

CCA-101: Fundamentals of IT & Programming.

1. Write a Program in C to display your name and address on computer screen.

Solution..

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

```
void main () {
```

```
    printf("\n Dr Sheesh 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 Sheesh Kumar Sharma

IMS Ghaziabad.

2. Write a Program in C to add two integer numbers.

Solution-

```
#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 and n2 respectively.
```

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

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

```
}
```

Output.

Enter two integer number : 10 20

Sum = 30

3. Write a program in C to compute the value of x in this expression

$$x = 20 / (8 - 4) * 8 - 2$$

Solution:

```
#include <stdio.h>
void main () {
    int x ;
    x = 20 / (8 - 4) * 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

Solution:

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

```
void main () {
```

```
    int dividend, divisor, quotient, remainder; // it  
    declares 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

5. Write a Program in C to swap the value of two integer numbers.

Solution.

Swap numbers using temporary variable

```
#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

Swap numbers without using temporary variables.

```
#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.

Solution:

```
#include <stdio.h>

void main () {
    int n1, n2, n3, largest;
    printf("Enter three different numbers: ");
    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.

Solution -

```
#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.

Solution :

```
#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 * 1 = 9

9 * 2 = 18

9 * 3 = 27

9 * 4 = 36

9 * 5 = 45

9 * 6 = 54

9 * 7 = 63

9 * 8 = 72

9 * 9 = 81

9 * 10 = 90

9. Write a Program to display first ten terms of the Fibonacci sequence.

Solution:

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

The Fibonacci Sequence is a sequence where the next term is the sum of the previous two terms.

The first two terms of the Fibonacci sequence are 0 followed by 1.

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

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.

Solution:

```
#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;
    }
    printf("Sum of the digits = %d", sum);
}
```

Output:

Enter an integer : 142

Sum of the digits = 7

11. Write a program to reverse an integer number.

Solution :

```
#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

12. Write a program to calculate factors of a positive integer.

Solution-

```
#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