**C-PROGRAM NEP LAB (KUD)**

1. **Find the area of a circle and area of a triangle given three sides.**

#include<stdio.h>

#include<conio.h>

#include<math.h>

void main(){

int a,b,c,r;

float s,areac,areat;

printf("Enter the radius\n");

scanf("%d",&r);

areac=3.142\*r\*r;

printf("The areac is=%0.2f\n",areac);

printf("Ente the sides of triangle\n");

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

s=(a+b+c)/2;

areat=sqrt(s\*(s-a)\*(s-b)\*(s-c));

printf("The areat is = %0.2f\n",areat);

getch();

}

1. **Largest of three numbers.**

#include<stdio.h>

#include<conio.h>

void main(){

int a,b,c;

printf("Enter 3 numbers\n ");

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

if(a>b && a>c)

printf("a = %d is largest",a);

else if (b>c)

printf("b = %d is largest",b);

else

printf("c = %d is largest",c);

getch();

}

1. **Reversing the digits of an integer.**

#include<stdio.h>

#include<conio.h>

void main(){

int n1,temp,rev=0;

printf("Enter the number\n");

scanf("%d",&n1);

while (n1!=0)

{

temp=n1%10;

rev=rev\*10+temp;

n1=n1/10;

}

printf("Reversing the digits of an integer = %d",rev);

getch();

}

1. **GCD of two integers.**

#include<stdio.h>

#include<conio.h>

void main(){

int n1,n2,r,lcm,gcd,p,q;

printf("Enter two integers\n");

scanf("%d%d",&n1,&n2);

p=n1;

q=n2;

while (n2 !=0)

{

r=n1%n2;

n1=n2;

n2=r;

}

gcd=n1;

lcm=(p\*q/gcd);

printf("gcd=%d\n",gcd);

printf("lcm =%d\n",lcm);

getch();

}

1. **Generating prime numbers.**

#include<stdio.h>

#include<conio.h>

void main(){

int i,j,n;

printf("Enter the number till which you want prime number\n");

scanf("%d",&n);

printf("Prime munbers are\n");

for ( i = 2; i <=n; i++)

{

int c=0;

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

{

if (i%j==0)

{

c++;

}

}

if (c==2)

{

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

}

}

getch();

}

1. **Computing nth Fibonacci numbers.**

#include<stdio.h>

#include<conio.h>

void main(){

int n,t1=0,t2=1,next=0,i;

printf("Enter the n value\n");

scanf("%d",&n);

if(n==0||n==1){

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

}

else

{

next=t1+t2;

}

for ( i = 3; i <=n; i++)

{

t1=t2;

t2=next;

next=t1+t2;

}

printf("The nth fibo is %d\n",next);

getch();

}

1. **Finding Even and Odd numbers.**

#include<stdio.h>

#include<conio.h>

void main(){

int n;

printf("Enter the number\n");

scanf("%d",&n);

if(n%2==0)

printf("Ther given number is even = %d\n",n);

else

printf("The given number is add = %d\n",n);

getch();

}

1. **Exchanging the values of two variables.**
2. **With a 3rd variable**

#include<stdio.h>

#include<conio.h>

void main(){

int a,b,temp;

printf("Enter two numbers\n");

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

printf("The two values before swap a=%d and b=%d\n",a,b);

temp=a;

a=b;

b=temp;

printf("The two values after swap a=%d and b=%d\n",a,b);

getch();

}

**B) Without a 3rd variable**

#include<stdio.h>

#include<conio.h>

void main(){

int a,b;

printf("Enter two numbers\n");

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

printf("The two values before swap a=%d and b=%d\n",a,b);

a=a+b;

b=a-b;

a=a-b;

printf("The two values after swap a=%d and b=%d\n",a,b);

getch();

}

1. **Counting: Print number from 100 to 200 which are divisible by 7 and display their sum and count using for loop.**

#include<stdio.h>

#include<conio.h>

void main(){

int i,sum=0,count=0;

for(i=105;i<=200;i+=7)

{

sum+=i;

count++;

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

}

printf("Sum of numbers is %d\n",sum);

printf("Count of numbers is %d\n",count);

getch();

}

1. **Summation of set of Numbers.**

#include<stdio.h>

#include<conio.h>

void main(){

int sum=0,num;

printf("Enter the num\n");

scanf("%d",&num);

for(int i=0;i<=num;i++)

sum+=i;

printf("summation of number is %d\n",sum);

getch();

}

1. **Factorial Computation.**

#include<stdio.h>

#include<conio.h>

void main(){

int fact=1,n;

printf("Enter a number\n");

scanf("%d",&n);

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

fact=fact\*i;

}

printf("Factorial of %d is %d \n",n,fact);

getch();

}

1. **Generation of Fibonacci sequence.**
2. **Array Order Reversal.**

#include<stdio.h>

#include<conio.h>

void main(){

int num,array[50],array2[50],i,j;

printf("Enter no of elements in array\n");

scanf("%d",&num);

printf("Enter the array elements\n");

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

scanf("%d",&array[i]);

for(i=num-1,j=0;i>=0;i--,j++)

array2[j]=array[i];

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

array[i]=array2[i];

printf("The reversal array\n");

