Tutorial 05

Writing switch condition, while, do while & for loops

Switch

1.Input two numbers and display the outputs of the basic mathematic operations. The output screen should be displayed as follows;

```
Enter two numbers ____ ____
1. +
2. –
3. *
4. /
Please enter your Choice ___
```

```
#include <stdio.h>
int main() {
double num1, num2;
int choice;
printf("Enter two numbers: ");
scanf("%lf %lf", &num1, &num2);
printf("1. +\n");
printf("2. -\n");
printf("3. *\n");
printf("4. /\n");
printf("Please enter your choice: ");
scanf("%d", &choice);
switch (choice) {
case 1:
printf("Result: %.2f\n", num1 + num2);
break;
case 2:
printf("Result: %.2f\n", num1 - num2);
break;
case 3:
printf("Result: %.2f\n", num1 * num2);
break;
case 4:
if (num2 != 0)
printf("Result: %.2f\n", num1 / num2);
else
printf("Cannot divide by zero!\n");
break;
default:
printf("Invalid choice.\n");
```

```
break;
}
return 0;
}
```

While loop

1. Input 10 numbers and display the total count of odd & even numbers in the entered number series.

```
#include <stdio.h>
int main() {
int num, oddCount = 0, evenCount = 0, count = 0;
while (count < 10) {
printf("Enter a number: ");
scanf("%d", &num);
if (num % 2 == 0)
evenCount++;
else
oddCount++;
count++;
}
printf("Total even numbers: %d\n", evenCount);
printf("Total odd numbers: %d\n", oddCount);
return 0;
}
```

2.Modify the above program in to enter series of numbers terminates when the user enter -99 and display the same expected output.

```
#include <stdio.h>
int main() {
int num, oddCount = 0, evenCount = 0;
printf("Enter numbers (-99 to terminate):\n");
while (1) {
printf("Enter a number: ");
scanf("%d", &num);
if (num == -99)
break;
if (num % 2 == 0)
evenCount++;
else
oddCount++;
}
printf("Total even numbers: %d\n", evenCount);
printf("Total odd numbers: %d\n", oddCount);
return 0;
}
```

Do while loop Rewrite the programs for the above while loop question 1 & 2 using do while loop

number 01

```
#include <stdio.h>
int main() {
int num, oddCount = 0, evenCount = 0, count = 0;
do {
printf("Enter a number: ");
scanf("%d", &num);
if (num % 2 == 0)
evenCount++;
else
oddCount++;
count++;
} while (count < 10);
printf("Total even numbers: %d\n", evenCount);
printf("Total odd numbers: %d\n", oddCount);
return 0;
}
```

number 02

```
#include <stdio.h>
int main() {
int num, oddCount = 0, evenCount = 0;
printf("Enter numbers (-99 to terminate):\n");
do{
printf("Enter a number: ");
scanf("%d", &num);
if (num == -99)
break;
if (num % 2 == 0)
evenCount++;
else
oddCount++;
}while (1);
printf("Total even numbers: %d\n", evenCount);
printf("Total odd numbers: %d\n", oddCount);
return 0;
}
```

For loop

1.Input 10 numbers and display the average value using the for loop

```
#include <stdio.h>
int main() {
int num, sum = 0;
for (int i = 0; i < 10; i++) {
printf("Enter a number: ");
scanf("%d", &num);
sum += num;
}
```

```
printf("Average value: %.2f\n", average);
return 0;
}
```

2.Display the following output using the for loop

```
#include <stdio.h>
int main() {
int x, y;
for (x = 1; x <= 5; x++) // Removed the semicolon here
{
for (y = 1; y <= x; y++) // Adjusted the condition to y <= x
{
printf("*");
}
printf("\n");
}
return 0;
}
```