Programming in Java

Assignment – 3

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Problem statement:

The problem is to create a simple text editor applet that allows users to create, edit, save and open text files using basic file input/output operations. Additionally, the applet should have functionality to increase or decrease the font size of the text displayed in the editor.

Description:

The application is a Java applet that provides a basic text editor functionality. The applet uses the AWT (Abstract Window Toolkit) library to create a graphical user interface. The applet consists of a text area where the user can input or edit the text, and buttons for opening, saving, and changing the font size of the text.

The application provides four main functions:

1. **Open file:** allows the user to select an existing text file from their computer and open it for editing.
2. **Save file:** allows the user to save the text entered in the text area as a text file on their computer.
3. **Increase font size:** allows the user to increase the font size of the text displayed in the text area.
4. **Decrease font size:** allows the user to decrease the font size of the text displayed in the text area.

Concepts used:

1. **Java applets:** Java applets are small applications that run inside a web browser using a Java Virtual Machine (JVM). They are used to create dynamic and interactive web pages.
2. **AWT:** AWT is a Java library used for creating graphical user interfaces. It provides a set of classes and methods for creating and managing windows, buttons, text areas, and other GUI components.
3. **File I/O:** The applet uses basic file input/output operations to read from and write to text files. This is done using the FileReader, BufferedReader, FileWriter, and other classes from the Java I/O library.

Program Code:

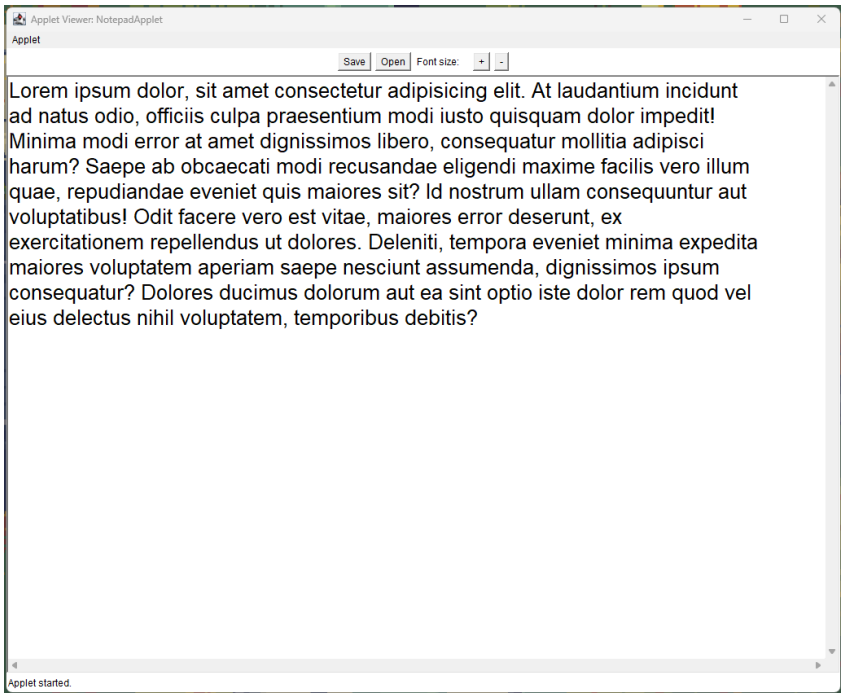
```
import java.applet.Applet;
import java.awt.*;
import java.awt.event.*;
import java.io.*;


/*
 * <Applet code=NotepadApplet width=1024 height=768>
 * </Applet>
 */


public class NotepadApplet extends Applet implements ActionListener {


    private TextArea textArea;
    private Button saveButton;
    private Button openButton;
    private Button increaseButton;
    private Button decreaseButton;


    private File currentFile;


    public void init() {
        this.setLayout(new BorderLayout());
        this.textArea = new TextArea();
        this.saveButton = new Button("Save");
        this.saveButton.addActionListener(this);
        this.openButton = new Button("Open");
        this.openButton.addActionListener(this);
        this.increaseButton = new Button("+");
        this.increaseButton.addActionListener(this);
        this.decreaseButton = new Button("-");
        this.decreaseButton.addActionListener(this);


        Panel buttonPanel = new Panel();
```

