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Course: CS1073

Section: FR03B

Lab number: 6

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StringGenerator.java:

```
/**
 This is a class that represents a String Generator that generates acronyms
 and passwords.
 @author Zohaib Khan 3704572
*/

import java.util.Scanner;

public class StringGenerator {

	public static String generateAcronym(String text){

		Scanner sc = new Scanner (text);

		String output = "";

		while (sc.hasNext()){
			String token = sc.next();

			char c = token.charAt(0);

			if (Character.isUpperCase(c)){
				output = output + c;
			}
			else if (Character.isDigit(c)){
				output = output + token;

			}
		}
		return output;
	}

	public static String generatePassword(String text){

		Scanner sc = new Scanner (text);

		String pw1 = "";
		String pw2 = "";
		int counter = 0;

		while(sc.hasNext()){
			String token = sc.next();

			if (token.length() >= 3){
				counter++;

				if (counter%2 == 0){
					String evenWord = token.toUpperCase();

					for (int i=0; i<2; i++){
						char c1 = evenWord.charAt(i);
						pw1 = pw1 + c1;
					}
				}
```

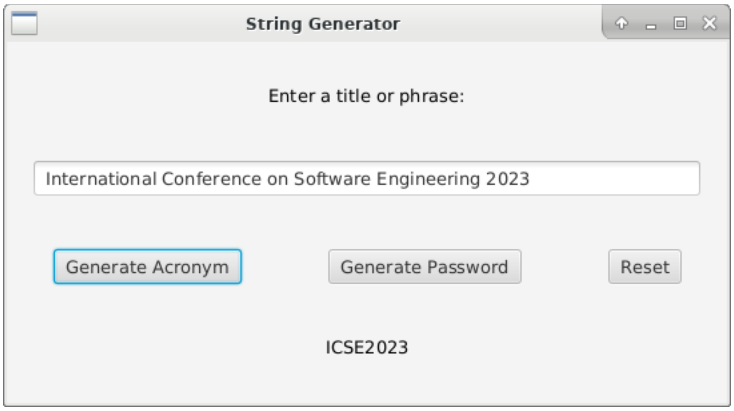
```
                        else {
                              String oddWord = token.toLowerCase();
                              for (int j= oddWord.length()-2;
                                          j < oddWord.length();j++){
                                    char c2 = oddWord.charAt(j);
                                    pw1 = pw1 + c2;

                              }
                        }
                        for (int k=0; k< pw1.length(); k++){
                              char c3 = pw1.charAt(k);
                              char c4;
                              boolean hasExceptions = false;

                              if (c3 == 'B'){
                                    c4 = '3';
                                    pw2 = pw1.substring(0,k)
                                                      + c4
                                                      + pw1.substring(k+1);
                                    hasExceptions = true;
                              }
                              else if (c3 == 'H'){
                                    c4 = '#';
                                    pw2 = pw1.substring(0,k)
                                                      + c4
                                                      + pw1.substring(k+1);
                                    hasExceptions = true;
                              }
                              else if (c3 == 'a'){
                                    c4 = '@';
                                    pw2 = pw1.substring(0,k)
                                                      + c4
                                                      + pw1.substring(k+1);
                                    hasExceptions = true;
                              }
                              else if (c3 == 't'){
                                    c4 = '+';
                                    pw2 = pw1.substring(0,k)
                                                      + c4
                                                      + pw1.substring(k+1);
                                    hasExceptions = true;
                              }

                              if (hasExceptions){
                                    pw1 = pw2;
                              }
                              else {
                                    pw2 = pw1;
                              }

                        }
                  }
            }
            return pw2;
      }
}
```

Graphics.java:

