorded lectures and would be making notes. Our goal was to thoroughly inspect every student's behaviour and then scrutinize our observations to understand their expectations from a note taking application later on. To gather knowledge of this task beforehand, we studied a few well-known note taking applications and looked at their features carefully.
We planned to conduct the contextual inquiry in **Active Mode**. We arranged physical sessions with two of our participants, and a video call with the third one. They were asked to choose the time of the session and the topic they would be making notes on.

2.2 Initiation

We asked three people - Shourya Veer Singh (Param's younger brother), Nikunj Heda (our classmate) and Yash Bhagat (Pooja's elder brother) - for their permission to let us observe them for an hour each so that we could make our observations on how they made their notes while watching live/recorded lectures.
We asked them about their expertise in note making

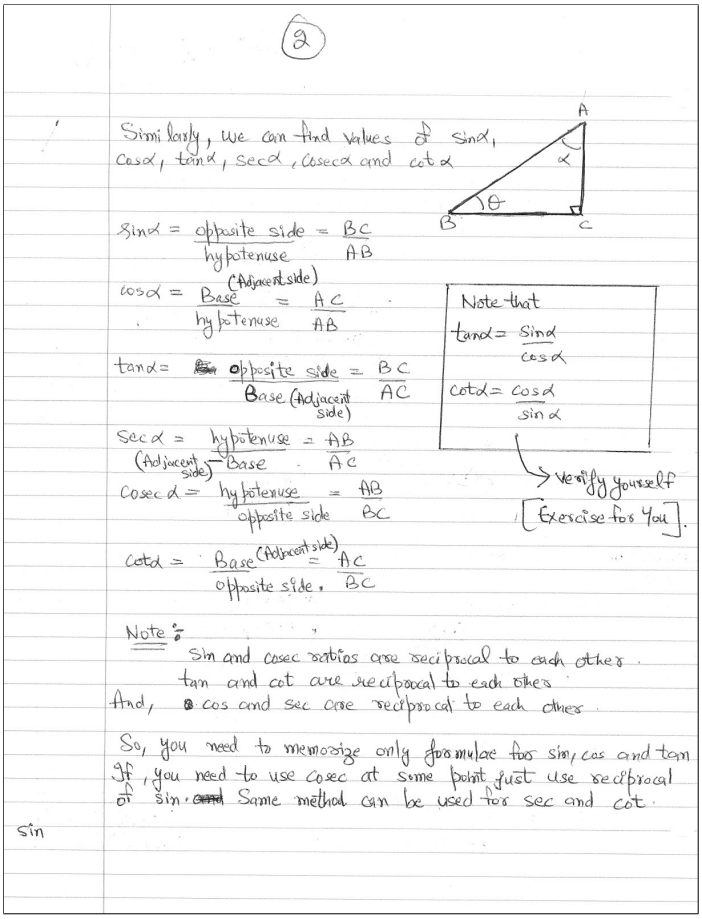
- Shourya is a **beginner** in making notes.
- Nikunj has a **fair experience** in making notes.
- Yash has **lots of experience** in making notes.

