

ADA Lab-Exam

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IBM19IS162

- 1) Sorting a given set of elements using quick sort

code :

```
#include <iostream>
using namespace std;
```

```
int pos(int a[], int l, int h) {
    int i = l + 1;
    int j = h;
    int pivot = a[l];
```

```
    while (i <= j)
    {
```

```
        while (a[i] <= pivot)
            i++;
```

```
        while (a[j] > pivot)
            j--;
```

```
        if (i < j)
```

```
            swap(a[i], a[j]);
```

```
    }
```

```
    swap(a[j], a[l]);
```

```
    return j;
```

```
}
```

Posun


```
void quicksort(int a[], int l, int h) {
    if (l < h) {
        int p = pos(a, l, h);
        quicksort(a, l, p-1);
        quicksort(a, p+1, h);
    }
}
```

```
int main()
{
    int n;
    cout << "Enter number of elements\n";
    cin >> n;
    int a[n];
    cout << "Enter " << n << " Elements ";
    for (int i=0; i<n; i++) {
        cin >> a[i];
    }
    cout << "Enter Elements\n";
    for (int i=0; i<n; i++)
        cout << a[i] << " ";
}
```

```
quicksort(a, 0, n-1);
cout << "Sorted array\n";
for (int i=0; i<n; i++)
    cout << a[i] << " ";
return 0;
```

}

Reshmi