

C Programming Loop Program

1. C program to print Even numbers from 1 to 10.

Program:

```
#include <stdio.h>

int main()
{
    int i;
    printf("Even numbers between 1 to 10 : ");
    for (i = 1; i <= 10; i++)
    {
        if(i%2 == 0)
        {
            printf("%d ", i);
        }
    }
    return 0;
}
```

Output:

Even numbers between 1 to 10 : 2 4 6 8 10

2. Print Odd Number from 1 to 10.

Program:

```
#include<stdio.h>

int main()
{
```

```
int i, number;
printf("Odd numbers between 1 to 10 : ");
for(i = 1; i <= 10; i++)
{
    if ( i % 2 != 0 )
    {
        printf(" %d", i);
    }
}
return 0;
}
```

Output:

Odd numbers between 1 to 10 : 1 3 5 7 9

3. Check the number is Armstrong Number or Not.

Armstrong Number: Armstrong number is a number that is equal to the sum of cubes of its individual digits.

Program:

```
#include <stdio.h>
int main()
{
    int num, remainder, sum = 0, temp;
    printf("Enter an integer number : ");
    scanf("%d", &num);
    temp = num;
    while(num)
```

```

{
    remainder = num % 10;
    sum = sum + (remainder * remainder * remainder);
    num = num / 10;
}
if(temp == sum)
{
    printf("%d is Armstrong Number\n", temp);
}
else
{
    printf("%d is not Armstrong Number\n", temp);
}
return 0;
}

```

Output:

Enter an integer number : 153

153 is Armstrong Number

4. Find the Factor of an Integer Number.

Factor of a Number: The factor of a number, is a divisor of the given number that divides it completely, without leaving any remainder.

Program:

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

```
int main()
```

```
{
```

```
    int num, i;
```

```
printf("Enter an Integer Number : ");
scanf("%d", &num);
printf("Factors of %d are : ", num);
for (i = 1; i <= num; ++i)
{
    if (num % i == 0)
    {
        printf("%d ", i);
    }
}
return 0;
}
```

Output:

```
Enter an Integer Number : 78
Factors of 78 are : 1 2 3 6 13 26 39 78
```

5. Find the GCD or HCF of Two Integer Number.

Program:

```
#include <stdio.h>
int main()
{
    int num1, num2, i, gcd;
    printf("Enter the First Number : ");
    scanf("%d", &num1);
    printf("Enter the Second Number : ");
    scanf("%d", &num2);
```

```
for(i=1; i <= num1 && i <= num2; ++i)
{
    if(num1%i==0 && num2%i==0)
        gcd = i;
}

printf("HCF or GCD of Number %d and %d is : %d", num1, num2,
gcd);

return 0;
}
```

Output:

Enter the First Number : 10

Enter the Second Number : 20

HCF or GCD of Number 10 and 20 is : 10

6. Print ASCII value of the Capital Letters (A to Z).

Program:

```
#include <stdio.h>

int main()
{
    int i;

    printf("ASCII value of Capital Letters (A to Z) are : ");

    for ( i = 65; i < 91; i++)
    {
        printf ("\nThe ASCII value of %c is %d ", i, i);
    }

    return 0;
}
```

}

Output:

ASCII value of Capital Letters (A to Z) are :

The ASCII value of A is 65

The ASCII value of B is 66

The ASCII value of C is 67

The ASCII value of D is 68

The ASCII value of E is 69

The ASCII value of F is 70

The ASCII value of G is 71

The ASCII value of H is 72

The ASCII value of I is 73

The ASCII value of J is 74

The ASCII value of K is 75

The ASCII value of L is 76

The ASCII value of M is 77

The ASCII value of N is 78

The ASCII value of O is 79

The ASCII value of P is 80

The ASCII value of Q is 81

The ASCII value of R is 82

The ASCII value of S is 83

The ASCII value of T is 84

The ASCII value of U is 85

The ASCII value of V is 86

The ASCII value of W is 87

The ASCII value of X is 88

The ASCII value of Y is 89

The ASCII value of Z is 90

7. Print ASCII value of the Small Letters (a to z).

Program:

```
#include <stdio.h>

int main()
{
    int i;
    printf("ASCII value of Small Letters (a to z) are : ");
    for ( i = 97; i < 123; i++)
    {
        printf ("\n\nThe ASCII value of %c is %d ", i, i);
    }
    return 0;
}
```

Output:

ASCII value of Small Letters (a to z) are :