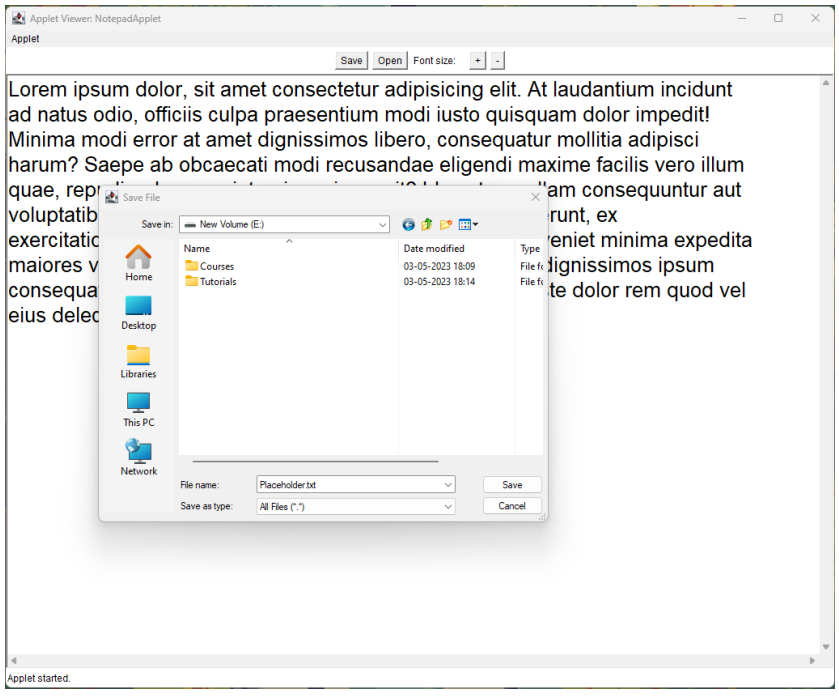
```
        buttonPanel.add(saveButton);
        buttonPanel.add(openButton);
        buttonPanel.add(new Label("Font size:"));
        buttonPanel.add(increaseButton);
        buttonPanel.add(decreaseButton);

        this.add(textArea, BorderLayout.CENTER);
        this.add(buttonPanel, BorderLayout.NORTH);
    }

    public void actionPerformed(ActionEvent e) {
        if (e.getSource() == saveButton) {
            saveFile();
        } else if (e.getSource() == openButton) {
            openFile();
        } else if (e.getSource() == increaseButton) {
            increaseFontSize();
        } else if (e.getSource() == decreaseButton) {
            decreaseFontSize();
        }
    }

    private void saveFile() {
        FileDialog fd = new FileDialog(new Frame(), "Save File", FileDialog.SAVE);
        fd.setVisible(true);

        if (fd.getFile() != null) {
            try {
                FileWriter fw = new FileWriter(fd.getDirectory() + fd.getFile());
                fw.write(textArea.getText());
                fw.close();
                currentFile = new File(fd.getDirectory() + fd.getFile());
            } catch (IOException e) {
                e.printStackTrace();
```

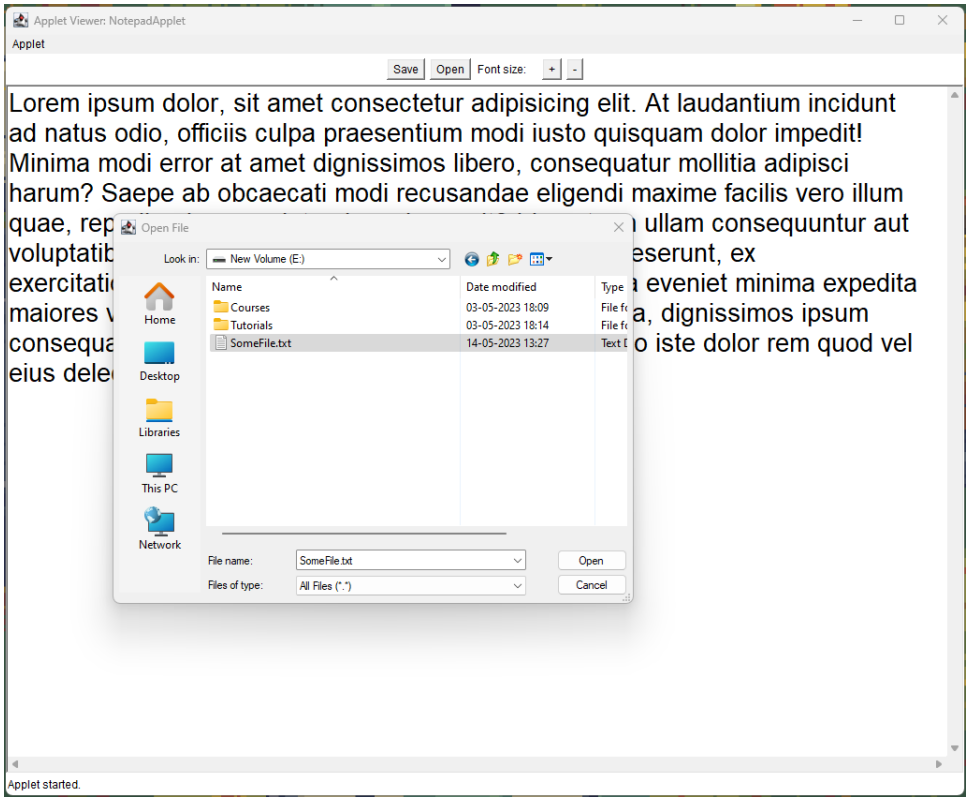
```
            }
        }
    }

    private void openFile() {
        FileDialog fd = new FileDialog(new Frame(), "Open File", FileDialog.LOAD);
        fd.setVisible(true);

        if (fd.getFile() != null) {
            try {
                BufferedReader br = new BufferedReader(new FileReader(fd.getDirectory() +
fd.getFile()));
                String line;
                StringBuilder sb = new StringBuilder();

                while ((line = br.readLine()) != null) {
                    sb.append(line);
                    sb.append("\n");
                }

                br.close();
                textArea.setText(sb.toString());
                currentFile = new File(fd.getDirectory() + fd.getFile());
            } catch (IOException e) {
                e.printStackTrace();
            }
        }
    }

    private void increaseFontSize() {
        Font font = textArea.getFont();
        textArea.setFont(new Font(font.getName(), font.getStyle(), font.getSize() + 1));
    }
```

```
    private void decreaseFontSize() {
        Font font = textArea.getFont();
        textArea.setFont(new Font(font.getName(), font.getStyle(), font.getSize() - 1));
    }
}
```

