The **switch** statement in C is a control flow statement used for making decisions based on the value of an expression. It provides a concise way to handle multiple conditions and execute different blocks of code depending on the value of a variable.

Here's the basic syntax of the **switch** statement:

```
switch (expression)
{
    case constant1:
        // Code to be executed if expression matches constant1
        break;

    case constant2:
        // Code to be executed if expression matches constant2
        break;

    // More case statements can be added as needed

    default:
        // Code to be executed if none of the cases match
}
```

Here's a breakdown of the components:

- **switch (expression)**: The expression is evaluated once, and its value is compared with the values specified in the **case** statements.

- **case constant:**: If the value of the expression matches the constant in a **case** statement, the code block following that **case** is executed. The **break** statement is used to exit the **switch** statement.

- **default:**: If none of the **case** values match the expression, the code block following the **default** statement is executed. The **default** case is optional, and its purpose is similar to the **else** clause in an **if-else** statement.

Example 01:- Calculator app using switch statement

```
#include <stdio.h>

int main()
{
	double num1, num2, result;
	char operator;
	printf("Enter first number: ");
	scanf("%lf", &num1);

	printf("Enter operator (+, -, *, /): ");
	scanf(" %c", &operator);

	printf("Enter second number: ");
	scanf("%lf", &num2);

	// Switch statement for performing the operation
	switch (operator)
	{
		case '+':
			result = num1 + num2;
			printf("Result: %.2lf\n", result);
			break;
		case '-':
			result = num1 - num2;
			printf("Result: %.2lf\n", result);
			break;
		case '*':
```

```
                result = num1 * num2;
                printf("Result: %.2lf\n", result);
                break;
        case '/':
                if (num2 != 0)
                {
                        result = num1 / num2;
                        printf("Result: %.2lf\n", result);
                }
                else
                {
                        printf("Error: Division by zero is not allowed.\n");
                }
                break;

        default:
        printf("Error: Invalid operator.\n");
    }

    return 0;
}
```