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1BM19CS083
4th sem, 'B' sec
B-3, Batch

ADA Lab Test 1

Selection Sort

```
#include <stdio.h>
#include <stdlib.h>
#include <time.h>
clock_t start1, end1;
void swap(int *xp, int *yp)
{int temp = *xp;
 *xp = *yp;
 *yp = temp;
}
void selection_sort(int arr[], int n)
{ int i, j, min_idx;
  for (i=0; i<n-1; i++)
  { min_idx = i;
    for (j = j+1; j<n; j++)
      if (arr[j] < arr[min_idx])
        min_idx = j;
```

```
            swap(&arr[min_idx], &arr[i]);
        }
    }

void printArray(int arr[], int size)
{
    int i;
    for (i=0; i<size; i++)
        printf("%d", arr[i]);
    printf("\n");
}

int main()
{
    int arr[100], n, i;
    srand(time(0));
    start1 = clock();
    printf("Enter size of array\n");
    scanf("%d", &n);
    for(i=0; i<n; i++)
    {
        arr[i] = rand()%100;
        printf("%d\t", arr[i]);
    }
    printf("\n");
```

```
selection_sort (arr, n);
end1 = clock();
printf ("Sorted array : \n");
printArray (arr, n);
double cpu_time1 = (double) (end1 - start1) / clocks_per_sec;
printf ("Time taken : %f ", cpu_time1);
return 0;
}
```

Modification

```
Void Kth largest (int arr[], int size, int k)
{ ~~sort~~
    selection_sort (arr, n);

    for (int i=0; i < size; i++)
    { if (i == k - 1)
        printf (" K-th largest element : %d ", arr[i]);
        break;
    }
}
```