Screenshots:






Applet Viewer: NotepadApplet
Applet
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Open
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Open File
Look in:
New Volume (E:)
Name
Date modified
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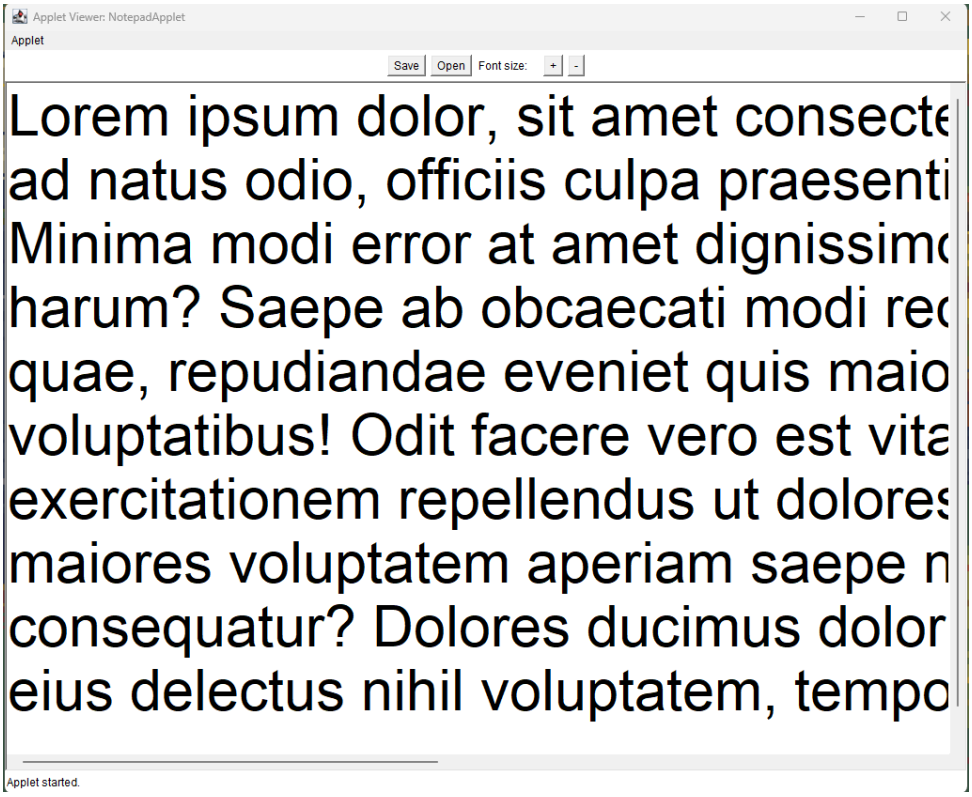
Courses
03-05-2023 18:09
Tutorials
03-05-2023 18:14
SomeFile.txt
14-05-2023 13:27
Home
Desktop
Libraries
This PC
Network
File name:
SomeFile.txt
Open
Files of type:
All Files (*.*)
Cancel
Applet started.


Applet Viewer: NotepadApplet
Applet
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Applet started.