AOA Lab Test-1   1BM19CS124

Selection Sort   PRIYANSHU GUPTA

```c
# include <stdio.h>
# include <stdlib.h>
# include <time.h>


int main(){
int i, j, count, min, temp, k, largest;
float start, end;
    printf ("How many numbers u are going to
    enter ?: \n");
    - scanf ("%d", &count);
    int number [count];
printf ("Enter the elements of the array \n");
    for (i=0; i<count; i++){
    scanf ("%d", &number [i]);
    }
print ("Enter the kth largest element to
    be found \n");
    scanf ("%d", &k)
    largest = count - k;
    start = clock();
    for (i = 0; i < count; i++){
    min = i;
```

```
for j =i+1 ; j < count; j++){
    if (number [min] > number [j]){
        min = j;
    }
}

temp = number [min];
number [min] = number [i];
number [i] = temp;
if (i==largest){
    printf ("%d th largest program is %d\n
    ", number [i]);
    break;
}
}

end = clock ().
printf ("\n")
    printf ("\n Time date of sort-ed number
    is % secs ", count, ((double)(end -start)
    clock S_PER_SEC ()];
    return 0;
}
```

```c
#include<stdio.h>
#include<stdlib.h>
#include<time.h>


void selectionSort(int n, int a[n])
{
    int pos, temp;
    for(int i = 0; i < n - 1; i++)
    {
        pos=i;
        for(int j = i + 1; j < n; j++)
        {
            if(a[pos] > a[j])
                pos=j;
        }
        if(pos != i)
        {
            temp=a[i];
            a[i]=a[pos];
            a[pos]=temp;
        }
    }
}

void kth(int n, int a[n], int k)
{
    printf("\nThe %dth largest number is %d\n", k, a[n-k]);
}


int main()
{
    int n;
    printf("Enter number of elements: ");
    scanf("%d", &n);
    int a[n];
    printf("The numbers are-\n");
    for(int i=0; i<n; i++)
    {
        a[i]=rand();
```

```c
{
    printf("\nThe %dth largest number is %d\n",k,a[n-k]);
}


int main()
{
    int n;
    printf("Enter number of elements: ");
    scanf("%d", &n);
    int a[n];
    printf("The numbers are-\n");
    for(int i=0;i<n;i++)
    {
        a[i]=rand();
    }
    for (int i = 0; i < n; i++)
    {
        printf("%d\t",a[i]);

    }
    printf("\n");

    clock_t begin = clock();
    selectionSort(n,a);
    clock_t end = clock();

    printf("Sorted Array-\n");
    for(int i = 0; i < n; i++)
        printf("%d\t", a[i]);

    double time_taken = (double)(end-begin)/(CLOCKS_PER_SEC);
    printf("\nSelection sort time is %f seconds!!\n",time_taken);

    int k;
    printf("\nEnter value of k: ");
    scanf("%d",&k);
    kth(n,a,k);
    return 0;
}
```

```
Enter number of elements: 10
The numbers are-
1        18467    6334     26500    19169    15724    11478    29358    26962    24464
Sorted Array-
1        6334     11478    15724    18467    19169    24464    26500    26962    29358
Selection sort time is 0.000000 seconds!!

Enter value of k: 2

The 2th largest number is 26962

Process returned 0 (0x0)   execution time : 8.462 s
Press any key to continue.
```