

SELECTION SORT PROGRAM
PROGRAM:-

```
#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 selectionSort(int arr[], int n)
{
    int i, j, min_idx;
    for (i = 0; i < n-1; i++)
    {
        min_idx = i;
        for (j = i+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 \t", arr[i]);
    printf("\n");
}

int main()
{
    int arr[100], n, i;
    srand(time(0));
    start1=clock();
    printf("Enter the size of array\n");
    scanf("%d",&n);

    for(i=0; i<n; i++){
        arr[i]=rand()%1000;
        printf("%d\t",arr[i]);
    }
    printf("\n");
    selectionSort(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;
}

```

OUTPUT:-

```
Enter the size of array
100
503    13    960    608    531    320    859    471    174    483
73     527    608    611    830    149    333    327    577    171
01     98     901    774    97     23     800    389    715    119
18     218    132    478    179    16     150    390    839    324
73     965    203    481    576    385    983    909    712    560
32     865    10     685    992    459    709    792    849    424
11     719    995    396    197    174    764    699    564    603
3      437    568    578    271    144    963    254    405    28
66     838    893    176    523    237    988    232    30     837
41     556    4      689    105    530    453    804    94
Sorted array:
4      9      10     13     16     23     23     28     30     94
7      98     105    119    132    144    149    150    166    171
74     174    176    179    197    203    218    232    237    254
71     320    324    327    333    385    389    390    396    405
24     432    437    453    459    471    478    481    483    503
18     523    527    530    531    556    560    564    568    576
77     578    603    608    608    611    685    689    699    709
12     715    719    764    773    774    792    800    801    804
30     837    838    839    849    859    865    873    893    901
09     911    941    960    963    965    983    988    992    995
Time taken: 0.000308
```