

CCA-101. Fundamentals of it & programming

- ⑥. Write a program in C to display your name and address on Computer Screen.

```
#include <stdio.h>

void main() {
    printf("\n Dr Sheelesh Kumar Sharma"); // it displays the
    String inside Quotation on computer Screen
    printf("\n Ims Ghaziabad"); // it displays the String
    Inside Quotation on computer Screen. }
```

Output

Dr sheelesh kumar sharma
Ims Ghaziabad

- ⑦. Write a program in C to add two integer numbers

```
#include <stdio.h>
```

```
void main() {
```

```
    int n1, n2, sum; // it declares three variables n1, n2
    and sum as integer type
```

```
    printf("Enter two integer numbers:");
```

```
    scanf("%d %d", &n1, &n2); // it reads two numbers that
    are stored in variables n1, n2 respectively.
```

```
    sum = n1 + n2; // calculating sum. }
```

Output:

Enter two integer numbers: 10 20

Sum = 30

3) Write a program in C to compute the value of x in this expression $x = 20 / (8 - 4)^2 \cdot 8 - 2$.

```
#include <stdio.h>
```

```
void main() {
```

```
int x;
```

```
    x = 20 / (8 - 4)^2 * 8 - 2;
```

```
    printf("x = %d", x); // it displays the value of x }
```

Output:

x = 38.

4) Write a program in C to compute a quotient and remainder.

```
#include <stdio.h>
```

```
void main() {
```

```
int dividend, divisor, quotient, remainder; // it declares variables  
as integer type.
```

```
    printf("Enter dividend:");
```

```
    scanf("%d", &dividend); // it reads the value of dividend
```

```
    printf("Enter divisor:");
```

```
    scanf("%d", &divisor); // it reads the value of divisor
```

```
    quotient = dividend / divisor; // it computes quotient
```

```
    remainder = dividend % divisor; // it computes remainder
```

```
    printf("Quotient = %d\n", quotient); // it displays the value  
of quotient.
```

```
    printf("Remainder = %d", remainder); // it displays the value of remainder }
```

Output:

Enter dividend: 20

Enter divisor: 3

Quotient = 6

Remainder = 2

6. Write a program in C to swap the value of two integer numbers

```
#include <stdio.h>
void main() {
    int n1, n2, temp;

    n1 = 10;
    n2 = 20;
    temp = n1; // value of n1 is assigned to temp
    n1 = n2; // value of n2 is assigned to n1
    n2 = temp; // value of temp (initial value of n1) is assigned to n2
    printf("\n After Swapping, n1 number = %.d", n1);
    printf("\n After Swapping n2 number = %.d", n2);
}
```

Output:

After Swapping, n1 Number = 20

After Swapping n2 Number = 10

In the above program, the temp variable is assigned the value of the n1 variable then, the value of the n1 variable is assigned to the n2 variable. Finally, the temp (which holds the initial value of n1) is assigned to n2 this completes the Swapping process.

```
#include <stdio.h>
```

```
void main() {
```

```
int n1, n2
```

```
    n1 = 40;
```

```
    n2 = 10;
```

```
    // swapping
```

```
    n1 = n1 - n2; // n1 = 40 - 10 so n1 = 30
```

```
    n2 = n1 + n2; // n2 = 30 + 10 so n2 = 40
```

```
    n1 = n2 - n1; // n1 = 40 - 30 so n1 = 10
```



```
printf (" \n After Swapping , n1 Number = %d ", n1);
```

```
printf (" \n After Swapping , n2 Number = %d ", n2);
```

Output:

After Swapping , n1 Number = 10

After Swapping , n2 Number = 40

6) Write a program to find the largest of three numbers

```
#include <stdio.h>
```

```
void main() {
```

```
int n1, n2, n3, largest;
```

```
printf (" Enter three different number: ");
```

```
scanf ("%d %d %d", &n1, &n2, &n3);
```

```
if (n1 > n2)
```

```
    largest = n1;
```

```
else
```

```
    largest = n2;
```

```
if (n3 > largest)
```

```
    largest = n3;
```

```
printf (" Largest number is %d", largest); }
```

