CS 1073

FR03A

Assignment #6

Ethan A. McCarthy

3573807

# Section 1

import javafx.application.Application;

import javafx.event.ActionEvent;

import javafx.geometry.Pos;

import javafx.scene.Scene;

import javafx.scene.control.Button;

import javafx.scene.control.Label;

import javafx.scene.control.TextField;

import javafx.scene.layout.FlowPane;

import javafx.scene.text.Text;

import javafx.stage.Stage;

import java.util.Random;

/\*\*

 \* @author Ethan McCarthy 373807

 \*/

 public class PasswordGuesser extends Application{

    private TextField guessInField;

    private Text welcomeText;

    private Text allCaps;

    private Text guessOutput;

    private Label pos0,pos1,pos2,pos3,pos4;

    private int[] wrongGuesses = new int[5];

    private char[] password = new char[5];

    Random random = new Random();

    public void start(Stage primaryStage){

        primaryStage.setTitle("Password Guesser");

        Button guess = new Button("Guess");

        guess.setOnAction(this::guessPass);

        Button newPassword = new Button("New Password");

        newPassword.setOnAction(this::newPass);

        guessInField = new TextField();

        guessInField.setPrefWidth(150);

        guessInField.setOnAction(this::guessPass);

        welcomeText = new Text("Guess a 5-letter password!");

        allCaps = new Text("(All capital letters)");

        guessOutput = new Text("-----------------");

        pos0 = new Label("Pos 0: " + wrongGuesses[0] + " wrong guesses");

        pos1 = new Label("Pos 1: " + wrongGuesses[1] + " wrong guesses");

        pos2 = new Label("Pos 2: " + wrongGuesses[2] + " wrong guesses");

        pos3 = new Label("Pos 3: " + wrongGuesses[3] + " wrong guesses");

        pos4 = new Label("Pos 4: " + wrongGuesses[4] + " wrong guesses");

        FlowPane pane = new FlowPane(welcomeText, allCaps, guessInField, guess, newPassword, guessOutput, pos0, pos1, pos2, pos3, pos4);

        pane.setAlignment(Pos.CENTER);

        pane.setHgap(10);

        pane.setVgap(20);

        Scene scene = new Scene(pane, 200, 400);

        primaryStage.setScene(scene);

        primaryStage.show();

    }

    public void guessPass(ActionEvent event){

        String playerGuess = guessInField.getText();

        char[] letters = new char[5];

        char guessResult[] = new char[5];

        for(int i = 0; i < 5; i++){

            letters[i] = playerGuess.charAt(i);

            if (letters[i] > password[i]){

                guessResult[i] = '^';

                wrongGuesses[i] += 1;

            }

            else if (letters[i] < password[i]){

                guessResult[i] = 'V';

                wrongGuesses[i] += 1;

            }

            else{

                guessResult[i] = '\u2713';

            }

        }

        if (guessResult[0] == '\u2713' && guessResult[1] == '\u2713' && guessResult[2] == '\u2713' && guessResult[3] == '\u2713' && guessResult[4] == '\u2713'){

            guessOutput.setText("Congratulations! You guessed it!");

        }

        else{

            guessOutput.setText(guessResult[0] +"" + guessResult[1] + "" + guessResult[2] + "" + guessResult[3] + "" + guessResult[4] + " Guess again!");

        }

        pos0.setText("Pos 0: " + wrongGuesses[0] + " wrong guesses");

        pos1.setText("Pos 1: " + wrongGuesses[1] + " wrong guesses");

        pos2.setText("Pos 2: " + wrongGuesses[2] + " wrong guesses");

        pos3.setText("Pos 3: " + wrongGuesses[3] + " wrong guesses");

        pos4.setText("Pos 4: " + wrongGuesses[4] + " wrong guesses");

    }

    public void newPass(ActionEvent event){

        String alphabet = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";

        for(int i = 0; i < 5; i++){

            int randomNumbers = random.nextInt(26);

            password[i] = alphabet.charAt(randomNumbers);

            wrongGuesses[i] = 0;

        }

        pos0.setText("Pos 0: " + wrongGuesses[0] + " wrong guesses");

        pos1.setText("Pos 1: " + wrongGuesses[1] + " wrong guesses");

        pos2.setText("Pos 2: " + wrongGuesses[2] + " wrong guesses");

        pos3.setText("Pos 3: " + wrongGuesses[3] + " wrong guesses");

        pos4.setText("Pos 4: " + wrongGuesses[4] + " wrong guesses");

        guessOutput.setText("-----------------");

    }

 }

# Section 2

Graphical user interface, text

Description automatically generatedGraphical user interface, text, application, chat or text message

Description automatically generatedGraphical user interface, text, application

Description automatically generatedGraphical user interface, text, application, chat or text message

Description automatically generatedGraphical user interface, text, application

Description automatically generatedGraphical user interface, text, application, chat or text message

Description automatically generated

# Section 3

import java.util.Scanner;

/\*\*

 \* @author Ethan McCarthy 3573807

 \*/

 public class WordLenFreqBar {

    public static void main(String[] args){

        Scanner scan = new Scanner(System.in);

        String[] lines = new String[100];

        for(int i = 0; scan.hasNextLine(); i++){

            lines[i] = scan.nextLine();

        }

        String title = lines[0];

        String[] words;

        String[] ballin;

        int fiveToSix = 0;

        int sevenToEight = 0;

        int nineToTen  = 0;

        int greaterThanTen = 0;

        for(int i = 1; !lines[i].equals("end"); i++ ){

            ballin = lines[i].split(":");

            words = ballin[1].split(" ");

            for (int x = 0; x < words.length; x++){

                int length = words[x].length();

                if (length < 7 && length > 4){

                    fiveToSix++;

                }

                else if (length < 9 && length > 6){

                    sevenToEight++;

                }

                else if (length < 11 && length > 8){

                    nineToTen++;

                }

                else if (length > 10){

                    greaterThanTen++;

                }

            }

        }

        System.out.println("Word Length Frequencies for " + title);

        for(int i = 20; i >= 1; i--){

            if (i % 5 == 0){

                System.out.print(i + "\t\u007C ");

            }

            else{

                System.out.print("        \u007C ");

            }

            // u\250C lef corner \u007C | \u002D - \u2510 right corne

            if (fiveToSix == i){

                System.out.print("\u250C\u002D\u2510\t");

            }

            else if(fiveToSix > i){

                System.out.print("\u007C \u007C\t");

            }

            else{

                System.out.print("   \t");

            }

            if (sevenToEight == i){

                System.out.print("\u250C\u002D\u2510\t");

            }

            else if(sevenToEight > i){

                System.out.print("\u007C \u007C\t");

            }

            else{

                System.out.print("   \t");

            }

            if (nineToTen == i){

                System.out.print("\u250C\u002D\u2510\t");

            }

            else if(nineToTen > i){

                System.out.print("\u007C \u007C\t");

            }

            else{

                System.out.print("   \t");

            }

            if (greaterThanTen == i){

                System.out.print("\u250C\u002D\u2510\t");

            }

            else if(greaterThanTen > i){

                System.out.print("\u007C \u007C\t");

            }

            else{

                System.out.print("   \t");

            }

            System.out.println();

        }

        System.out.println("        \u2514\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D\u002D");

        System.out.println("\t  5-6\t7-8\t9-10\t10+");

    }

 }

# Section 4

A picture containing diagram

Description automatically generatedA picture containing chart

Description automatically generatedA picture containing chart

Description automatically generated