1.Write a C++ program to print the given number in reverse order. Use functions with return type and without return type for reversing the number

#include<iostream>

using namespace std;

int rev(int a)

{

int rem,rev=0;

while(a!=0)

{

rem=a%10;

rev=rev\*10+rem;

a/=10;

}

return rev;

}

int main()

{

int n;

cout<<"\nenter the number to reverse : ";

cin>>n;

cout<<”\nreversed number : ”<<rev(n);

return 0;

}

Output:

enter the number to reverse : 1231

reversed number : 1321

Reverse a number without return type :

#include<iostream>

using namespace std;

void rev(int a)

{

int rem,rev=0;

while(a!=0)

{

rem=a%10;

rev=rev\*10+rem;

a/=10;

}

Cout<<”\n reversed number : ”<<rev;

}

int main()

{

int n;

cout<<"\nenter the number to reverse : ";

cin>>n;

rev(n);

return 0;

}

Output:

enter the number to reverse : 1231

reversed number : 1321

2.Write a program in C++ to calculate the area of circle, rectangle, square and triangle using function overloading.

#include<iostream>

using namespace std;

void area(float r)

{

cout<<"\narea of circle : "<<3.14\*r\*r;

}

void area(int a)

{

cout<<"\narea of square : "<<a\*a;

}

void area(float l,float b)

{

cout<<"\narea of rectangle : "<<l\*b;

}

void area(int b1,int h)

{

cout<<"\narea of triangle : "<<0.5\*b1\*h;

}

int main()

{

float r=2.1,l=2.2,b=3.4;

area(r);

area(4);

area(l,b);

area(5,3);

return 0;

}

Output:

area of circle : 13.8474

area of square : 16

area of rectangle : 7.48

area of triangle : 7.5

3.Write a C++ program to perform different arithmetic operation such as addition,subtraction, division, modulus and multiplication using inline function.

#include<iostream>

using namespace std;

inline void add(int a,int b)

{

cout<<"\naddition : "<<a+b;

}

inline void sub(int a,int b)

{

cout<<"\nsubtraction : "<<a-b;

}

inline void mul(int a,int b)

{

cout<<"\nmultilpication : "<<a\*b;

}

inline void div(int a,int b)

{

cout<<"\ndivision : "<<a/b;

}

inline void mod(int a,int b)

{

cout<<"\nmodulus : "<<a%b;

}

int main()

{

int a,b;

cout<<"\nenter the num 1 :";

cin>>a;

cout<<"\nenter the num 2 :";

cin>>b;

add(a,b);

sub(a,b);

mul(a,b);

div(a,b);

mod(a,b);

return 0;

}

Output:

enter the num 1 :10

enter the num 2 :5

addition : 15

subtraction : 5

multilpication : 50

division : 2

modulus : 0

4.write a c++ program to swap two number using call by value mechanism.

#include<iostream>

using namespace std;

void swap(int a,int b){

int c;

c=a;

a=b;

b=c;

cout<<a<<" "<<b;

}

int main()

{

int p,q;

cout<<"\nenter the num 1 : ";

cin>>p;

cout<<"\nenter the num 2 : ";

cin>>q;

swap(p,q);

return 0;

}

5.create a class vector with sigle dimensional array and size as data members .use friend function to read and print the member values.

#include<iostream>

using namespace std;

class vector

{

int x,a[100];

public:

vector(int n){

x=n;

}

friend int vec(vector &obj1);

};

int vec(vector &obj1){

int i,j;

for(i=0;i<obj1.x;i++){

cout<<"\nenter the element "<<i+1<<" in an array : ";

cin>>obj1.a[i];

}

for(i=0;i<obj1.x;i++){

cout<<obj1.a[i]<<" ";

}

return 0;

}

int main()

{

int n1,a1;

cout<<"\nenter the no of elements in an array : ";

cin>>n1;

vector v1(n1);

a1=vec(v1);

return 0;

}

7. write a program to find wheather the person is eligible for vote or not.and if that particular person is not eligible , then print how many years left to be eligible .

