**ASSIGNMENT -5**

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

**#include <stdio.h>**

**int main()**

**{**

**// Write C code here**

**int sum=0,i;**

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

**{**

**sum=sum+i;**

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

**}**

**printf("sum of natural numbers:%d",sum);**

**return 0;**

**}**

**Output:-**

**1**

**2**

**3**

**4**

**5**

**6**

**7**

**8**

**9**

**10**

**sum of natural numbers:55**

**2. Display the multiplication of a given integer(using while loop)**

**#include <stdio.h>**

**int main() {**

**// Write C code here**

**int num,i=1,tab;**

**printf("enter a number: ");**

**scanf("%d",&num);**

**while(i<=10)**

**{**

**tab=num\*i;**

**printf("%d\n",tab);**

**i++;**

**}**

**return 0;**

**}**

**Output:-**

**enter a number: 4**

**4**

**8**

**12**

**16**

**20**

**24**

**28**

**32**

**36**

**40**

**3. Display the n terms of odd natural number and their sum(using do..while loop)**

**#include<stdio.h>**

**int main()**

**{**

**int num,sum=0,i;**

**printf("enter the number: ");**

**scanf("%d",&num);**

**i=1;**

**do**

**{**

**printf("%d\n",2\*i-1);**

**sum=sum+2\*i-1;**

**i++;**

**}**

**while(i<=num);**

**printf("the sum of odd natural number is %d",sum);**

**return 0;**

**}**

**Output:-**

**enter the number: 5**

**1**

**3**

**5**

**7**

**9**

**the sum of odd natural number is 25**

**4. Display the pattern like right angle triangle(using for loop)**

**\***

**\* \***

**\* \* \***

#include <stdio.h>

int main()

{

int num, i, j;

printf("Enter number for row: ");

scanf("%d", &num);

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

{

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

printf("\*");

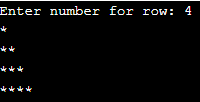
printf("\n");

}

return 0;

}

Output:-



5. Display the pattern like right angle triangle (using while loop)

1

2 3

4 5 6

7 8 9 10

#include <stdio.h>

int main()

{

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

printf("enter the number of rows: ");

scanf("%d",&n);

while(i<=n)

{

j=1;

while(j<=i)

{

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

j++;

}

i++;

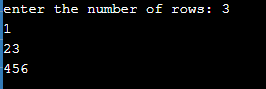
printf("\n");

}

return 0;