2.3 Execution

2.3.1 Shourya Veer Singh

Tool Used : Physical Notes
Topic : Basic Trigonometry

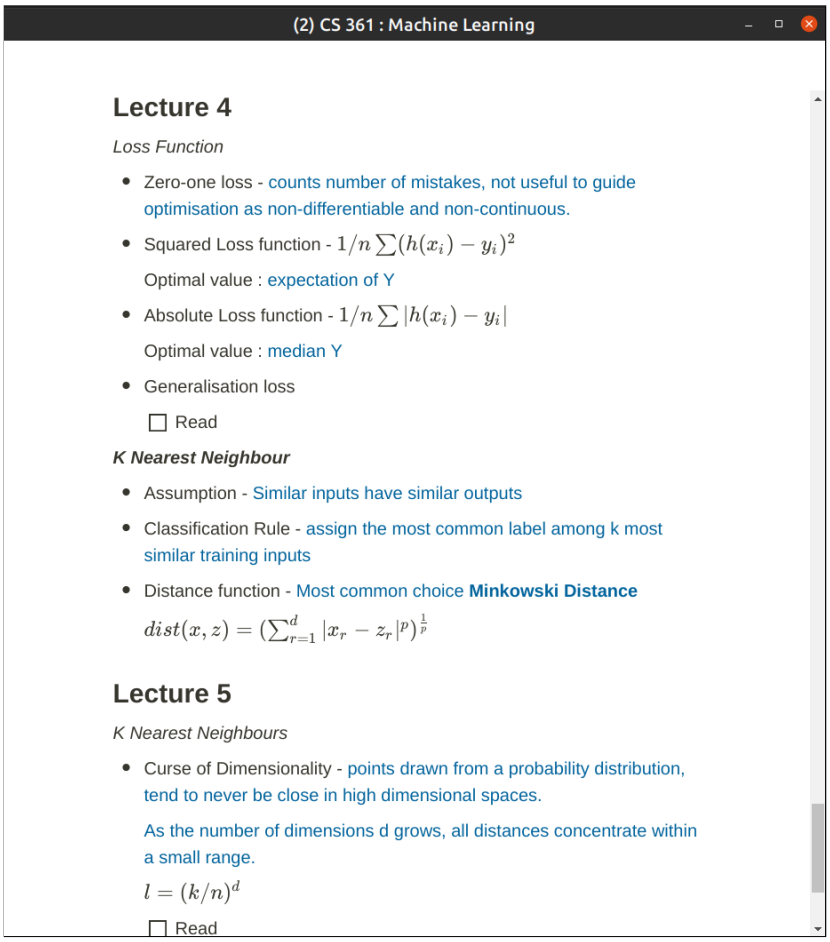
- The subject is a 10th standard student and he was watching live mathematics lectures.
- He wrote down almost everything his teacher said in the class and solved every question that was being discussed step-by-step.
- He struggled to keep pace with his teacher at times.
- He wasn't able to jot down things in a proper format as the teacher kept on moving from one topic to another and he had to write out to rules to keep the content organised.
- While revisiting these notes, he expressed visible frustration while trying to find key sections and other important concepts, mainly because he used a single coloured pen and didn't highlight the key points.
- While studying trigonometry, he had to draw quite a few diagrams and figures, mainly triangles. Most often, he could not pen down figures clearly (to visualise angles and lengths correctly). He drew inaccurate representations of triangles too frequently, and ended up scratching them off, only to use a ruler to make better figures.
- Scratching off incorrect diagrams and wrong calculations badly affected the neatness of his notes.



2.3.2 Nikunj Heda

Tool Used : Notion.so Web Application
Topic : Machine Learning

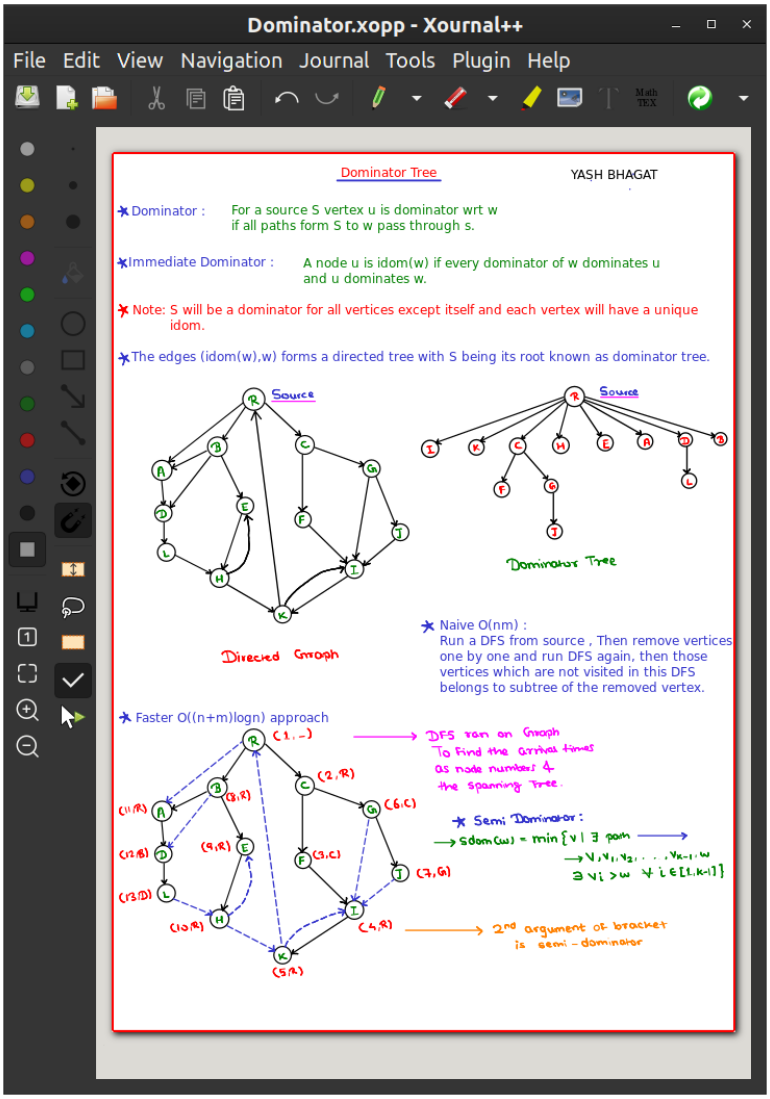
- The subject is a 3rd year B. Tech. student majoring in Computer Science and Engineering, and he was watching recorded lectures (topic: Machine Learning).
- He took his notes mainly in the form of points rather than paragraphs. He divided his notes into various sections, with each section being about a different concept.
- He neatly noted down tables and flowcharts that were in his teacher's slides.
- He initially used digital notes, but drawing tables and flowcharts was quite tricky and time consuming. Eventually, he resorted to physical notes to include graphical content more efficiently.
- He used two colours - blue and black - while making notes. He mostly used black to write the name of the sections and other titles, and blue otherwise.
- When the subject had to revise topics taught previously, he simply jumped to the relevant sections (since he had clearly named every section).
- Due to being unable to navigate properly, he did not use a new page when there was a change of topics. While revising, there were different topics in the same page and closely related topics a few pages apart which caused some hindrance.