Output:

Enter three numbers : 30 20 40

Largest number is 40

7) Write a program to check whether a integer number is even or odd.

```
#include <stdio.h>

void main() {
    int num;
    printf("Enter a number:");
    scanf("%d", &num);
    if (num % 2 == 0) {
        printf("Even number");
    }
    else
        printf("odd number"); }

```

Output 1

Enter a number : 12

Even number

Output 2

Enter a number: 11

odd number

8) Write a program to display table of any integer number.

```
#include <stdio.h>

void main() {
    int n, i;
    printf("Enter an integer:");
    scanf("%d", &n);
    for (i = 1; i <= 10; ++i) {
        printf("%d * %d = %d \n", n, i, n * i); }
}

```

Output:

Enter an integer: 9

9 x 1 = 9 9 x 6 = 54

9 x 2 = 18 9 x 7 = 63

9 x 3 = 27 9 x 8 = 72

9 x 4 = 36 9 x 9 = 81

9 x 5 = 45 9 x 10 = 90

- 9) Write a program to display first ten terms of the Fibonacci sequence.

The Fibonacci Sequence: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34

The Fibonacci Sequence is a sequence where 0 is followed by 1.

```
#include <stdio.h>
void main () {
    int i, n, t1 = 0, t2 = 1, next term;
    printf ("Enter the number of terms");
    scanf ("%d", &n);
    printf ("Fibonacci Series: ");
    for (i = 1; i <= n; ++i) {
        printf ("%d, ", t1);
        next term = t1 + t2;
        t1 = t2;
        t2 = next term;
    }
```

Output

Enter the number of terms: 10

Fibonacci Series 0, 1, 1, 2, 3, 5, 8, 13, 21, 34.

- 10) Write a program to calculate the sum of digits of an Integer number?

```
#include <stdio.h>
void main () {
    int n, sum = 0, digit;
    printf ("Enter an integer: ");
    scanf ("%d", &n);
    while (n != 0) {
        digit = n % 10;
        sum = sum + digit;
        n = n / 10;
    }
```


Output

Enter an integer : 142

Sum of the digits = 7

This program takes an integer input from user 142. The while loop is used until $n \neq 0$ is false. In each iteration of the loop, each digit (using $\text{digit} = n \% 10$) when n is divided by 10 is calculated and the value of n is reduced by 10 times ($n = n / 10$). Inside the loop, the sum of digit of an integer number is computed using $\text{Sum} = \text{Sum} + \text{digit}$.

11) Write a program to reverse an integer number:

```
#include <stdio.h>
```

```
void main () {
```

```
int n, rev = 0, digit;
```

```
printf ("Enter an integer:");
```

```
scanf ("%d", &n);
```

```
while (n != 0) {
```

```
digit = n % 10;
```

```
rev = rev * 10 + digit;
```

```
n = n / 10; }
```

```
printf ("Reversed number = %d", rev); }
```

Output

Enter an integer : 345

Reversed number = 543

This program takes an integer input from the user 345. The while loop is used until $n \neq 0$ is false in each iteration of the loop, the digit ($\text{digit} = n \% 10$), when is divided by 10 is calculated and the value of n is reduced by 10 times ($n = n / 10$), inside the loop, the reversed number is computed using: $\text{rev} = \text{rev} \times 10 + \text{digit}$.

12) Write a program to calculate factors of a positive integer:

```
#include <stdio.h>
void main () {
    int num, i;
    printf ("Enter a positive integer: ");
    scanf ("%d", &num);
    printf ("Factors of %d are: ", num);
    for (i = 1; i <= num; ++i) {
        if (num % i == 0) {
            printf ("%d ", i);
        }
    }
}
```

Output

Enter a positive integer: 10

Factors of 10 are: 1 2 5 10