**Project**

**Student Name: Subhash Kumar UID: 24BCA10271**

**Branch: BCA Section/Group: 1/A**

**Semester: 1st Date of Performance: 07/11/2024**

**Subject Name: Computer programming Subject Code:24CAH-101**

**Q. How to implement calculator by using switch case statement?**

1. **Aim/Overview of the practical: Design and implement Calculator by using switch case statement.**
2. **Task to be done:**

* **Basic Structure:**
* **Create a main function to handle user input and display results.**
* **Display Menu:**
* **Implement a menu to show available operations (e.g., addition, subtraction, multiplication, division).**
* **Input Handling:**
* **Get user input for the operation and the numbers involved.**
* **Perform Calculations:**
* **Write functions for each operation (addition, subtraction, multiplication, division).**

1. **Code for experiment/practical:**

* **#include <stdio.h>**
* **int main()**
* **{**
* **int choice;**
* **float num1, num2, result;**
* **printf("Select operation:\n");**
* **printf("1. Addition\n");**
* **printf("2. Subtraction\n");**
* **printf("3. Multiplication\n");**
* **printf("4. Division\n");**
* **printf("Enter your choice: ");**
* **scanf("%d", &choice);**
* **if (choice >= 1 && choice <= 4)**
* **{**
* **printf("Enter first number: ");**
* **scanf("%f", &num1);**
* **printf("Enter second number: ");**
* **scanf("%f", &num2);**
* **}**
* **switch (choice)**
* **{**
* **case 1:**
* **result = num1 + num2;**
* **printf("Result: %.2f\n", result);**
* **break;**
* **case 2:**
* **result = num1 - num2;**
* **printf("Result: %.2f\n", result);**
* **break;**
* **case 3:**
* **result = num1 \* num2;**
* **printf("Result: %.2f\n", result);**
* **break;**
* **case 4:**
* **if (num2 != 0)**
* **{**
* **result = num1 / num2;**
* **printf("Result: %.2f\n", result);**
* **}**
* **else**
* **{**
* **printf("Error: Division by zero\n");**
* **}**
* **break;**
* **default:**
* **printf("Invalid choice\n");**
* **break;**
* **}**
* **return 0;**
* **}**

1. **Result/Output/Writing Summary:**

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**Learning outcomes (What I have learnt):**

1. Gain familiarity with the syntax and structure of the C programming language, including functions, variables, and control flow.

2. Understand how to create and use functions for modularity, enabling better organization of code for different operations.

3. Explore various data types (integers, floats) and operators (arithmetic, relational) to perform calculations effectively.

4. Learn to implement basic error handling techniques, such as validating user input and managing exceptions (e.g., division by zero).

5. Improve skills in designing a user-friendly console interface, providing clear instructions and outputs.

**Evaluation Grid:**

|  |  |  |  |
| --- | --- | --- | --- |
| Sr. No. | Parameters | Marks Obtained | Maximum Marks |
| 1. | Demonstration and Performance (Pre Lab Quiz) |  | 5 |
| 2. | Worksheet |  | 10 |
| 3. | Post Lab Quiz |  | 5 |