2.3.3 Yash Bhagat

Tool Used : xournal++ Desktop Software
Topic : Data Structures and Algorithms

- The subject is a 4th year B. Tech. student majoring in Computer Science and Engineering and he was preparing for his coding interviews.
- He used xournal++ for making his notes and also used a drawing tablet to make diagrams of the graphs in data structures and algorithms.
- He used multiple colours, especially for drawing and labelling the graphs, so that different sections could be distinguished and important information was highlighted.
- The software which he was using also supported typed text along with the manual drawings.
- He was easily able to draw different shapes and arrows with the help of the software.
- Deletion of contents in his notes was pretty handy with the help of the eraser present in the software.
- However, his notes were stored locally and hence he would lose all his notes if god forbid his system crashed someday.



2.4 Closing

We thanked all the subjects for their participation, and told them that we looked forward to future collaborations.

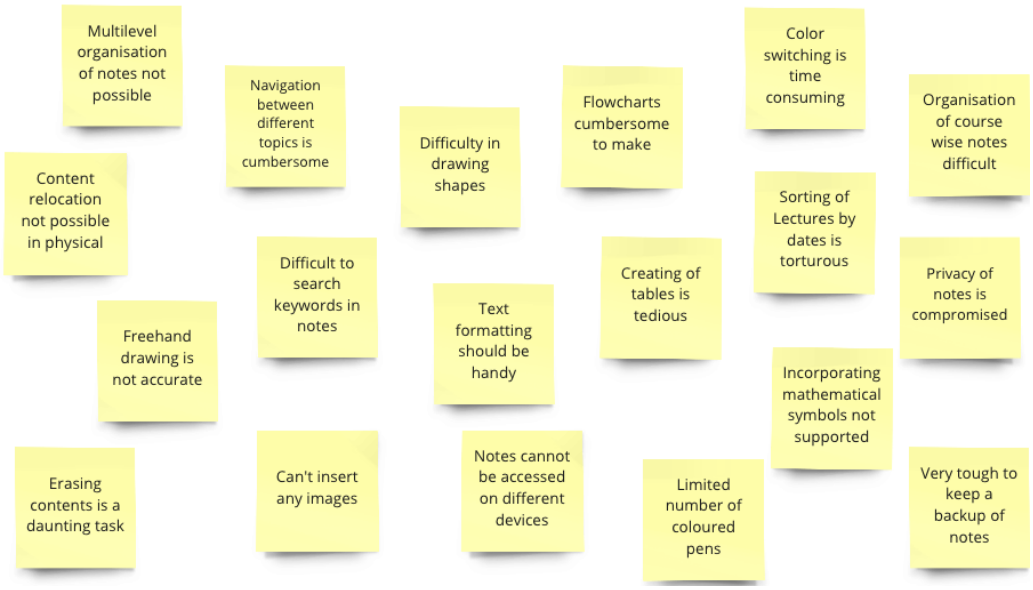
2.5 Reflection

After examining our observations carefully, we came up with the following requirements for a note taking application:

- The application should allow for drawing simple shapes and figures, particularly for making flowcharts and diagrams.
- There should be a feature to create and manage tables easily to note down points in a tabular form.
- For correcting mistakes, there should be a provision to erase content. This would help in keeping the notes neat and tidy.
- To quickly revise topics taught previously, the application should support searching for keywords.
- The user should be free to use multiple colours.
- A note-taking 'expert' would want to have a freehand drawing tool to accurately pen down his/her ideas.
- A proper directory-structure should be present that can be personally customised by the user allowing him/her to store notes of closely connected topics together.
- Searching or sorting notes by the date of the lecture is necessary so that the user can revise topics in the correct order.
- A feature for pasting images is a must. Some users may want to draw diagrams and other graphic content using pen and paper and then add a photo of them in their notes. This would make the application friendly for those who have some difficulty using the draw and table features.
- A proper backup of the notes is necessary for a user so that he/she does not lose his/her hard work.

2.5.1 Affinity Diagram

2.5.1.1 Step 1, 2 : Display Ideas



2.5.1.2 Step 3, 4, 5 : Sort Ideas, Header Cards, Finished Affinity Diagram