S.No: 3	Exp. Name: ***Write a program which finds the kth smallest number among the given list of numbers.***	Date:2023-04-03

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Aim:

Write a program which finds the k^{th} smallest number among the given one dimensional array.

Sample Input and Ouput:

```
Enter how many values you want to read : 5
Enter the value of a[0] : 20
Enter the value of a[1] : 30
Enter the value of a[2] : 16
Enter the value of a[3] : 15
Enter the value of a[4] : 1
Enter which smallest element you want: 2
16 is the 2th smallest element
```

Hint: The k^{th} element refers to the index.

Source Code:

smallest.c

```
#include<stdio.h>
#define MAX 100
int main()
{
   int a[20],i,n,j,kth,temp,pos;
   printf("Enter how many values you want to read : ");
   scanf("%d",&n);
   for(i=0;i<n;i++)
   {
      printf("Enter the value of a[%d] : ",i);
      scanf("%d",&a[i]);
   }
   printf("Enter which smallest element you want: ");
   scanf("%d",&kth);
   for(i=0;i<n;i++)
   {
      pos=i;
      for(j=i+1;j<n;j++)
      if(a[j]<a[pos])
      {
         pos=j;
      }
      temp=a[i];
      a[i]=a[pos];
      a[pos]=temp;
   }
   printf("%d is the %dth smallest element",a[kth],kth);
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter how many values you want to read : 5
Enter the value of a[0] : 20
Enter the value of a[1] : 30
Enter the value of a[2] : 16
Enter the value of a[3] : 15
Enter the value of a[4] : 1
Enter which smallest element you want: 2
16 is the 2th smallest element

Test Case - 2
User Output
Enter how many values you want to read : 6
Enter the value of a[0] : 32
Enter the value of a[1] : 65
Enter the value of a[2] : 98
Enter the value of a[3] : 74
Enter the value of a[4] : 12
Enter the value of a[5] : 15
Enter which smallest element you want: 4
74 is the 4th smallest element

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