***ASSIGNMENT-5***

**Q1. Find the sum of first 10 natural numbers.**

#include <stdio.h>

void main()

{

int j, sum = 0;

printf("The first 10 natural number is :\n");

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

{

sum = sum + j;

printf("%d ",j);

}

printf("\nThe Sum is : %d\n", sum);

}

**OUTPUT**

The Sum is : 55

**Q2. Display the multiplication table of a given integer.**

#include <stdio.h>

int main(){

int n,i=1;

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

scanf("%d",&n);

while(i<=10){

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

i++;

}

return 0;

}

**OUTPUT**

/tmp/UcagY9F9sB.o

Enter the value of n:4

4 x 1=4

4 x 2=8

4 x 3=12

4 x 4=16

4 x 5=20

4 x 6=24

4 x 7=28

4 x 8=32

4 x 9=36

4 x 10=40

**Q3. Display the n terms of odd natural number and their sum.**

#include <stdio.h>

int main(){

int n,i=1,sum;

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

scanf("%d",&n);

do {

if(i%2!=0){

sum=sum+i;

}

i++;

}

while(i<=n);

printf("The sum of n terms odd number is:%d\n",sum);

return 0;

}

**OUTPUT**

/tmp/UcagY9F9sB.o

Enter the value for n:20

The sum of n terms odd number is:100

**Q4. Display the pattern like right angle triangle**

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#include <stdio.h>

int main()

{

int i,j,n;

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

scanf("%d",&n);

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

{

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

{

printf("\*");

}

printf("\n");

}

return 0;

}

**OUTPUT**

/tmp/CwANBp97wc.o

Enter the value for n: 4

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**Q5. Display the pattern like right angle triangles.**

**1**

**2 3**

**4 5 6**

**7 8 9 10**

#include <stdio.h>

int main(){

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

printf("Please Enter the Number of Rows:");

scanf("%d", &n);

while ( i <= n){

j = 1;

while ( j <= i ) {

printf(" %d ",k++);

j++;

}

i++;

printf("\n");

}

return 0;

}

**OUTPUT**

/tmp/UcagY9F9sB.o

Please Enter the Number of Rows:4

1

2 3

4 5 6

7 8 9 10

**Q6. Make such a pattern like a pyramid with numbers**

**1**

**2 3**

**4 5 6**

**7 8 9 10**

#include <stdio.h>

int main(){

int i=1,j,k,n,t=1,g;

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

scanf("%d",&n);

g=n+4-1;

do

{

for(k=g;k>=1;k--){

printf(" ");

}

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

printf("%d",t++);

printf("\n");

g--;

i++;

}

while(i<=n);

return 0;

}

**OUTPUT**

/tmp/UcagY9F9sB.o

Enter the value for n:4

1

23

456

78910

**Q7. Display Pascal’s triangle**

**1**

**1 1**

**1 2 1**

**1 3 3 1**

**1 4 6 4 1**

#include <stdio.h>

int main(){

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

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

scanf("%d",&n);

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

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

printf(" ");

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

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

k=1;

else

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

printf("%4d",k);

}

printf("\n");

}

return 0;

}

**OUTPUT**

/tmp/UcagY9F9sB.o

Enter the value for n:5

1

1 1

1 2 1

1 3 3 1

1 4 6 4 1

**Q8. Display the first n terms of Fibonacci series**

#include <stdio.h>

int main() {

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

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

scanf("%d", &n);

printf("Fibonacci Series:");

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

printf("%d, ",a);

temp=a+b;

a=b;

b=temp;

}

return 0;

}

**OUTPUT**

/tmp/CwANBp97wc.o

Enter the value for n:20

Fibonacci Series:0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987, 1597, 2584, 4181,

**Q9. Check whether a given number is a perfect number or not.**

#include <stdio.h>

int main() {

int i=1,n,sum=0;

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

scanf("%d",&n);

while(i<=n/2) {

if(n%i==0) {

sum=sum+i;

}

i++;