#include<iostream>

using namespace std;

int main()

{

int age;

cout<<"\nenter your age : ";

cin>>age;

if(age>=18)

cout<<"\nyou are eligible to vote!!!";

else if(age<18)

cout<<"\nyou are allowed to vote after "<<18-age;

}

Output:

enter your age : 12

you are allowed to vote after 6

7. write a program to print right triangle star pattern

#include<iostream>

using namespace std;

int main()

{

int i,j,r,k;

cout<<"\nenter the no of rows : ";

cin>>r;

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

for(j=r;j>=i;j--){

cout<<" ";

}

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

cout<<"\*";

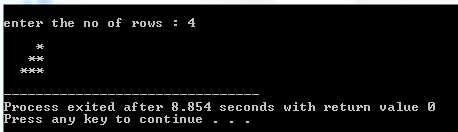
}

cout<<"\n";

}

return 0;

}



8.write a program to convert decimal to binary and octal ?

#include<iostream>

using namespace std;

void conversion(int n,intoper)

{

int c,rem,i=0,a[10];

while(n>=1){

rem=n%oper;

a[i]=rem;

n/=oper;

i++;

}

if(oper==2){

cout<<"\nbinary number : ";

goto f;

}

else{

cout<<"\noctal number : ";

goto f;

}

f: for(c=i-1;c>=0;c--){

cout<<a[c];

}

}

int main()

{

int a;

cout<<"\nenter the decimal number : ";

cin>>a;

conversion(a,2);

conversion(a,8);

return 0;

}

Output:

enter the decimal number : 20

binary number : 10100

octal number : 24

9. Write a program using function to calculate the simple interest. Suppose the customer is a senior citizen. He is being offered 12 percent rate of interest; for all other customers, the ROI is 10 percent.

#include<iostream>

using namespace std;

void si(int a,intb,int c)

{

cout<<"\ninterest : "<<(a\*b\*c)/100;

}

int main()

{

int p,n,r,s;

cout<<"\nenter the principle amt : ";

cin>>p;

cout<<"\nenter the no of years : ";

cin>>n;

cout<<"\nare you senior citizen \n1.yes \n2.no \nenter your choice : ";

cin>>s;

if(s==1)

si(p,n,12);

else

si(p,n,10);

}

output:enter the principle amt : 200000

enter the no of years : 3

are you senior citizen

1.yes

2.no

enter your choice : 2

interest : 60000

10. Write a program to print hollow square and full square symbol pattern? Get the different symbol for hollow square and full square as input from the user.

#include<iostream>

using namespace std;

int main()

{

int r,i,j,k;

char sym ;

cout<<"\nenter the no of rows : ";

cin>>r;

cout<<"\nenter the symbol to show : ";

cin>>sym;

cout<<"\n";

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

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

if(i==0 || i==r-1){

cout<<sym<<" ";

}

else if(i>0 &&i<r-1){

if(j==0 || j==r-1){

cout<<sym<<" ";

}

else

cout<<" ";

}

}

cout<<"\n";

}

}

Output :

enter the no of rows : 10

enter the symbol to show : #

# # # # # # # # # #

# #

# #

# #

# #

# #

# #

# #

# #

# # # # # # # # # #

Program to print full square :

#include<iostream>

using namespace std;

int main()

{

int r,i,j,k;

char sym ;

cout<<"\nenter the no of rows : ";

cin>>r;

cout<<"\nenter the symbol to show : ";

cin>>sym;

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

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

cout<<sym<<" ";

}

cout<<"\n ";

}

return 0;

}

12. Write a program to enter the marks of a student in four subjects. Then calculate the total and aggregate, display the grade obtained by the student. If the student scores an aggregate greater than 75%, then the grade is Distinction. If aggregate is 60>= and <75, then the grade is First Division. If aggregate is 50 >= and <60, then the grade is Second Division. If aggregate is 40>= and <50, then the grade is Third Division. Else the grade is Fail.

