**ASSIGNMENT-5**

1. Find the sum of first 10 natural numbers (Using for loop).

**PROGRAM:**

#include <stdio.h>

int main()

{

int i, sum=0;

for(i=1; i<=10; i++)

{

sum = sum + i;

}

printf("The sum of first 10 natural numbers are %d", sum);

return 0;

}

**OUTPUT:**

The sum of first 10 natural numbers are 55

2. Display the multiplication table of a given integer (Using while loop).

**PROGRAM:**

#include <stdio.h>

int main()

{

int i=1, num, mul=0;

printf("Enter the number:");

scanf("%d", &num);

while(i<=10)

{

mul = num \* i;

printf("%d \* %d = %d \n", num, i, mul);

i++;

}

return 0;

}

**OUTPUT:**

Enter the number:15

15 \* 1 = 15

15 \* 2 = 30

15 \* 3 = 45

15 \* 4 = 60

15 \* 5 = 75

15 \* 6 = 90

15 \* 7 = 105

15 \* 8 = 120

15 \* 9 = 135

1. \* 10 = 150
2. Display the n terms of odd natural number and their sum (Using do...while loop).

**PROGRAM:**

#include <stdio.h>

int main()

{

int i=1, n, sum=0;

printf("Enter the value of n:");

scanf("%d", &n);

do

{

if(i % 2 != 0)

sum = sum + i;

i++;

}while(i<=n);

printf("The sum of odd natural numbers are %d", sum);

return 0;

}

**OUTPUT:**

Enter the value of n:100

The sum of odd natural numbers are 2500

1. Display the pattern like right angle triangles (Using for loop).

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**PROGRAM:**

#include <stdio.h>

int main()

{

int i, j;

for(i=1; i<=4; i++)

{

for(j=1; j<=i; j++)

{

printf("\*");

}

printf("\n");

}

return 0;

}

**OUTPUT:**

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\*\*\*\*

1. Display the pattern like right angle triangles (Using while loop)

1

2 3

4 5 6

7 8 9 10

**PROGRAM:**

#include<stdio.h>

int main()

{

int i=1, j=0, k=1;

while(i<=4)

{

j=0;

while(j<i)

{

printf("%d", k);

k++;

j++;

}

printf("\n");

i++;

}

return 0;

}

**OUTPUT:**

1

23

456

78910

1. Make such a pattern like a pyramid with numbers (Using do…while loop).

1

2 3

4 5 6

7 8 9 10

**PROGRAM:**

#include <stdio.h>

int main()

{

int i=1,j=0,k=1,s=1;

do

{

s=i;

j=0;

while(s<=3)

{

printf(" ");

s++;

}

while(j<i)

{

printf("%d ",k);

k++;

j++;

}

printf("\n");

i++;

}while(i<=4);

return 0;

}

**OUTPUT:**

1

2 3

4 5 6

7 8 9 10

1. Display Pascal's triangle (Using for loop).

1

1 1

1 2 1

1 3 3 1

1 4 6 4 1

**PROGRAM:**

#include <stdio.h>

int main()

{

int c=1,k,i,j;

for(i=0;i<5;i++)

{

for(k=1;k<=5-i;k++)

printf(" ");

for(j=0;j<=i;j++)

{

if (j==0||i==0)

c=1;

else

c=c\*(i-j+1)/j;

printf("% 4d",c);

}

printf("\n");

}

return 0;

}

**OUTPUT:**

1

1 1

1 2 1

1 3 3 1

1. 4 6 4 1
2. Display the first n terms of Fibonacci series (Using for loop).

**PROGRAM:**

#include <stdio.h>

int main()

{

int a = 0,b=1,sum =0,n,i;

printf("Enter the value of n:: ");

scanf("%d",&n);

printf("%d %d ",a,b);

for(i=0;i<n;i++)

{

sum = a + b;

printf("%d ",sum);

a = b;

b = sum;

}

return 0;

}

**OUTPUT:**

Enter the value of n:: 5

0 1 1 2 3 5 8

9. Check whether a given number is a perfect number or not (Using while loop).

**PROGRAM:**

#include <stdio.h>

int main()

{

int x, d=1, s=0;

printf("Enter a number:");

scanf("%d",&x);

while(d < x)

{

if(x % d == 0)

s = s + d;

d++;

}

if(s == x)

printf(" %d Is A Perfect Number", x);

else

printf("%d Is Not A Perfect Number", x);

return 0;

}

**OUTPUT:**

Enter a number:6

1. Is A Perfect Number

10. Find the Armstrong number for a given range of number (Using while loop).

**PROGRAM:**

#include <stdio.h>

int main()

{

int x, d, c, s=0, x1;

printf("Enter a number:");

scanf("%d",&x);

x1 = x;

while(x > 0)

{

d = x % 10;

c = d \* d \* d;

s = s + c;

x = x / 10;

}

if(s == x1)

printf(" %d Is An Armstrong Number", x);

else

printf("%d Is Not An Armstrong Number", x);

return 0;

}

**OUTPUT:**

Enter a number:153

1. Is An Armstrong Number

11. Determine whether a given number is prime or not (Using do…while loop).

**PROGRAM:**

#include <stdio.h>

int main()

{

int x, d=1, c=0;

printf("Enter a number:");

scanf("%d",&x);

do

{

if(x % d == 0)

c = c + 1;

d++;

}while(d <= x);

if(c == 2)

printf(" %d Is A Prime Number", x);

else

printf("%d Is Not A Prime Number", x);

return 0;

}

**OUTPUT:**

Enter a number:5

5 Is A Prime Number

12. Display the number in reverse order (Using do…while loop).

**PROGRAM:**

#include <stdio.h>

int main()

{

int x, d, r=0, x1;

printf("Enter a number:");

scanf("%d",&x);

x1 = x;

do

{

d = x % 10;

r = r \* 10 + d;

x = x / 10;

}while(x > 0);

printf("The Reverse Of %d is %d", x1, r);

return 0;

}

**OUTPUT:**

Enter a number:115

The Reverse Of 115 is 511

13. Display the sum of the series [ 9 + 99 + 999 + 9999 ...] (Using for loop).

**PROGRAM:**

#include <stdio.h>

int main()

{

int n,i,sum=0;

long int a=9;

printf("Input the number or terms :");

scanf("%ld",&n);

for (i=1;i<=n;i++)

{

sum = sum + a;

printf("%ld ", a);

a=a\*10+9;

}

printf("\nThe sum of the series = %d \n",sum);

return 0;

}

**OUTPUT:**

Input the number or terms :4

9 99 999 9999

The sum of the series = 11106

15. Find the sum of the series [ x - x^3 + x^5 + ......] (Using do…while loop).

**PROGRAM:**

#include <stdio.h>

int main()

{

int i, n, j=1, s, a=1, b=1, sum=0;

printf("Enter series number : ");

scanf("%d", &n);

printf("Enter a number : ");

scanf("%d", &s);

for(i=0; i<n; i++)

{

a = 1;

for(j=1; j<=b; j++)

{

a = a \* s;

}

sum = sum + a;

b = b + 2;

}

printf("Sum of series is = %d", sum);

return 0;

}

**OUTPUT:**

Enter series number : 5

Enter a number : 5

Sum of series is = 2034505