**Slide 1:**

Hello Lecturer. It’s my pleasure to be here today to give a presentation on my Algorithms and Data Structure project. In this presentation, I will show you my work, which is a simple text editing application that was inspired by the Notepad application on Windows. So let’s get started.

**Slide 2:**

I will have 4 parts for this presentation: **Introduction**, **Application Analysis** with a Class Diagram, what **Data Structures and Algorithms** that I have utilized for my project, and last but not least, a quick **Demo Session with some conclusions.**

**Slide 3:**

Let’s get going with the first part.

**Slide 4:**

I have 3 main phases in the development procedure of this project:

**+ Research:** I have researched on Google to gather requirements and understandings for a simple text editing application.

**+ Code Implementation:** Next, I implemented the classes, functions for my application.

**+ Testing, Debugging & Completion:** Finally, after I have done the coding, I will test my app, fix the errors to ensure that my app runs smoothly.

**Slide 5:**

I had done my project mostly on Eclipse, and VSCode with the code debugging. Also, Github’s Version Control System feature is used to manage my code versions, track changes, and make it easy to figure out potential problems for the code if exists.

**Slide 6:**

Now, let's look at some of the remarkable features of my application:

**+ File Processing**: The application can create new text documents, open existing ones, and save changes.

**+ Text Formatting**: Users can adjust the font, font size, and color.

**+ Word Wrap**: This feature will make the text fits within the window without horizontal scrolling.

**+ Search/replace words**: Users can search for specific words in the document, or replace them with an another word.

**+ Zoom In/Out**: will allow users to adjust the text view for better readability.

**Slide 7:**

Moving on to the analysis, I will go through the class diagram of my project.

**Slide 8:**

I have 9 main classes for the project, which can be seperated into 3 sections: the Main, the Function, and the GUI.

+ Main: Main class

+ Function: Function\_File class, Function\_View class, Function\_Color class, Function\_Format class, Function\_Edit class.

+ GUI: GUI class, StatusBar class, KeyHandler class.

**Slide 9:**

Next, I will go through about the data structures that I used.

**Slide 10:**

Particularly, in the **searchAndHighlight()**method of my **Function\_View** class, the Queue data structure is used to store the positions (indices) within the text where the searched word is found. When a word is found in the text, its position is added to the queue, allowing the program to process and highlight these positions in the order they were found. The code for this method is as follow:

\*\* code snippet \*\*

- At the beginning of the method, a **Queue<Integer>** called positions is initialized as a LinkedList. This creates an empty queue to store the positions of the searched word.

- As the program searches for the word within the text, it finds the index (position) of each occurrence of the word using the indexOf method.

- If the word is found (index >= 0), its position is added to the positions queue using the add method. This process continues until all occurrences of the word are found.

- After storing all the positions of the searched word, the program proceeds to highlight each occurrence.

- It dequeues (removes) positions from the positions queue using the poll method, which retrieves and removes the head of the queue.

- For each position retrieved, the program uses the highlighter object to add a highlight to the corresponding word in the text area.

- Finally, the program displays a message dialog indicating the total number of occurrences of the searched word.

- If no occurrences are found (count == 0), it informs the user that the word was not found in the text.

The illustrative figures are as follow: \*chuyển sang slide 11 và 12

Now, to give a closer look at my application, I will run my app and perform a quick demo.

\*\*demo\*\*

**Slide 16:**

In short, I successfully developed a simple text editing application that meets the primary objectives. I encountered some difficulties, especially when integrating data structures efficiently, but managed to overcome them through iterative testing and debugging. In the future, I will add more features like syntax highlighting for programming languages or integrating cloud storage options.

**Slide 17:**

That’s the end of my presentation. Thanks for watching!! Wish you have a good day.