#include <iostream>

using namespace std;

int main(){

floata,b,c,d,tot;

float agg;

cout<<"Enter the marks in python ";

cin>>a;

cout<<"Enter the marks in c programming:";

cin>>b;

cout<<"Enter the marks in Mathematics:";

cin>>c;

cout<<"Enter the marks in Physics:";

cin>>d;

tot=a+b+c+d;

cout<<"TOTAL : " << tot;

cout<<"\n";

agg=tot/4;

cout<<"AGGREGATE : " <<agg;

cout<<"\n";

if (agg>=75){

cout<<"DISTINCTION";

}

else if (agg>=60 &&agg<75){

cout<<"FIRST DIVISION";

}

else if (agg>= 50 &&agg<60){

cout<<"SECOND DIVISION";

}

else if (agg>= 40 &&agg<50){

cout<<"THIRD DIVISION";

}

else if (agg< 40){

cout<<"FAIL";

}

else {

cout<<"invalid input";

}

return 0;

}

Output:

Enter the marks in python 90

Enter the marks in c programming:89

Enter the marks in Mathematics:45

Enter the marks in Physics:76

TOTAL : 300

AGGREGATE : 75

DISTINCTION

13. Write a program for matrix addition?

#include <iostream>

using namespace std;

int main()

{

int a[10][10],b[10][10], c[10][10] ,row, col,i,j;

cout<<"Enter the number of rows : ";

cin>>row;

cout<<"Enter the number of column : ";

cin>>col;

cout<<"enter A matrix element : ";

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

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

cin>>a[i][j];

}

}

cout<<"enter B matrix element : ";

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

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

cin>>b[i][j];

}

}

cout<<"ADDITION OF MATRIX A&B : \n";

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

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

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

cout<<c[i][j];

cout<<" ";

}

cout<<"\n";

}

return 0;

}

Output:

Enter the number of rows : 2

Enter the number of column : 2

enter A matrix element : 1

2

3

4

enter B matrix element : 1

2

3

4

ADDITION OF MATRIX A&B :

2 4

6 8

14. Write a program for matrix multiplication?

#include <iostream>

using namespace std;

int main() {

int x[5][5],y[5][5],z[5][5],row,col,i,j,k;

cout<<"enter the number of row=";

cin>>row;

cout<<"enter the number of column=";

cin>>col;

cout<<"enter A matrix element=\n";

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

{

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

{

cin>>x[i][j];

}

}

cout<<"enter B matrix element=\n";

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

{

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

{

cin>>y[i][j];

}

}

cout<<"multiply of the matrix A & B=\n";

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

{

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

{

z[i][j]=0;

for(k=0;k<col;k++)

{

z[i][j]+=x[i][k]\*y[k][j];

}

}

}

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

{

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

{

cout<<z[i][j];

cout<<" ";

}

cout<<"\n";

}

return 0;

}

Output:

enter the number of row=2

enter the number of column=2

enter A matrix element=

1

2

3

4

enter B matrix element=

1

2

3

4

multiply of the matrix A & B=

7 10

15 22

15. Program to remove duplicates from the sorted array

#include<iostream>

using namespace std;

int main ()

{

int A[10], B[10], n, i, j, k = 0;

cout<< "Enter the no of elements in an array : ";

cin>> n;

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

cout<< "Enter elements of array : ";

cin>> A[i];

}

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

{

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

{

if (A[i] == B[j])

break;

}

if (j == k)

{

B[k] = A[i];

k++;

}

}

cout<< "Repeated elements after deletion : ";

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

cout<< B[i] << " ";

return 0;

}

Output:

Enter the no of elements in an array : 5

Enter elements of array : 8

Enter elements of array : 7

Enter elements of array : 8

Enter elements of array : 5

Enter elements of array : 3

Repeated elements after deletion : 8 7 5 3

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