

(Optional) Create a basic notepad app with the following features:

- a) New
- b) Open
- c) Save
- d) Exit

Use JButton components to implement these features.

Create an application with UI similar to the windows notepad app.

Demonstrate the use of Open and Save dialogs for opening and saving files.

Create a simple app with menus. Include a menu item inside the Help menu to show a custom dialog named AboutDialog. The dialog must contain your App name, version and copyright information, along with a working close button (JButton).

#### Program:

For solving the above programs, I simply made a Notepad program with the above mentioned all features. And the questions in which Jbuttons are asked to used I've used jMenu items because the only difference between them is their declaration and their type but adding their action listener is same in both so because of this reason I've used Jmenu.

And for making the program coding the whole program in a single file was a bit tedious so different classes were made with their respective member functions and member data and those class were accessed through the main class.

The different classes that were made were:

Notepad.java – Which is the major class which access the files in the other classes.

FileMenuItems – Contains all the Menu items in File Menu

EditMenuItems – Contains all the Menu items in Edit Menu

FormatMenuItems – Contains all the Menu items in Format Menu

ViewMenuItems – Contains all the Menu items in View Menu

HelpMenuItems – Contains all the Menu item in Help Menu

Now the code contents in each class are:

#### Notepad.java consists of the code:

```
package notepad;
```

```
import java.awt.Color;
import java.awt.GridBagLayout;
import java.awt.GridBagConstraints;
import java.awt.Insets;
import javax.swing.JFrame;
import javax.swing.JMenu;
import javax.swing.JMenuBar;
import javax.swing.JScrollPane;
import javax.swing.JTextArea;
import FileMenuItems.FileMenuItems;
import EditMenuItems.EditMenuItems;
```

```

import FormatMenuItems.FormatMenuItems;
import ViewMenuItems.ViewMenuItems;
import HelpMenuItems.HelpmenuItems;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.io.BufferedReader;
import java.io.File;
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.FileReader;
import java.io.IOException;
import java.io.OutputStreamWriter;
import javax.swing.JFileChooser;
import javax.swing.JOptionPane;
import javax.swing.UIManager;

/**
 *
 * @author Aashi
 */
public class Notepad extends JFrame {

    JTextArea TextArea;
    File file;

    public static void main(String[] args) {
        Notepad app = new Notepad();
        app.setVisible(true);
        app.setTitle("Untitled Notepad");
        app.setBackground(Color.RED);
        app.setSize(500, 500);
    }

    public Notepad() {
        setLayout(new GridBagLayout());
        GridBagConstraints c = new GridBagConstraints();

        c.insets = new Insets(5, 5, 5, 5);
        JMenuBar menuBar = new JMenuBar();

        FileMenuItems FMenuItem = new FileMenuItems();
        EditMenuItems EMenuItem = new EditMenuItems();
        FormatMenuItems FoMenuItem = new FormatMenuItems();
        ViewMenuItems VMenuItem = new ViewMenuItems();
        HelpmenuItems HMenuItem = new HelpmenuItems();

        JMenu FileMenu = new JMenu("File");