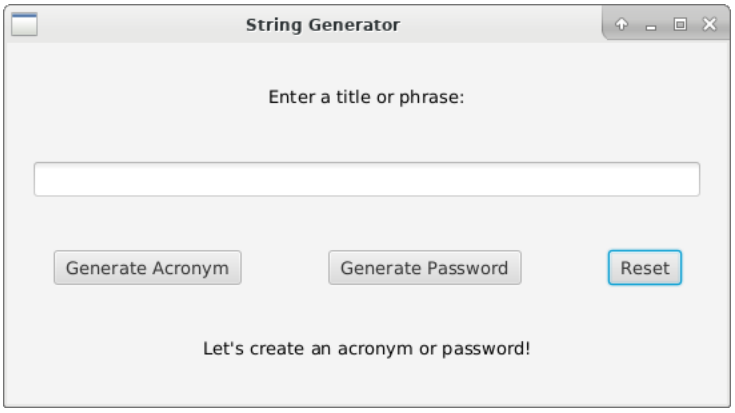
```
/**
 This is a GUI application program for an acronym or password generator.
 @author Zohaib Khan - 3740572
*/


import javafx.application.Application;
import javafx.stage.Stage;
import javafx.scene.Scene;
import javafx.scene.control.Label;
import javafx.scene.control.TextField;
import javafx.scene.control.Button;
import javafx.scene.text.Text;
import javafx.scene.layout.FlowPane;
import javafx.geometry.Pos;
import javafx.event.ActionEvent;


public class Graphics extends Application {

      private TextField input;
      private Text result;

      public void start (Stage primaryStage) {

            primaryStage.setTitle ("String Generator");

            Text intro = new Text ("Enter a title or phrase:");

            input = new TextField();
            input.setPrefWidth(500);

            Button acronym = new Button ("Generate Acronym");
            acronym.setOnAction(this::createAcronym);

            Button password = new Button ("Generate Password");
            password.setOnAction(this::createPassword);

            Button reset = new Button ("Reset");
            reset.setOnAction(this::clearRequest);

            result = new Text ("Let's create an acronym or password!");

            FlowPane pane = new FlowPane (intro, input,
                                          acronym, password,
                                                reset, result);
            pane.setAlignment(Pos.CENTER);
            pane.setHgap (65);
            pane.setVgap (40);

            Scene scene = new Scene (pane,540,270 );

            primaryStage.setScene (scene);
```

```
            primaryStage.show ();

        }

        public void createAcronym (ActionEvent event){
            String acronymText =
               StringGenerator.generateAcronym(input.getText());
            result.setText(acronymText);
        }

        public void createPassword (ActionEvent event){
            String passwordText =
               StringGenerator.generatePassword(input.getText());
            result.setText(passwordText);
        }

        public void clearRequest (ActionEvent event){
            input.setText("");
            result.setText("Let's create an acronym or password!");

        }

}
```

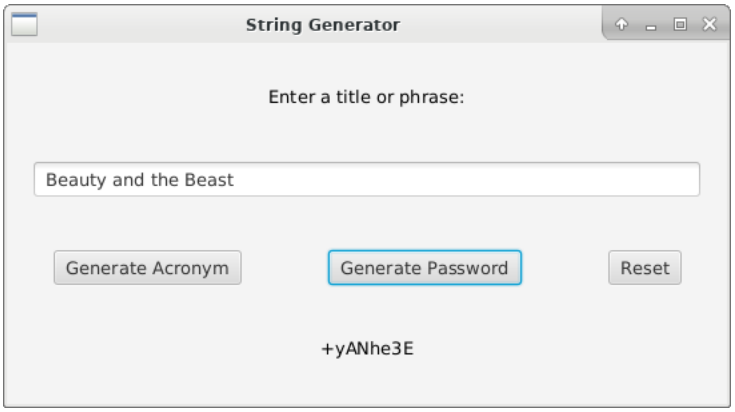
The application when it is first launched:



Here is a view after the user has entered text and pressed the Generate Acronym button:

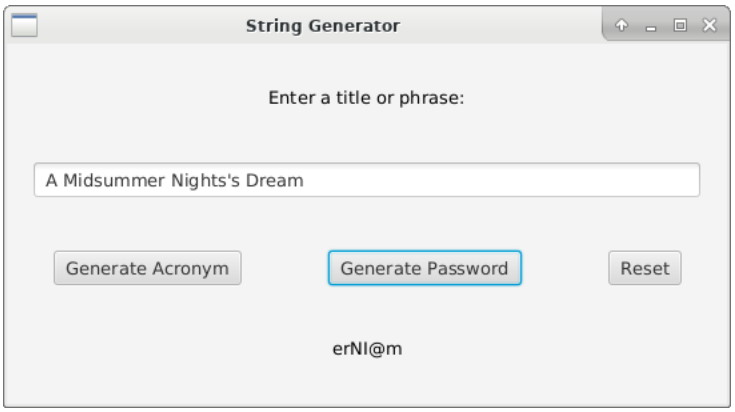


Here is a view after the user has pressed the Reset button:



Here is a view after the user has entered text and pressed the Generate Password button:

Here is a view after the user has entered text and pressed the Generate Acronym button:



Here is a view after the user has entered text and pressed the Generate Password button: