Experiment No. 3

CPL (C Programming Lab)

Aim : WAP to design a menu driven calculator using switch and goto.

Software : Codeblocks & MingW

Theory : ***Switch and Goto Statements***

1. switch Statement

The switch statement is a control structure used for multi-way branching. It allows a variable or expression to be tested against a list of values, and the code corresponding to the matching value is executed. It is often used when there are multiple conditions to evaluate, typically as an alternative to else if ladders.

Syntax:

```
switch (expression) {
    case constant1:
        // Code for case 1
        break;
    case constant2:
        // Code for case 2
        break;
    ...
    default:
        // Code if no case matches
}
```

- **Expression**: The value (usually an integer or character) that is compared to the constants in the case statements.
- **case**: Each case defines a possible value of the expression.
- **break**: Used to exit the switch after a matching case is executed, preventing "fall-through" to subsequent cases.

- **default**: An optional block that executes if no case matches.

Example:

```
int day = 3;
switch (day) {
   case 1:
      printf("Monday");
      break;
   case 2:
      printf("Tuesday");
      break;
   case 3:
      printf("Wednesday");
      break;
   default:
      printf("Invalid day");
}
```

2. goto Statement

The goto statement provides a way to jump to a labeled section of code. While it offers flexibility in controlling the flow of execution, its use is generally discouraged because it can make code difficult to follow and maintain (often referred to as "spaghetti code").

Syntax:

```
goto label;
// Some code
label:
   // Code to jump to
```

- **goto**: This keyword is followed by the name of a label, and execution jumps to that label.
- **Label**: A user-defined identifier followed by a colon (:) that marks the destination of the goto statement.

Example:

```
int num = 1;
if (num == 1)
   goto label;
printf("This won't be printed");
label:
printf("Jumped to label");
```

Task 1: **WAP to design a menu driven calculator using switch and goto.**

Program with Output:

Conclusion:

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CO's Covered:

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