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NAME – RAJDEEP JAISWAL	DATE – 17 NOV 2021
BRANCH – BTECH CSE	SEC = 608 - A
UID -20BCS2761	Subject – DS Lab

AIM – **Write a program to sort an array of floating-point numbers in descending order using merge sort ?**

CODE IN TEXT FORM –

```cpp
#include <algorithm>
#include <iostream>
#include <vector>

using namespace std;

  void
  bucketsort(float arr[], int n)
{
  vector<float> b[n];
  for (int i = 0; i < n; i++)
  {
    int bi = n * arr[i];
    b[bi].push_back(arr[i]);
  }
  for (int i = 0; i < n; i++)

    sort(b[i].begin(), b[i].end());
```
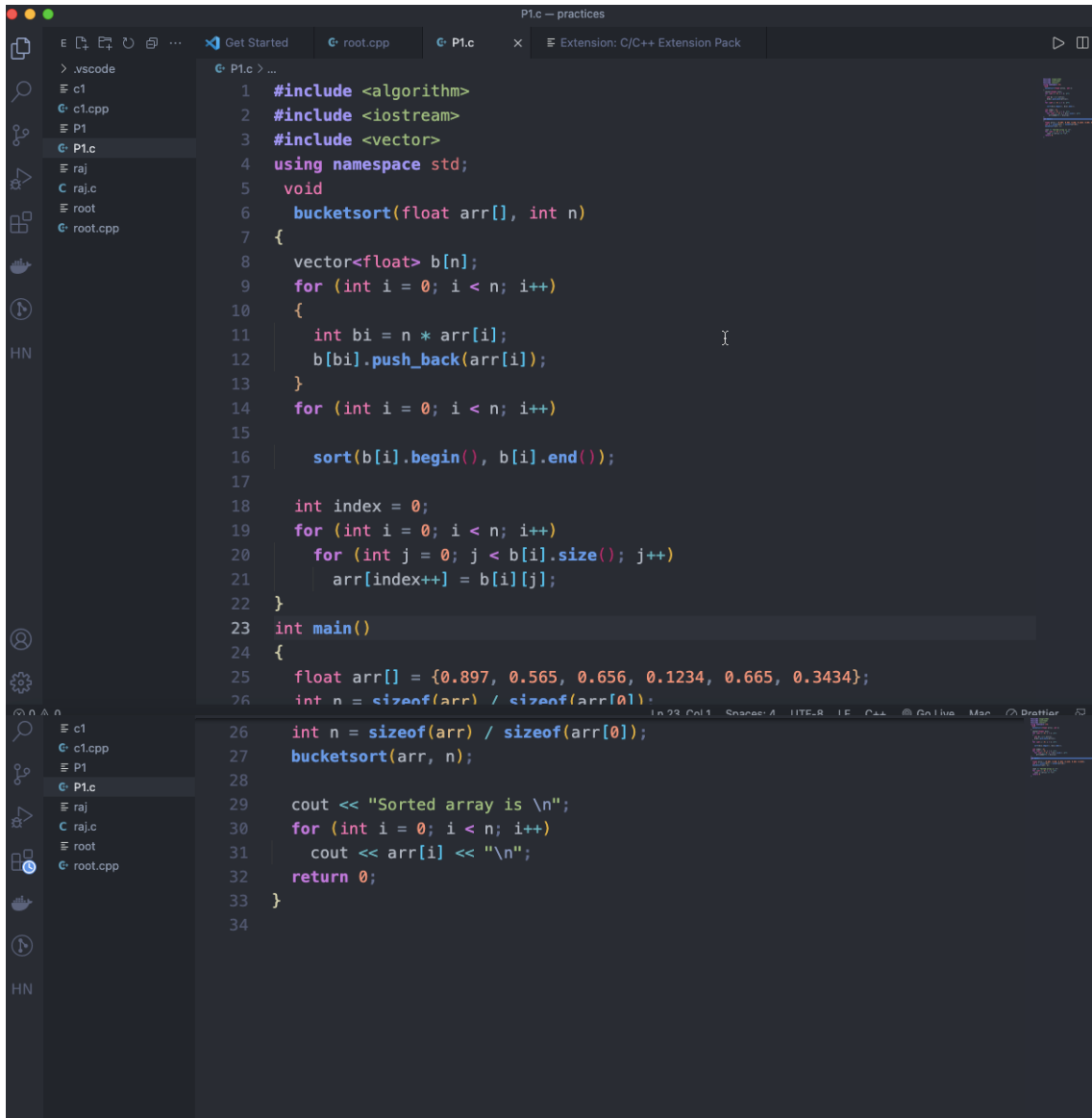
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```cpp
  int index = 0;
  for (int i = 0; i < n; i++)
    for (int j = 0; j < b[i].size(); j++)
      arr[index++] = b[i][j];
}

int main()
{
  float arr[] = {0.897, 0.565, 0.656, 0.1234, 0.665,
0.3434};
  int n = sizeof(arr) / sizeof(arr[0]);
  bucketsort(arr, n);

  cout << "Sorted array is \n";
  for (int i = 0; i < n; i++)
    cout << arr[i] << "\n";
  return 0;
}
```

CODE IN COMPILER –

```c
#include <algorithm>
#include <iostream>
#include <vector>
using namespace std;
 void
  bucketsort(float arr[], int n)
{
  vector<float> b[n];
  for (int i = 0; i < n; i++)
  {
    int bi = n * arr[i];
    b[bi].push_back(arr[i]);
  }
  for (int i = 0; i < n; i++)

    sort(b[i].begin(), b[i].end());

  int index = 0;
  for (int i = 0; i < n; i++)
    for (int j = 0; j < b[i].size(); j++)
      arr[index++] = b[i][j];
}
int main()
{
  float arr[] = {0.897, 0.565, 0.656, 0.1234, 0.665, 0.3434};
  int n = sizeof(arr) / sizeof(arr[0]);
```

```c
  int n = sizeof(arr) / sizeof(arr[0]);
  bucketsort(arr, n);

  cout << "Sorted array is \n";
  for (int i = 0; i < n; i++)
    cout << arr[i] << "\n";
  return 0;
}
```

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OUTPUT –

```
PROBLEMS    OUTPUT    TERMINAL                                              1: Code

cd "/Users/rajdeepjaiswal/Desktop/Codes/practices/" && g++ P1.C -o P1 && "/Users/rajdeepjaiswal/Desktop/Codes/practices/"P1
rajdeepjaiswal@Rajdeeps-MacBook-Air practices % cd "/Users/rajdeepjaiswal/Desktop/Codes/practices/" && g++ P1.C -o P1 && "/Users/rajdeepjaisw
al/Desktop/Codes/practices/"P1
Sorted array is
0.1234
0.3434
0.565
0.656
0.665
0.897
rajdeepjaiswal@Rajdeeps-MacBook-Air practices %
```

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			