The ASCII value of a is 97

The ASCII value of b is 98

The ASCII value of c is 99

The ASCII value of d is 100

The ASCII value of e is 101

The ASCII value of f is 102

The ASCII value of g is 103

The ASCII value of h is 104

The ASCII value of i is 105

The ASCII value of j is 106

The ASCII value of k is 107

The ASCII value of l is 108

The ASCII value of m is 109

The ASCII value of n is 110

The ASCII value of o is 111

The ASCII value of p is 112

The ASCII value of q is 113

The ASCII value of r is 114

The ASCII value of s is 115

The ASCII value of t is 116

The ASCII value of u is 117

The ASCII value of v is 118

The ASCII value of w is 119

The ASCII value of x is 120

The ASCII value of y is 121

The ASCII value of z is 122

8. Program to check whether number is Palindrome or Not.

Program:

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

```
int main()
```

```
{
```



```

int n, tem, rev = 0, rem;
printf("Enter Any Integer Number : ");
scanf("%d", &n);
tem = n;
while (n > 0)
{
    rem = n % 10;
    rev = rev * 10 + rem;
    n = n / 10;
}
if (tem == rev)
{
    printf("Given number is a Palindrome Number");
}
else
{
    printf("Given number is not a Palindrome Number");
}
return 0;
}

```

Output:

Enter Any Integer Number : 121

Given number is a Palindrome Number

9. Print Reverse of a Number.

Program:

```
#include <stdio.h>

int main()
{
    int number, reverse = 0, remainder;
    printf("Enter Any Integer Number : ");
    scanf("%d", &number);
    while (number != 0) {
        remainder = number % 10;
        reverse = reverse * 10 + remainder;
        number = number / 10;
    }
    printf("Reversed Number : %d", reverse);
    return 0;
}
```

Output:

Enter Any Integer Number : 45678

Reversed Number : 87654

10. Program to convert Binary Number to Decimal Number.

Program:

```
#include <stdio.h>

int main()
{
    int num, binary_num, decimal_num = 0, base = 1, rem;
    printf ("Enter a Binary Number (0s and 1s) : ");
    scanf (" %d", &num);
```

```

binary_num = num;
while ( num > 0)
{
    rem = num % 10;
    decimal_num = decimal_num + rem * base;
    num = num / 10;
    base = base * 2;
}
printf ("The Decimal Number is : %d ", decimal_num);
return 0;
}

```

Output:

Enter a Binary Number (0s and 1s) : 101

The Decimal Number is : 5

11. Find the Factorial of an Integer Number.

Program:

```

#include<stdio.h>
int main()
{
    int i,fact=1,n;
    printf("Enter a Number to find Factorial : ");
    scanf("%d",&n);
    for(i=1;i<=n;i++)
        fact=fact*i;
    printf("Factorial of %d is : %d",n,fact);
}

```

```
    return 0;  
}
```

Output:

Enter a Number to find Factorial : 6

Factorial of 6 is : 720

12. Print list of Alphabets from a to z.

Program:

```
#include <stdio.h>  
  
int main()  
{  
    char ch;  
    printf("List of Alphabets from a to z are : \n");  
    for(ch = 'a'; ch <= 'z'; ch++)  
    {  
        printf(" %c\n", ch);  
    }  
    return 0;  
}
```

Output:

List of Alphabets from a to z are :

a

b

c

d

e

f
g
h
i
j
k
l
m
n
o
p
q
r
s
t
u
v
w
x
y
z

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13. Print list of Alphabets from A to Z.

Program:

```
#include <stdio.h>  
  
int main()
```

```
{
    char ch;
    printf("List of Alphabets from A to Z are : \n");
    for(ch = 'A'; ch <= 'Z'; ch++)
    {
        printf(" %c\n", ch);
    }
    return 0;
}
```

Output:

List of Alphabets from A to Z are :

A

B

C

D

E

F

G

H

I

J

K

L

M

N

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O
P
Q
R
S
T
U
V
W
X
Y
Z

14. C program to Count Number of Digits in a Number.

Program:

```
#include <stdio.h>
int main()
{
    int number, count = 0;
    printf("Enter Any Integer Number : ");
    scanf("%d", &number);
    do
    {
        count++;
        number /= 10;
    } while(number != 0);
```

```
printf("The Number of Digits in an Integer : %d", count);  
return 0;  
}
```

Output:

Enter Any Integer Number : 10

The Number of Digits in an Integer : 2

15. Print Multiplication Table.

Program:

```
#include<stdio.h>  
int main()  
{  
int n, i;  
printf("Enter an Integer Number : ");  
scanf("%d", &n);  
for (i = 1; i <= 10; ++i)  
{  
printf("%d * %d = %d \n", n, i, n * i);  
}  
return 0;  
}
```

Output:

Enter an Integer Number : 10

10 * 1 = 10

10 * 2 = 20

10 * 3 = 30

10 * 4 = 40

10 * 5 = 50

10 * 6 = 60

10 * 7 = 70

10 * 8 = 80

10 * 9 = 90

10 * 10 = 100

16. Find First Digit in a Number.

Program:

```
#include <stdio.h>

int main()
{
    int number, first_digit;
    printf("Enter Any Integer Number : ");
    scanf("%d", &number);
    first_digit = number;
    while(first_digit >= 10)
    {
        first_digit = first_digit / 10;
    }
    printf("First Digit in a Number : %d", first_digit);
    return 0;
}
```