}

if(sum==n)

printf("%d is PERFECT NUMBER",n);

else

printf("%d is NOT PERFECT NUMBER",n);

return 0;

}

**OUTPUT**

/tmp/CwANBp97wc.o

Enter the value for n:1

is NOT PERFECT NUMBER

**Q10. Find the Armstrong number for a given range of number.**

#include <stdio.h>

#include <math.h>

int main() {

int a,b,n,on,rem,c=0;

double res=0.0;

printf("Enter 2 number:");

scanf("%d %d", &a,&b);

printf("Amstrong number between %d to %d are:",a,b);

for(n=a+1;n<b;++n)

{

on=n;

while(on!=0)

{

on=on/10;

++c;

}

on=n;

while(on!=0)

{

rem=on % 10;

res=res+ pow(rem, c);

on=on/10;

}

if(res==n)

printf("%d ",n);

c=0;

res=0;

}

return 0;

}

**OUTPUT**

/tmp/CwANBp97wc.o

Enter 2 number: 500

5000

Amstrong number between 500 to 5000 are:1634

**Q11. Determine whether a given number is prime or not.**

#include <stdio.h>

int main() {

int n,i=2,flag=0;

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

scanf("%d",&n);

while(i<=n/2) {

if(n%i==0) {

flag=1;

break;

}

++i;

}

if(n==1) {

printf("1 is neither prime nor composite");

}

else

{

if(flag==0)

printf("%d is a prime number",n);

else

printf("%d is not a prime number",n);

}

return 0;

}

**OUTPUT**

/tmp/CwANBp97wc.o

Enter the value for n:47

is a prime number

**Q12. Display the number in reverse order**

#include <stdio.h>

int main() {

int n,r=0;

printf("Enter the number:");

scanf("%d",&n);

do {

r=r\*10;

r=r+n%10;

n=n/10;

}

while(n!=0);

printf("Reverse of the number is:%d\n",r);

return 0;

}

**OUTPUT**

/tmp/CwANBp97wc.o

Enter the number:2254

Reverse of the number is:4522

**Q13. Display the sum of the series [9 + 99 + 999 + 9999..]**

#include <stdio.h>

void main()

{

long int n,i,t=9;

int sum=0;

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

scanf("%d", &n);

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

{

sum=sum+t;

printf("%ld ",t);

t=t\*10+9;

}

printf("\nsum of the series:%d\n",sum);

}

**OUTPUT**

/tmp/CwANBp97wc.o

Enter the value of n:4

9 99 999 9999

sum of the series:11106

**Q14. find the sum of the series{1-X^2/2!+X^4/4!-...]**

#include <stdio.h>

void main()

{

float x,sum,t,d;

int i=1,n;

printf("Enter the value for x:");

scanf("%f", &x);

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

scanf("%d",&n);

sum=1;

t=1;

while(i<n)

{

d=(2\*i)\*(2\*i-1);

t=-t\*x\*x/d;

sum=sum+t;

i++;

}

printf("the sum= %f\n Value of n= %d\n Value of X=%.2f\n",sum,n,x);

}

**OUTPUT**

/tmp/CwANBp97wc.o

Enter the value for x:4

Enter the value for n:5

the sum= -0.396825

Value of n= 5

Value of X=4.00

**Q15. find the sum of the series [x-x^3+x^5+...]**

#include <stdio.h>

#include <math.h>

void main(){

int x,sum,ctr,i=1,n,m,mm,nn;

printf("Enter the value for x:");

scanf("%d",&x);

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

scanf("%d",&n);

sum=x;

m=-1;

printf("The value of the series:\n");

printf("%d\n",x);

do

{

ctr=(2\*i+1);

mm=pow(x,ctr);

nn=mm\*m;

printf("%d\n",nn);

sum=sum+nn;

m=m\*(-1);

i++;

}

while(i<n);

printf("\n The sum=%d\n",sum);

}

**OUTPUT**

/tmp/CwANBp97wc.o

Enter the value for x:4

Enter the value for n:5

The value of the series:

4

-64

1024

-16384

262144

The sum=246724