}

Output:-



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

**#include <stdio.h>**

**int main()**

**{**

**int i,j,space,row,k,t=1;**

**printf("enter the number of rows : ");**

**scanf("%d",&row);**

**space=row+4-1;**

**for(i=1;i<=row;i++)**

**{**

**for(k=space;k>=1;k--)**

**{**

**printf(" ");**

**}**

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

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

**printf("\n");**

**space--;**

**}**

**return 0;**

**}**

**Output:-**

**7. Display Pascal's triangle. (Using for loop)**

**#include <stdio.h>**

**void main()**

**{**

**int no\_row,k=1,sec,i,j;**

**printf("Input number of rows: ");**

**scanf("%d",&no\_row);**

**for(i=0;i<no\_row;i++)**

**{**

**for(sec=1;sec<=no\_row-i;sec++)**

**printf(" ");**

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

**{**

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

**k=1;**

**else**

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

**printf("% 4d",k);**

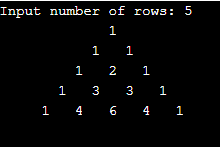
**}**

**printf("\n");**

**}**

**}**

**Output:-**

****

**8. Display the first n terms of Fibonacci series. (Using for loop)**

**#include <stdio.h>**

**int main()**

**{**

**int i, num, term1 = 0, term2 = 1, nextTerm;**

**printf("Enter the number of terms: ");**

**scanf("%d", &num);**

**printf("Fibonacci Series: ");**

**for (i = 1; i <= num; ++i) {**

**printf("%d, ", term1);**

**nextTerm = term1 + term2;**

**term1 = term2;**

**term2 = nextTerm;**

**}**

**return 0;**

**}**

**Output:-**

**fib.png**

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

**#include<stdio.h>**

**int main()**

**{**

**int num,i=1,sum;**

**printf("Enter a number: ");**

**scanf("%d",&num);**

**while(i<num)**

**{**

**if(num%i==0)**

**sum=sum+i;**

**i++;**

**}**

**if(sum==num)**

**printf("%d is a perfect number",i);**

**else**

**printf("%d is not a perfect number",i);**

**return 0;**

**}**

**Output:-**

**per.png**

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

**#include <stdio.h>**

**int main()**

**{**

**int num, originalNum, rem, result;**

**printf("Enter the number: ");**

**scanf("%d", &num);**

**originalNum = num;**

**while (originalNum != 0)**

**{**

**rem = originalNum % 10;**

**result += rem\* rem\* rem;**

**originalNum /= 10;**

**}**

**if (result == num)**

**printf("%d is an Armstrong number.", num);**

**else**

**printf("%d is not an Armstrong number.", num);**

**return 0;**

**}**

**Output:-**

**arm.png**

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

**#include <stdio.h>**

**int main()**

**{**

**int num,i,count=0;**

**printf("Enter the number: ");**

**scanf("%d",&num);**

**i=2;**

**do{**

**if(num%i==0)**

**{**

**count=1;**

**break;**

**}**

**i++;**

**}while(i<=num/2);**

**if(count==0){**

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

**}**

**else{**

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

**}**

**return 0;**

**}**

**Output:-**

**prime.png**

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

**#include <stdio.h>**

**int main()**

**{**

**int n, rev = 0, remainder;**

**printf("Enter an integer: ");**

**scanf("%d", &n);**

**do{**

**remainder = n % 10;**

**rev = rev \* 10 + remainder;**

**n /= 10;**

**}**

**while (n != 0);**

**printf("Reversed number = %d", rev);**

**return 0;**

**}**

**Output:-**

**reve.png**

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

**#include <stdio.h>**

**int main()**

**{**

**long int num,i,term=9;**

**int sum =0;**

**printf("Input the terms :");**

**scanf("%ld",&num);**

**for (i=1;i<=num;i++)**

**{**

**sum +=term;**

**printf("%ld ",term);**

**term=term\*10+9;**

**}**

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

**return 0;**

**}**

**Output:-**

**99.png**

**16. Display the n terms of even natural number and their sum.**

**#include <stdio.h>**

**int main()**

**{**

**int i,num,sum;**

**printf("Enter the number of terms : ");**

**scanf("%d",&num);**

**printf("\n even numbers are : ");**

**for(i=1;i<=num;i++)**

**{**

**printf("%d",2\*i);**

**sum+=2\*i;**

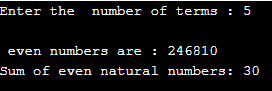
**}**

**printf("\nSum of even natural numbers: %d \n",sum);**

**return 0;**

**}**

**Output:-**

****

**17.** **Display n terms of natural number and their sum.**

**#include <stdio.h>**

**int main()**

**{**

**int i,num,sum;**

**printf("enter the number of terms : ");**

**scanf("%d",&num);**

**for(i=1;i<=num;i++)**

**{**

**printf("%d ",i);**

**sum+=i;**

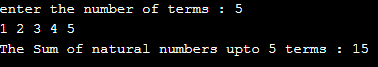
**}**

**printf("\nThe Sum of natural numbers upto %d terms : %d \n",num,sum);**

**return 0;**

**}**

**Output:-**

****

**18. Display the pattern like a diamond.**

**#include <stdio.h>**

**int main()**

**{**

**int i,j,row;**

**printf("enter number of rows :");**

**scanf("%d",&row);**

**for(i=0;i<=row;i++)**

**{**

**for(j=1;j<=row-i;j++)**

**printf(" ");**

**for(j=1;j<=2\*i-1;j++)**

**printf("\*");**

**printf("\n");**

**}**

**for(i=row-1;i>=1;i--)**

**{**

**for(j=1;j<=row-i;j++)**

**printf(" ");**

**for(j=1;j<=2\*i-1;j++)**

**printf("\*");**

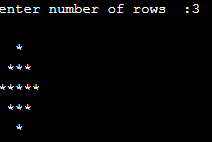
