**CSCI 428 Lab01**

**Qn1: Making a simple menu system in Java.**

**Write a student registration system program with a basic menu. In the program, the user has to select an option from the options displayed on the screen. The options are related to adding a student, deleting a student, showing the number of students, helping to show the menu options, and quitting (exiting) the program.**

* **To add a student, we simply update the total number of students and print the successful message.**
* **To delete a student, get the total number of students and remove one from the total.**
* **To display the total, get and show the total in the console window.**
* **We use the exit(0) method to exit the program.**

**The menu should be displayed at the beginning of the program,**

**1) (10 pts) Create and submit the UML flow diagram of this program.**

**2) (10 pts) Write the program.**

**3) (20 pts) Based on the above program, write a JavaFX program with the same functionality.**

**4) (5 pts) Show the outputs of the program.**

**1.UML Flow Diagram**

**A diagram of a flowchart

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**2. Java Program**

*\*Program to create Student Registration Menu System.*

*\* @author Acharya, Ashish*

*\* @assignment CSCI 428 Lab01*

*\* @date 03/03/ 2024*

*\*/*

**import java.util.Scanner;**

**public class csci428Lab01AshishAcharya {**

**private static int *totalStudents* = 0;**

**public static void main(String[] args) {**

**Scanner scanner = new Scanner(System.*in*);**

**while (true) {**

***displayMenu*();**

**int choice = scanner.nextInt();**

**switch (choice) {**

**case 1:**

***addStudent*();**

**break;**

**case 2:**

***deleteStudent*();**

**break;**

**case 3:**

***showTotalStudents*();**

**break;**

**case 4:**

**System.*out*.println("Exiting the program...");**

**System.*exit*(0);**

**default:**

**System.*out*.println("Invalid choice! Please try again.");**

**}**

**}**

**}**

**private static void displayMenu() {**

**System.*out*.println("Welcome to Student Registration System");**

**System.*out*.println("1. Add Student");**

**System.*out*.println("2. Delete Student");**

**System.*out*.println("3. Show Total Students");**

**System.*out*.println("4. Quit");**

**System.*out*.print("Enter your choice: ");**

**}**

**private static void addStudent() {**

***totalStudents*++;**

**System.*out*.println("Student added successfully.");**

**}**

**private static void deleteStudent() {**

**if (*totalStudents* > 0) {**

***totalStudents*--;**

**System.*out*.println("Student deleted successfully.");**

**} else {**

**System.*out*.println("No students to delete.");**

**}**

**}**

**private static void showTotalStudents() {**

**System.*out*.println("Total number of students: " + *totalStudents*);**

**}**

**}**

**3. Java FX Program**

*\*Program to create Student Registration Menu System.  
\* @author Acharya, Ashish  
\* @assignment CSCI 428 Lab01  
\* @date 03/03/ 2024  
\*/*

**package CSCI428Lab01Fx;**

**import javafx.application.Application;**

**import javafx.scene.Scene;**

**import javafx.scene.control.Button;**

**import javafx.scene.control.Label;**

**import javafx.scene.layout.VBox;**

**import javafx.stage.Stage;**

**public class Main extends Application {**

**@Override**

**public void start(Stage primaryStage) {**

**primaryStage.setTitle("Student Registration System");**

**Label totalStudentsLabel = new Label("Total Students: 0");**

**int[] totalStudents = {0}; *// Using an array to store total students as a reference***

**Button addStudentBtn = new Button("Add Student");**

**addStudentBtn.setOnAction(e -> {**

**totalStudents[0]++;**

**totalStudentsLabel.setText("Total Students: " + totalStudents[0]);**

**System.*out*.println("Student added successfully!");**

**});**

**Button deleteStudentBtn = new Button("Delete Student");**

**deleteStudentBtn.setOnAction(e -> {**

**if (totalStudents[0] > 0) {**

**totalStudents[0]--;**

**totalStudentsLabel.setText("Total Students: " + totalStudents[0]);**

**System.*out*.println("Student deleted successfully!");**

**} else {**

**System.*out*.println("No students to delete!");**

**}**

**});**

**Button showTotalBtn = new Button("Show Total Students");**

**showTotalBtn.setOnAction(e -> {**

**System.*out*.println("Total Students: " + totalStudents[0]);**

**});**

**Button quitBtn = new Button("Quit");**

**quitBtn.setOnAction(e -> {**

**System.*out*.println("Exiting program...");**

**primaryStage.close();**

**});**

**VBox layout = new VBox(10);**

**layout.getChildren().addAll(totalStudentsLabel, addStudentBtn, deleteStudentBtn, showTotalBtn, quitBtn);**

**Scene scene = new Scene(layout, 400, 400);**

**primaryStage.setScene(scene);**

**primaryStage.show();**

**}**

**public static void main(String[] args) {**

***launch*(args);**

**}**

**}**

**Output:**

**Java Output**

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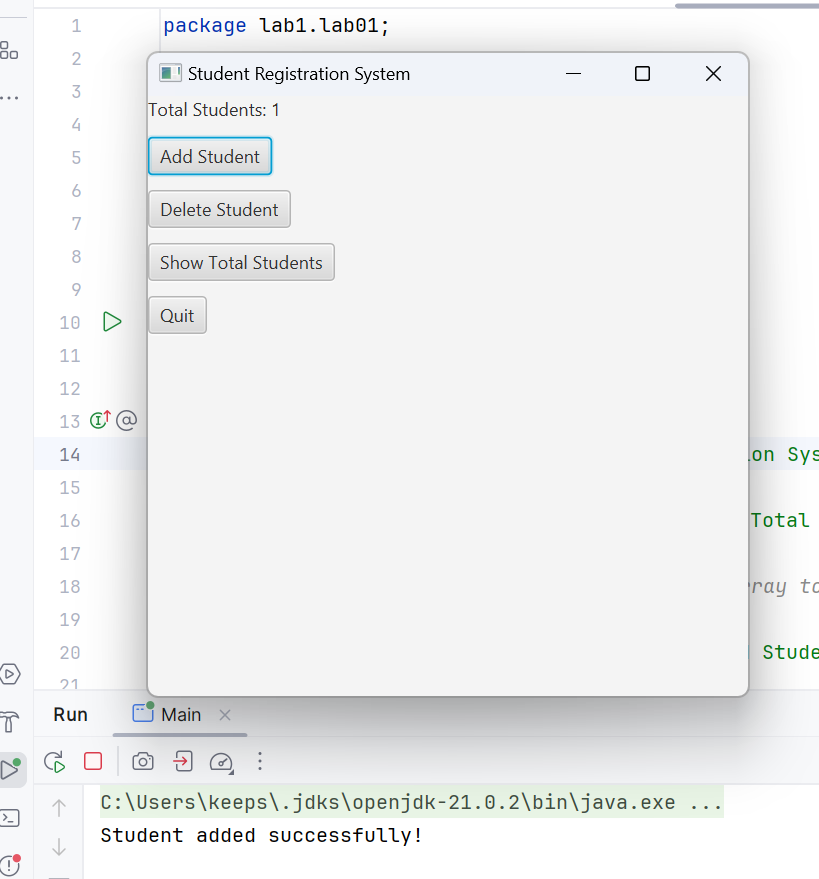
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**JavaFX Output**

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