Binary Search :

```
#include<iostream>
#define max 100
using namespace std;
class Binary
{
   public:
   int size,key,mid,i,j,temp,low,high,a[max];
   void read()
   {
      cout<<"Enter size of array";
      cin>>size;
      for(i=0;i<size;i++)
      {
         cout<<"Enter your data "<<i+1<<'\t';
         cin>>a[i];
      }
   }
         void sort()
   {

      for(i=0;i<size;i++)
            {          int pos=i;          for(j=i+1;j<size;j+
                                    +)          { if(a[pos]>a[j])
                                                      { pos=j;
```

```
                    } }                 if(pos!=i) {
            temp=a[i]; a[i]=a[pos];
              a[pos]=temp;
               }
    }
      cout<<"data after sorting "<<endl;        for(int
k=0;k<size;k++)
    {
      cout<<a[k]<<endl;
    }
  }
  void binary()
  {
    cout<<"Enter key value you want to search";
          cin>>key;        low=0;
      high=size-1;
      for(i=low;i<high;i++)
      {
        mid=(low+high)/2;              if(key==a[mid])
        {
          cout<<"value is found at "<<mid<<" position";
          break;
        }
        else if(key>a[mid])
        {
          low=mid+1;
        }
```

```
            else if(key<a[mid])
            {
               high=mid-1;
            }
         }
         if(key!=a[mid])
         {
            cout<<"value is not found";
      }
   }
};
int main()
{
   Binary obj;
obj.read();      obj.sort();
    obj.binary();      return
0;
}
```

Output :

```
Enter size of array5
Enter your data 1    10
Enter your data 2    20
Enter your data 3    30
Enter your data 4    40
Enter your data 5    50
data after sorting
10
20
30
```

40

50

Enter key value you want to search30

value is found at 2 position