```

```

c.gridx = 0;
c.gridy = 0;
c.gridwidth = 3;
c.fill = GridBagConstraints.HORIZONTAL;

FileMenu.add(FMenuItem.NewMenuItem);
FileMenu.add(FMenuItem.NewWindowMenuItem);
FileMenu.add(FMenuItem.OpenMenuItem);
FileMenu.add(FMenuItem.SaveMenuItem);
FileMenu.add(FMenuItem.SaveAsMenuItem);
FileMenu.add(FMenuItem.PageSetupMenuItem);
FileMenu.add(FMenuItem.PrintMenuItem);
FileMenu.add(FMenuItem.ExitMenuItem);

menuBar.add(FileMenu, c);

JMenu EditMenu = new JMenu("Edit");
c.gridx = 3;
c.gridy = 0;
c.gridwidth = 3;

EditMenu.add(EMenuItem.UndoMenuItem);
EditMenu.add(EMenuItem.CopyMenuItem);
EditMenu.add(EMenuItem.CutMenuItem);
EditMenu.add(EMenuItem.PasteMenuItem);
EditMenu.add(EMenuItem.DeleteMenuItem);
EditMenu.add(EMenuItem.SearchMenuItem);
EditMenu.add(EMenuItem.FindMenuItem);
EditMenu.add(EMenuItem.FindNextMenuItem);
EditMenu.add(EMenuItem.FindPreviousMenuItem);
EditMenu.add(EMenuItem.RepalceMenuItem);
EditMenu.add(EMenuItem.GoToMenuItem);
EditMenu.add(EMenuItem.SelectAllMenuItem);
EditMenu.add(EMenuItem.TimeDateMenuItem);

menuBar.add(EditMenu, c);

JMenu FormatMenu = new JMenu("Format");
c.gridx = 6;
c.gridy = 0;
c.gridwidth = 3;

FormatMenu.add(FoMenuItem.WordWrapMenuItem);
FormatMenu.add(FoMenuItem.FontMenuItem);

menuBar.add(FormatMenu, c);

JMenu ViewMenu = new JMenu("View");

```

```

c.gridx = 9;
c.gridy = 0;
c.gridwidth = 3;

ViewMenu.add(VMenuItem.ZoomMenuItem);
ViewMenu.add(VMenuItem.StatusMenuItem);

menuBar.add(ViewMenu, c);

JMenu HelpMenu = new JMenu("Help");
c.gridx = 12;
c.gridy = 0;
c.gridwidth = 3;

HelpMenu.add(HMenuItem.ViewHelpMenuItem);
HelpMenu.add(HMenuItem.SendFeedbackMenuItem);
HelpMenu.add(HMenuItem.AboutNotepadMenuItem);

menuBar.add(HelpMenu, c);

setJMenuBar(menuBar);

TextArea = new JTextArea(500, 500);
TextArea.setEditable(true);
JScrollPane scrollPane = new JScrollPane(TextArea);
c.gridx = 0;
c.gridy = 1;
c.gridwidth = 27;
c.fill = GridBagConstraints.BOTH;
c.weightx = 1;
c.weighty = 1;
add(scrollPane, c);

FMenuItem.NewMenuItem.addActionListener(new ActionListener() {
    @Override
    public void actionPerformed(ActionEvent e) {
        TextArea.setText("");
    }
});

FMenuItem.ExitMenuItem.addActionListener((event) ->
System.exit(0));
FMenuItem.SaveMenuItem.addActionListener(new ActionListener() {
    @Override
    public void actionPerformed(ActionEvent event) {
        saveToFile();
    }
});

```

```

        FMenuItem.OpenMenuItem.addActionListener(new ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {
                try {
                    openFile();
                } catch (IOException ex) {
                    System.out.println("Some Error Occoured");
                }
            }
        });

        HMenuItems.AboutNotepadMenuItem.addActionListener(new
        ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {
                JFrame f = new JFrame();
                JOptionPane.showMessageDialog(f, "Notepad          version
1.0.2\n©Copyright 2020 Aashish Shrestha");

            }
        });

        pack();
        setDefaultCloseOperation(EXIT_ON_CLOSE);

    }

    protected void saveToFile() {
        JFileChooser fileChooser = new JFileChooser();
        int retval = fileChooser.showSaveDialog(null);
        if (retval == JFileChooser.APPROVE_OPTION) {
            File file = fileChooser.getSelectedFile();
            if (file == null) {
                return;
            }
            if (!file.getName().toLowerCase().endsWith(".txt")) {
                file = new File(file.getParentFile(), file.getName() +
".txt");
            }
            try {
                TextArea.write(new                OutputStreamWriter(new
FileOutputStream(file),
                    "utf-8"));
                setTitle(file.getName());
            } catch (Exception e) {
                e.printStackTrace();
            }
        }
    }

