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CCA-101: Fundamentals of IT Programming

Qn01 → Write a Programme in C to display Your Name and address on Computer ~~Screen~~ Screen.

Ans → #include <stdio.h>
Void main() {
Printf("In Dr Sheelesh Kumar Sharma"); // it displays
the String inside quotation on Computer ~~Screen~~ Screen.
Printf("In IMS Ghaziabad"); // it displays the
String inside quotation on Computer Screen }

output

Dr Sheelesh Kumar Sharma
IMS Ghaziabad.

Qn02 → Write a Programme in C add two integer numbers.

Ans → #include <stdio.h>
void main() {
int n1, n2, Sum; // it declares three variables n1, n2
and ~~and~~ Sum as integer type
Printf("Enter two integer numbers:");
scanf("%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 ~~defends~~ displays
the value of Sum }

output

Enter two integer numbers: 10 20
Sum = 30.

②

QNO3: → Write a programme in C to compute the value of x in this expression $x = 20 / (8 - 4)^* 8 - 2$.

Ans: → #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.

QNO4: → Write a Program in C to compute a quotient and remainder.

Ans: → #include <stdio.h>
void main() {
int dividend, divisor, quotient, remainder; // it declares variables as integer type
printf("Enter dividend: ");
scanf("%d", ÷nd); // 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.

Ques: Write a Program in C to Swap the value of two integer numbers.

Ans: Swap numbers using temporary variables

```
#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.

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Finally, the temp (which holds the initial value of $n1$) is assigned to $n2$. This completes the swapping process.

Swap numbers without using temporary value 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.

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

Ans: → #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 .

Q. Not: Write a program to check whether a integer number is even or odd?

Ans:

```
#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

QNo8: → Write a program to display table of any integer number?

Ans: → #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);  
    }  
}
```

Out Put

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

QNo9: → Write a program to display first even ten terms of the Fibonacci Sequence?

Ans: >

The Fibonacci Sequence: 0, 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 term: 10

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

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Q No 10: Write a Program to calculate the Sum of digits of an integer number.

Ans: #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 $n \neq 0$ is false. In each iteration of the loop, each digit (using, $\text{digit} = n \% 10$) when n is divided by 10 is ~~called~~ calculated integer number's computed using $\text{Sum} + \text{digit}$.

Q No 11: Write a Program to reverse an integer number.

Ans: #include <stdio.h>
 void main() {

(9)

```

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 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: $\text{rev} = \text{rev} * 10 + \text{digit}$.

Q No 12: Write a program to calculate factors of a positive integer?

Ans: $\#$ 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.