

### Switch Case

This is a multiple or multi-way branching decision making statement. When we use nested if-else statement to check more than one conditions then the complexity of a program increases in case of a lot of conditions. So to overcome this problem, C provides 'switch case'. Switch case checks the value of a expression against a case values, if condition matches the case values then the control is transferred to that point.

#### Syntax: switch (expression)

```
{
  case expr1:
      statements;
  break;
  case expr2:
      statements;
  break;
  .
  .
  case expr N:
      statements;
  break;
  default:
      statements;
  break;
}
```

*In this syntax, switch, case, break are keywords.*

*expr1, expr2 are known as 'case labels.'*

*Break statement causes an exit from switch statement.*

*Default case is optional case. When neither any match found, it executes*

*Note: The **break** statement is needed so that once a case has been executed, it will skip all the other cases and go outside the **switch** statement.*

*If the **break** statement is omitted, the execution will be carried out to the next alternatives until the next **break** statement is found.*

#### Example 1: Program to check which digit number is given by the user.

```
#include<stdio.h>
#include<conio.h>
main()
{
  int x,i;
  clrscr();
  printf("enter any digit no.");
  scanf("%d",&x);
  for(i=0;x!=0;x/=10)
  i++;
  switch(i)
  {
    case 1:   printf("One Digit No.");
              break;
    case 2:   printf("Two Digit No.");
              break;
    case 3:   printf("Three Digit No.");
              break;
    case 4:   printf("Four Digit No.");
              break;
    case 5:   printf("Five Digit No.");
              break;
    default:  printf("Wrong Input");
  }
  getch();
}
```

**Example 2:** Write a C program that displays the recommended actions depending on the color of a traffic light using the switch statement.

```
#include<stdio.h>
#include<conio.h>
void main ( )
{
    char colour;
    printf ("Enter the colour of the light (R,G,Y,A): ");
    scanf ("%c", &colour);
    switch (colour)
    {
        case 'R':
        case 'r':    printf ("STOP! \n");
                    break;

        case 'Y':
        case 'y':    printf ("CAUTION! \n");
                    break;

        case 'G':
        case 'g':    printf ("GO! \n");
                    break;

        default:    printf ("The colour is not valid.\n");
                    getch();
    }
}
```

**Example 3:** Write a menu driven program using switch case which has following option:

1. Addition of numbers
2. Multiplication of numbers
3. Subtraction of numbers
4. Division of numbers
5. Modulus of numbers

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int a,b,ch;
    clrscr();
    printf("Enter any two number\n");
    scanf("%d%d",&a,&b);
    printf("Enter your choice\n1=add\n2=multi\n3=sub\n4=div\n5=mod");
    scanf("%d",&ch);
    switch(ch)
    {
        case 1: printf("Addition of number=%d",a+b);
                break;
        case 2: printf("Multiplication of number=%d",a*b);
                break;
        case 3: printf("Subtraction of number=%d",a-b);
                break;
        case 4: printf("Division of number=%d",a/b);
                break;
        case 5: printf("Modulus of number=%d",a%b);
                break;
        default: printf("Wrong input ");
    }
    getch();
}
```

**Try yourself:**

- Q.1.** Write a program with the help of switch case to input any number between 1 to 7 and print the appropriate day name. (Assume 1 is Monday).
- Q.2.** Write a program to input any 3 digit number and any one from the following option:
1. Sum of Digit
  2. Multiplication of digit
  3. Reverse of Digit