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

printf("%d\n",array[i]);

getch();

}

1. **Finding the Maximum Number in a Set.**

#include<stdio.h>

#include<conio.h>

void main(){

int n;

double array[100];

printf("Enter the number between 1-100\n");

scanf("%d",&n);

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

{

printf("Enter no %d\n",i+1);

scanf("%lf",&array[i]);

}

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

if(array[0]<array[i])

array[0]=array[i];

printf("largest element =%2lf",array[0]);

getch();

}

1. **Removal of Duplicates from an Ordered Array.**

#include<stdio.h>

#include<conio.h>

void main()

{

int arr[10],i,j,k,num;

printf("Enter the array size\n");

scanf("%d",&num);

printf("Enter the elements \n");

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

{

scanf("%d",&arr[i]);

}

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

{

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

{

if(arr[i]==arr[j])

{

for(k=j;k<num;k++)

{

arr[k]=arr[k+1];

}

num--;

j--;

}

}

}

printf("final array after removing duplicate :\n");

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

{

printf("%d\n",arr[i]);

}

getch();

}

1. **Partitioning an Array.**

#include<stdio.h>

#include<conio.h>

void main()

{

int num[30];

int i,n,a,j;

printf("enter a value\n");

scanf("%d",&n);

printf("enter a num\n");

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

scanf("%d",&num[i]);}

printf("enter position of the element split array");

scanf("%d",&a);

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

{

num[n]=num[0];

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

{

num[j]=num[j+1];

}

}

printf("the resultent array\n");

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

{

printf("%d\n",num[i]);

}

getch();

}

1. **Finding the Smallest Element.**

#include<stdio.h>

#include<stdlib.h>

#include<conio.h>

void main()

{

int i,j=0,n,temp;

printf("Enter the num of elements in a array\n");

scanf("%d",&n);

int ar[n];

printf("Enter the array elements\n");

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

scanf("%d",&ar[i]);

temp=ar[j];

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

{

if(ar[j]<ar[j+1])

{

if(temp>ar[j])

temp=ar[j];

}

}

printf("The smallest element is %d",temp);

getch();

}

1. **Read N (minimum 5) students marks and find number of students passed and fail depending on the marks.**

#include<stdio.h>

#include<conio.h>

void main(){

int i,j,marks[5],perc[5],total[5],roll[5];

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

{

printf("Enter student %d roll num\n",i+1);

scanf("%d",&roll[i]);

for(j=0;j<3;j++)

{

printf("Enter subject %d marks\n",j+1);

scanf("%d",&marks[j]);

total[i]+=marks[j];

}

perc[i]=(total[i]/5);

}

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

{

if(perc[i]<40)

{

printf("Total perecntage of %d is %d \t",i+1,perc[i]);

printf("Result= FAILED\n");

}

else

{

printf("Total perecntage of %d is %d \t",i+1,perc[i]);

printf("Result= PASSED\n");

}

}

getch();

}

1. **Count the number of vowels, consonants and special characters in a given sentence.**

#include<stdio.h>

#include<conio.h>

void main()

{

char line[150];

int i=0;

int vowels,constants,spechar;

vowels=constants=spechar=0;

printf("Enter a line of string containing of vowels constants and special charecters\n");

gets(line);

for ( i = 0; line[i]!='\0'; i++)

{

if(line[i]>='a'&&line[i]<='z'||line[i]>='A'&&line[i]<='Z')

constants++;

if (line[i]=='a'||line[i]=='e'||line[i]=='i'||line[i]=='o'||line[i]=='u'||line[i]=='A'||line[i]=='E'||line[i]=='I'||line[i]=='O'||line[i]=='U')

vowels++;

if (line[i]=='!'||line[i]=='@'||line[i]=='#'||line[i]=='$'||line[i]=='%'||line[i]=='^'||line[i]=='&'||line[i]=='\*'||line[i]=='`'||line[i]=='.')

spechar++;

}

printf("The total no of charecter you have entered in the string=%d\n",i);

printf("The total no of vowels=%d\n",vowels);

printf("The total no of constants=%d\n",constants);

printf("The total no of special charecters=%d\n",spechar);

getch();

}

1. **To find the addition and subtraction of two matrices using function.**

#include<stdio.h>

#include<conio.h>

void main()

{

int m,n,i,j;

int a[10][10],b[10][10];

int sum[10][10],diff[10][10];

printf("Enter no of rows of the matrix\n");

scanf("%d",&m);

printf("Enter the no of columns of the matrix\n");

scanf("%d",&n);

printf("Enter the elements of Matrix A\n");

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

{

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

{

scanf("%d",&a[i][j]);

}

}

printf("Enter the elemnts of the matrix B\n");

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

{

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

{

scanf("%d",&b[i][j]);

}

}

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

{

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

{

sum[i][j]=a[i][j]+b[i][j];

diff[i][j]=a[i][j]-b[i][j];

}

}

printf("The sum of the matrix A & B is\n");

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

{

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

{

printf("%d",sum[i][j]);

printf("\n");

}

}

printf("The difference of the matrix A & B is\n");

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

{

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

{

printf("%d",diff[i][j]);

printf("\n");

}

}

getch();

}