Practical 5

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Implement Bucket Sort.

Code

```
#include <algorithm>
#include <iostream>
#include <vector>
using namespace std;
/*
void inputArray(float arr[] , int n){
 cout<<"Enter the elements in array: "<< " ";
  for(int i=0;i<n;i++){
    cin>>arr[i];
  }
}
*/
void printArray(float arr[], int n){
 cout<<"Sorted Array is : " << " ";
  for(int i=0;i<n;i++){
    cout<<arr[i]<< " ";
  }
}
void bucketSort(float arr[], int n)
{
      vector<float> buckets[n];             ///Creating empty buckets of
float type

      for (int i = 0; i < n; i++) {  ///Putting elements of array in
different buckets
            int bucket_index = n * arr[i];       ///Index in bucket
            buckets[bucket_index].push_back(arr[i]);
      }

      for (int i = 0; i < n; i++)   ///Sorting the buckets
            sort(buckets[i].begin(), buckets[i].end());

      ///Putting all the buckets together in array
      int index = 0;
```

```
      for (int i = 0; i < n; i++)
            for (int j = 0; j < buckets[i].size(); j++)
                  arr[index++] = buckets[i][j];
}

int main()
{
      float arr[]= { 0.62, 0.999, 0.656, 0.1234, 0.0216, 0.3439 };
      int n=6;
      //cout<<"Enter the value of n:" <<" ";
      //inputArray(arr,n);
      bucketSort(arr, n);
      printArray(arr,n);
    return 0;
}
```

Output

```
Sorted Array is :  0.0216 0.1234 0.3439 0.62 0.656 0.999
```