```

```

    }
}

protected void openFile() throws FileNotFoundException, IOException
{
    JFileChooser chooser = new JFileChooser();
    int returnVal = chooser.showOpenDialog(null); //replace null
with your swing container
    File file = null;
    if (returnVal == JFileChooser.APPROVE_OPTION) {
        file = chooser.getSelectedFile();
    }
    BufferedReader in = new BufferedReader(new FileReader(file));
    setTitle(file.getName());
    String line = in.readLine();
    while (line != null) {
        TextArea.append(line + "\n");
        line = in.readLine();
    }
}
}
}

```

**FileMenuItems consists of the code:**

```

package FileMenuItems;

import javax.swing.JMenuItem;

public class FileMenuItems {

    public JMenuItem NewMenuItem = new JMenuItem("New");
    public JMenuItem NewWindowMenuItem = new JMenuItem("New window");
    public JMenuItem OpenMenuItem = new JMenuItem("Open...");
    public JMenuItem SaveMenuItem = new JMenuItem("Save");
    public JMenuItem SaveAsMenuItem = new JMenuItem("Save As");
    public JMenuItem PageSetupMenuItem = new JMenuItem("Page Setup");
    public JMenuItem PrintMenuItem = new JMenuItem("Print");
    public JMenuItem ExitMenuItem = new JMenuItem("Exit");

}

```

**EditMenuItems consists of the code:**

```

package EditMenuItems;

import javax.swing.JMenuItem;

```

```

/**
 *
 * @author Aashi
 */
public class EditMenuItems {

    public JMenuItem UndoMenuItem = new JMenuItem("Undo");
    public JMenuItem CutMenuItem = new JMenuItem("Cut");
    public JMenuItem CopyMenuItem = new JMenuItem("Copy");
    public JMenuItem PasteMenuItem = new JMenuItem("Paste");
    public JMenuItem DeleteMenuItem = new JMenuItem("Delete");
    public JMenuItem SearchMenuItem = new JMenuItem("Search with
Bing...");
    public JMenuItem FindMenuItem = new JMenuItem("Find");
    public JMenuItem FindNextMenuItem = new JMenuItem("Find Next");
    public JMenuItem FindPreviousMenuItem = new JMenuItem("Find
Previous");
    public JMenuItem RepalceMenuItem = new JMenuItem("Replace");
    public JMenuItem GoToMenuItem = new JMenuItem("GoTo");
    public JMenuItem SelectAllMenuItem = new JMenuItem("Select All");
    public JMenuItem TimeDateMenuItem = new JMenuItem("Time/Date");
}

```

**FormatMenuItems contains of the code:**

```

package FormatMenuItems;

import javax.swing.JMenuItem;

/**
 *
 * @author Aashi
 */
public class FormatMenuItems {
    public JMenuItem WordWrapMenuItem = new JMenuItem("WordWrap");
    public JMenuItem FontMenuItem = new JMenuItem("Font");
}

```

**HelpMenuItems contains of the code:**

```

package HelpMenuItems;

import javax.swing.JMenuItem;

/**
 *
 * @author Aashi
 */
public class HelpmenuItems {
    public JMenuItem ViewHelpMenuItem = new JMenuItem("View Help");
    public JMenuItem SendFeedbackMenuItem = new JMenuItem("Send
Feedback");
}

```

```
        public JMenuItem AboutNotepadMenuItem = new JMenuItem("About  
Notepad");  
    }
```

ViewMenuItems consists of the code:

```
package ViewMenuItems;
```

```
import javax.swing.JMenuItem;
```

```
/**
```

```
 *
```

```
 * @author Aashi
```

```
 */
```

```
public class ViewMenuItems {
```

```
    public JMenuItem ZoomMenuItem = new JMenuItem("Zoom");
```

```
    public JMenuItem StatusMenuItem = new JMenuItem("Status Bar");
```

```
}
```

Output:







