CCA-101: Fundamentals of IT & programming

Q. no. 1: Write a program in C to display your name and address on Computer screen.

Q. no. 2: Write a program in C to add two integer numbers

Q. no. 3: Write a program in C to compute the value of x in this expression x=20/(8-4)*8-2

Q. no. 4: Write a program in C to compute a quotient and remainder

Q. no. 5: write a program in C to swap the value of two integer numbers

Q. no. 6: Write a program to find the largest of three numbers

Q. no. 7: Write a program to check whether a integer number is even or Odd.

Q. no. 8: Write a program to display table of any integer number.

Q. no. 9: Write a program to display first ten terms of the Fibonacci Sequence.

Q. no. 10 Write a program to calculate the sum of digits of an integer Number.

Q. no. 11 Write a program to reserve an integer number.

Q. no. 12 Write a program to calculate factors of a positive integer.

Solutions

Solution 1

```
#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

Solution 2

```
#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 numbers: 10 20

Sum = 30

Solution 3

```
#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

Solution 4

```
#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
```

Solution 5

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

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.

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

Solution 6

```
#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
```

Solution 7

```
#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

Solution 8

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

Solution 9

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,
```

Solution 10

```
#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

This program takes an integer input from the user 142. The While loop is used until n !=0 is false. In each iteration of the loop, each digit (using 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 digits of an integer number is computed using sum = sum + digit

Solution 11

```
#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);

}
```

Outout

Enter an integer: 345

Reversed number = 543

This program takes an integer input from the user 345. The While loop is used until n !=0 is false. In each iteration of the loop, the digit (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 reversed number is computed using: rev = rev*10 + digit.

Solution 12

```
#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