

linear Search

```
int num[]=new int[10];
System.out.println("enter 10 num");
for(int i=0;i<10;i++)
{
    num[i]=sc.nextInt();
}
int x,p=-1;
System.out.println("enter the search item");
x=sc.nextInt();
for(int i=0;i<10;i++)
{
    if(num[i]==x)
    {
        p=i;
        break;
    }
}
if(p!=-1)
System.out.println("num found"+
(p+1)+"position");
else
System.out.println("not found");
```

Binary Search

```
int n[]={1,3,4,8,9,12,14,18,45,49};
int lb=0,ub=9,mid,x,p=-1;
System.out.println("enter the num");
x=sc.nextInt();
while(lb<=ub)
{
    mid=(lb+ub)/2;
    if(n[mid]==x)
    {
        p=mid;
        break;
    }
    else if(x<n[mid])
        ub=mid-1;
    else
        lb=mid+1;
}
if(p!=-1)
System.out.println("roll found");
else
System.out.println("roll not found");
```

Selection sort

```
// accept the 10 num
for(int i=0;i<10;i++)
{
    int p=i;
    for(int j=i+1;j<10;j++)
```

```
{
    if(n[j]<n[p])
    {
        p=j;
    }
}
int t=n[i];
n[i]=n[p];
n[p]=t;
}
// display the data
```

Bubble sort

```
//accept the data
for(int i=1;i<10;i++)
{
    for(int j=0;j<10-i;j++)
    {
        if(n[j]>n[j+1])
        {
            int t=n[j];
            n[j]=n[j+1];
            n[j+1]=t;
        }
    }
}
```

//display the data

Max,min,avg n num

```
int x;
System.out.println("enter size");
x=sc.nextInt();
int n[]=new int[x];
int s=0,max,min;
System.out.println("enter the n num");
for(int i=0;i<x;i++)
{
    n[i]=sc.nextInt();
    s=s+n[i];
}
max=min=n[0];
for(int i=1;i<x;i++)
{
    if(n[i]>max)
        max=n[i];
    if(n[i]<min)
        min=n[i];
}
double avg=(double)s/x;
```

Accept 10 name and marks and display highest ,lowest marks along with name.

```
String n[]=new String[10];
int m[]=new int[10];
System.out.println("enter 10 students name and marks");
for(int i=0;i<10;i++)
{
    n[i]=sc.nextLine();
```

```
m[i]=sc.nextInt();
}
int max,min;
int p1,p2;
max=min=m[0];
p1=p2=0;
for(int i=1;i<10;i++)
{
    if(m[i]>max)
    {
        max=m[i];
        p1=i;
    }
    if(m[i]<min)
    {
        min=m[i];
        p2=i;
    }
}
s.o.pln(n[p1]+" highest marks "+max);
s.o.pln(n[p2]+" lowest marks "+min);
```

sort an array along with another array
selection sort

```
int t=n[i];
n[i]=n[p];
n[p]=t;
String x=name[i];
name[i]=name[p];
name[p]=x;

bubble sort
int t=n[j];
n[j]=n[j+1];
n[j+1]=t;
String x=name[j];
name[j]=name[j+1];
name[j+1]=x;
```