Output:

Enter Any Integer Number : 875

First Digit in a Number : 8

17. Calculate Sum of Digits of a Number.

Program:

```
#include <stdio.h>

int main()
{
    int number, sum=0;
    printf("Enter any Integer Number to find Sum of its Digit : ");
    scanf("%d", &number);
    while(number!=0)
    {
        sum += number % 10;
        number = number / 10;
    }
    printf("Sum of Digits : %d", sum);
    return 0;
}
```

Output:

Enter any Integer Number to find Sum of its Digit : 896

Sum of Digits : 23

18. Print ASCII value of the Special Characters.

Program:

```
#include <stdio.h>

int main()
{
```

```
int specialCh;
printf("ASCII value of Special Characters are : \n");
for (specialCh = 33; specialCh < 48; specialCh++)
{
    printf ("The ASCII value of '%c' special character is %d\n",
specialCh, specialCh);
}
for (specialCh = 58; specialCh < 65; specialCh++)
{
    printf ("The ASCII value of '%c' special character is %d\n",
specialCh, specialCh);
}
for (specialCh = 123; specialCh < 127; specialCh++)
{
    printf ("The ASCII value of '%c' special character is %d\n",
specialCh, specialCh);
}
return 0;
}
```

Output:

ASCII value of Special Characters are :

The ASCII value of '!' special character is 33

The ASCII value of '"' special character is 34

The ASCII value of '#' special character is 35

The ASCII value of '\$' special character is 36

The ASCII value of '%' special character is 37

The ASCII value of '&' special character is 38

The ASCII value of "'" special character is 39

The ASCII value of '(' special character is 40

The ASCII value of ')' special character is 41

The ASCII value of '*' special character is 42

The ASCII value of '+' special character is 43

The ASCII value of ',' special character is 44

The ASCII value of '-' special character is 45

The ASCII value of '.' special character is 46

The ASCII value of '/' special character is 47

The ASCII value of ':' special character is 58

The ASCII value of ';' special character is 59

The ASCII value of '<' special character is 60

The ASCII value of '=' special character is 61

The ASCII value of '>' special character is 62

The ASCII value of '?' special character is 63

The ASCII value of '@' special character is 64

The ASCII value of '{' special character is 123

The ASCII value of '|' special character is 124

The ASCII value of '}' special character is 125

The ASCII value of '~' special character is 126

19. Print Fibonacci Series.

Fibonacci Number: Fibonacci series, next number is the sum of previous two numbers.

Program:

```

#include<stdio.h>
int main()
{
int n1=0,n2=1,n3,i,number;
printf("Enter the number of elements : ");
scanf("%d",&number);
printf("%d %d",n1,n2);
for(i=2;i<number;++i)
{
n3=n1+n2;
printf(" %d",n3);
n1=n2;
n2=n3;
}
return 0;
}

```

Output:

Enter the number of elements : 20
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181

20. Check whether number is Perfect Number or Not.

Perfect Number: A perfect number is a number that is equal to the sum of its proper divisors.

Program:

```

# include <stdio.h>
int main()

```

```

{
int i, number, sum = 0 ;
printf("Enter Any Integer Number : ");
scanf("%d", &number) ;
for(i = 1 ; i < number ; i++)
{
if(number % i == 0)
sum = sum + i ;
}
if (sum == number)
printf("%d is a Perfect Number", number) ;
else
printf("%d is not the Perfect Number", number) ;
return 0 ;
}

```

Output:

```

Enter Any Integer Number : 0
0 is a Perfect Number

```

21. Check whether number is Prime Number or Not.

Prime Number: Prime number is a number that is greater than 1 and divided by 1 or itself. In other words, prime numbers can't be divided by other numbers than itself or 1. Zero (0) and 1 are not considered as prime numbers. Two (2) is the only one even prime number because all the numbers can be divided by 2.

Program:

```

#include<stdio.h>

```

```
int main()
{
    int n,i,m=0,flag=0;
    printf("Enter Any Integer Number : ");
    scanf("%d",&n);
    m=n/2;
    for(i=2;i<=m;i++)
    {
        if(n%i==0)
        {
            printf("Number is not Prime");
            flag=1;
            break;
        }
    }
    if(flag==0)
    printf("Number is Prime");
    return 0;
}
```

Output:

Enter Any Integer Number : 3

Number is Prime

Note:

- All the programs are compiled and executed in Dev C++ code editor and save with .c extension.

- `%.2f` is used to print fractional values only up to 2 decimal places. You can also use `%f` to print fractional values normally up to six decimal places.

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