```
#include<iostream.h>
#include<conio.h>
void call_by_value(int a,int b)
{
  int t=a;
      a=b;
      b=t;
  cout<<"\nValues inside function:\na="<<a<<"\tb="<<b;
}
void call_by_reference(int &a,int &b)
{
  int t=a;
      a=b;
      b=t;
  cout<<"\nValues inside function:\na="<<a<<"\tb="<<b;
}
void call_by_pointer(int *a,int *b)
{
  int t=*a;
      *a=*b;
      *b=t;
  cout<<"\nValues inside function:\na="<<*a<<"\tb="<<*b;
}
void main()
{
  int ch,a,b;
  clrscr();
  cout<<"\nEnter two values:";
  cin>>a>>b;
  cout<<"\n* * * * M E N U * * * * * ";
  cout<<"\n1.Call by Value";
  cout<<"\n2.Call by Reference";
  cout<<"\n3.Call by Pointer";
  cout<<"\nEnter your choice:";
  cin>>ch;
  clrscr();
  cout<<"\nValues before swapping";
  cout<<"\nA="<<a<<"\tB="<<b;
  switch(ch)
  {
    case 1:call_by_value(a,b);
           cout<<"\nAfter swapping function is called:";
           cout<<"\nA="<<a<<"\tB="<<b;
           break;
    case 2:call_by_reference(a,b);
           cout<<"\nAfter swapping function is called:";
           cout<<"\nA="<<a<<"\tB="<<b;
           break;
    case 3:call_by_pointer(&a,&b);
           cout<<"\nAfter swapping function is called:";
           cout<<"\nA="<<a<<"\tB="<<b;
           break;
    default:cout<<"\nWrong choice!!!!";
           break;
  }
 getch();
}
```

```
Enter two values:10 15

* * * * M E N U * * * * *
1.Call by Value
2.Call by Reference
3.Call by Pointer
Enter your choice:1

Values before swapping
A=10    B=15
nValues inside function:
a=15    b=10
After swapping function is called:
A=10    B=15_
```

```
Enter two values:10 15

* * * * M E N U * * * * *
1.Call by Value
2.Call by Reference
3.Call by Pointer
Enter your choice:2

Values before swapping
A=10    B=15
Values inside function:
a=15    b=10
After swapping function is called:
A=15    B=10_
```

```
Enter two values:10 15

* * * * M E N U * * * * *
1.Call by Value
2.Call by Reference
3.Call by Pointer
Enter your choice:3

Values before swapping
A=10    B=15
Values inside function:
a=15    b=10
After swapping function is called:
A=15    B=10
```

```
#include<iostream.h>
#include<conio.h>
void rowsum(int r,int c,int *arr,int *rs)
{
  int i,j;
  for(i=0;i<r;i++)
  {
    rs[i]=0;
    for(j=0;j<r;j++)
       rs[i]+=arr[i*c+j];
  }
}
void columnsum(int r,int c,int *arr,int *cs)
{
  int i,j;
  for(i=0;i<c;i++)
  {
    cs[i]=0;
    for(j=0;j<r;j++)
       cs[i]+=arr[j*c+i];
  }
}
void main()
{
  int i,j,r,c,ch;
  clrscr();
  cout<<"\nEnter the dimensions of the matrix:\n";
  cout<<"No. of rows:";
  cin>>r;
  cout<<"No. of columns:";
  cin>>c;
  int *arr=new int[r*c];
  int *rs=new int[r];
  int *cs=new int[c];
  cout<<"\nEnter"<<r*c<<" elements of matrix:";
  for(i=0;i<r;i++)
    for(j=0;j<c;j++)
      cin>>arr[i*c+j];
  cout<<"\n * * * * M E N U * * * * ";
  cout<<"\n1.Row sum";
  cout<<"\n2.Column sum";
  cout<<"\n3.Row and column sum";
  cout<<"\nEnter your choice:";
  cin>>ch;
  switch(ch)
  {
    case 1:rowsum(r,c,arr,rs);
          cout<<"\nMatrix row sum\n";
          for(i=0;i<r;i++)
          {
            for(j=0;j<c;j++)
               cout<<arr[i*c+j]<<"\t";
            cout<<"-->"<<rs[i]<<"\n";
          }
          break;
    case 2:columnsum(r,c,arr,cs);
          cout<<"\nMatrix with column sum\n";
          for(i=0;i<r;i++)
          {
            for(j=0;j<c;j++)
               cout<<arr[i*c+j]<<"\t";
            cout<<"\n";
          }
          cout<<"_____________________\n";
          for(i=0;i<c;i++)
              cout<<cs[i]<<"\t";
          break;
    case 3:rowsum(r,c,arr,rs);
          columnsum(r,c,arr,cs);
          cout<<"\nMatrix with row and column sum\n";
          for(i=0;i<r;i++)
          {
            for(j=0;j<c;j++)
               cout<<arr[i*c+j]<<"\t";
            cout<<"-->"<<rs[i]<<"\n";
          }
          cout<<"_____________________\n";
          for(i=0;i<c;i++)
             cout<<cs[i]<<"\t";
          break;
  }
 getch();
}
```

```
Enter the dimensions of the matrix:
No. of rows:2
No. of columns:2
Enter 4 elements of matrix:1 2 3 4

 * * * * M E N U * * * *
1.Row sum
2.Column sum
3.Row and column sum
Enter your choice:1

Matrix row sum
1       2       -->3
3       4       -->7


Enter the dimensions of the matrix:
No. of rows:3
No. of columns:3
Enter 9 elements of matrix:
1 2 3 4 5 6 7 8 9

 * * * * M E N U * * * *
1.Row sum
2.Column sum
3.Row and column sum
Enter your choice:2

Matrix with column sum
1       2       3
4       5       6
7       8       9
_____________________
12      15      18


Enter the dimensions of the matrix:
No. of rows:4
No. of columns:4
Enter 16 elements of matrix:
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

 * * * * M E N U * * * *
1.Row sum
2.Column sum
3.Row and column sum
Enter your choice:3

Matrix with row and column sum
1       2       3       4       -->10
5       6       7       8       -->26
9       10      11      12      -->42
13      14      15      16      -->58
_____________________
28      32      36      40
```