**printf("\n");**

**}**

**return 0;**

**}**

**Output:-**

****

**19. Display the pattern like right angle triangle with a number.**

**#include <stdio.h>**

**int main()**

**{**

**int i,j,rows;**

**printf("Input number of rows : ");**

**scanf("%d",&rows);**

**for(i=1;i<=rows;i++)**

**{**

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

**printf("%d",i);**

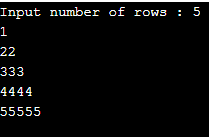
**printf("\n");**

**}**

**return 0;**

**}**

**Output:-**

****

**20. calculate the factorial of a given number.**

**#include<stdio.h>**

**int main()**

**{**

**int i,fact=1,num;**

**printf("Enter a number: ");**

**scanf("%d",&num);**

**for(i=1;i<=num;i++)**

**fact=fact\*i;**

**printf("Factorial of %d is: %d",num,fact);**

**return 0;**

**}**

**Output:-**

**facto.png**

**21. Find the perfect numbers within a given number of range.**

**#include <stdio.h>**

**int main()**

**{**

**int i, j, low, up, sum;**

**/\* Input upper limit to print perfect number \*/**

**printf("Enter upper limit: ");**

**scanf("%d", &up);**

**printf("Enter lower limit: ");**

**scanf("%d", &low);**

**printf("All Perfect numbers between %d to %d:\n",low,up);**

**for(i=1; i<=up; i++)**

**{**

**sum = 0;**

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

**{**

**if(i % j == 0)**

**{**

**sum += j;**

**}**

**}**

**if(sum == i)**

**{**

**printf("%d, ", i);**

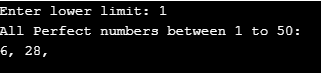
**}**

**}**

**return 0;**

**}**

**Output:-**

****

**22. Check whether a given number is an armstrong number or not.**

**#include <stdio.h>**

**void main()**

**{**

**int num,r,sum,temp;**

**printf("enter the number: ");**

**scanf("%d",&num);**

**for(temp=num;num!=0;num=num/10)**

**{**

**r=num % 10;**

**sum=sum+(r\*r\*r);**

**}**

**if(sum==temp)**

**printf("%d is an Armstrong number\n",temp);**

**else**

**printf("%d is not an Armstrong number\n",temp);**

**}**

**Output:-**

**ar.png**

**23. Find the prime numbers within a range of numbers.**

**#include <stdio.h>**

**void main(){**

**int num,i,count,first,last;**

**printf("Input starting number of range: ");**

**scanf("%d",&first);**

**printf("Input ending number of range : ");**

**scanf("%d",&last);**

**printf("The prime numbers between %d and %d are : \n",first,last);**

**for(num = first;num<=last;num++)**

**{**

**count = 0;**

**for(i=2;i<=num/2;i++)**

**{**

**if(num%i==0){**

**count++;**

**break;**

**}**

**}**

**if(count==0 && num!= 1)**

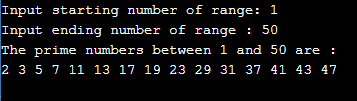
**printf("%d ",num);**

**}**

**printf("\n");**

**}**

**Output:-**

****

**24. Check whether a number is a palindrome or not.**

**#include <stdio.h>**

**int main()**

**{**

**int num, rev=0, rem,temp;**

**printf("Enter the number: ");**

**scanf("%d", &num);**

**temp=num;**

**while(temp!=0)**

**{**

**rem=temp%10;**

**rev=rev\*10+rem;**

**temp/=10;**

**}**

**if(rev==num)**

**printf("%d is a palindrome number",num);**

**else**

**printf("%d is not a palindrome number",num);**

**return 0;**

**}**

**Output:-**

**pal.png**

**25. Find HCF (Highest Common Factor) of two numbers.**

**#include <stdio.h>**

**int main()**

**{**

**int i, num1, num2, j, hcf=1;**

**printf("Input 1st number: ");**

**scanf("%d", &num1);**

**printf("Input 2nd number: ");**

**scanf("%d", &num2);**

**j = (num1<num2) ? num1 : num2;**

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

**{**

**if(num1%i==0 && num2%i==0)**

**{**

**hcf = i;**

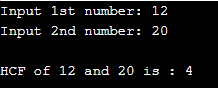
**}**

**}**

**printf("\nHCF of %d and %d is : %d\n", num1, num2, hcf);**

**}**

**Output:-**

****

**26. Find LCM of any two numbers using HCF.**

**#include <stdio.h>**

**int main()**

**{**

**int i,j, num1, num2,hcf=1,lcm;**

**printf("enter 1st number: ");**

**scanf("%d", &num1);**

**printf("enter 2nd number: ");**

**scanf("%d", &num2);**

**j = (num1<num2) ? num1 : num2;**

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

**{**

**if(num1%i==0 && num2%i==0)**

**{**

**hcf = i;**

**}**

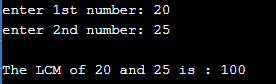
**}**

**lcm=(num1\*num2)/hcf;**

**printf("\nThe LCM of %d and %d is : %d\n", num1, num2, lcm);**

**}**

**Output:-**

****

**27. Check Whether a Number can be Express as Sum of Two Prime Numbers.**

**#include <stdio.h>**

**#include <stdlib.h>**

**#include <math.h>**

**int main()**

**{**

**int num,i,j,temp1,temp2,ctr=0;**

**printf("input the number:\n");**

**scanf("%d",&num);**

**for(i=2;i<=num/2;i++){**

**temp1=i;**

**temp2=num-i;**

**for(j=2;j<=i/2;j++){**

**if(i%j==0){ctr++;break;}**

**}**

**if(ctr==0){**

**for(j=2;j<=(num-i)/2;j++){**

**if((num-i)%j==0){ctr++;break;}**

**}**

**if(ctr==0) printf("%d can be written as %d + %d.\n ",num,i,num-i);**

**}**

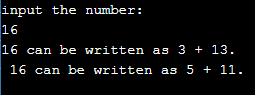
**ctr=0;**

**}**

**return 0;**

**}**

**Output:-**

****

**28. Find the number and sum of all integer between 100 and 200 which are divisible by 9.**

**#include <stdio.h>**

**int main()**

**{**

**int i, sum=0;**

**for(i=100;i<=200;i++)**

**{**

**if(i%9==0)**

**{**

**printf(" %d",i);**

**sum+=i;**

**}**

**}**

**printf("\nsum : %d \n",sum);**

**}**

**Output:-**

**j.png**