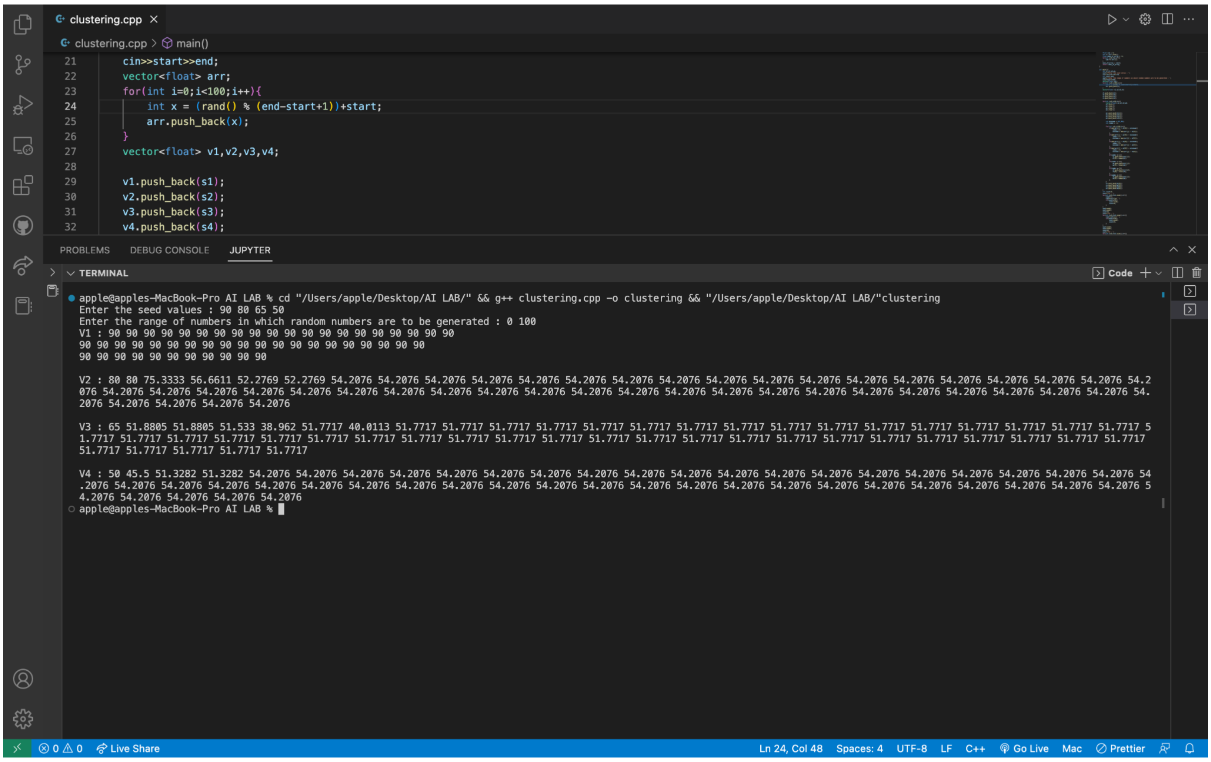
Test Case1: Generate a Series of 100 numbers in a range 0-100 with seed points: 90, 80, 65, 50.



```cpp
    cin>>start>>end;
    vector<float> arr;
    for(int i=0;i<100;i++){
        int x = (rand() % (end-start+1))+start;
        arr.push_back(x);
    }
    vector<float> v1,v2,v3,v4;

    v1.push_back(s1);
    v2.push_back(s2);
    v3.push_back(s3);
    v4.push_back(s4);
```

```
apple@apples-MacBook-Pro AI LAB % cd "/Users/apple/Desktop/AI LAB/" && g++ clustering.cpp -o clustering && "/Users/apple/Desktop/AI LAB/"clustering
Enter the seed values : 90 80 65 50
Enter the range of numbers in which random numbers are to be generated : 0 100
V1 : 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90
90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90
90 90 90 90 90 90 90 90 90 90 90

V2 : 80 80 75.3333 56.6611 52.2769 52.2769 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2
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2076 54.2076 54.2076 54.2076 54.2076

V3 : 65 51.8805 51.8805 51.533 38.962 51.7717 40.0113 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 5
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51.7717 51.7717 51.7717 51.7717 51.7717

V4 : 50 45.5 51.3282 51.3282 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54
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4.2076 54.2076 54.2076 54.2076 54.2076
apple@apples-MacBook-Pro AI LAB % 
```
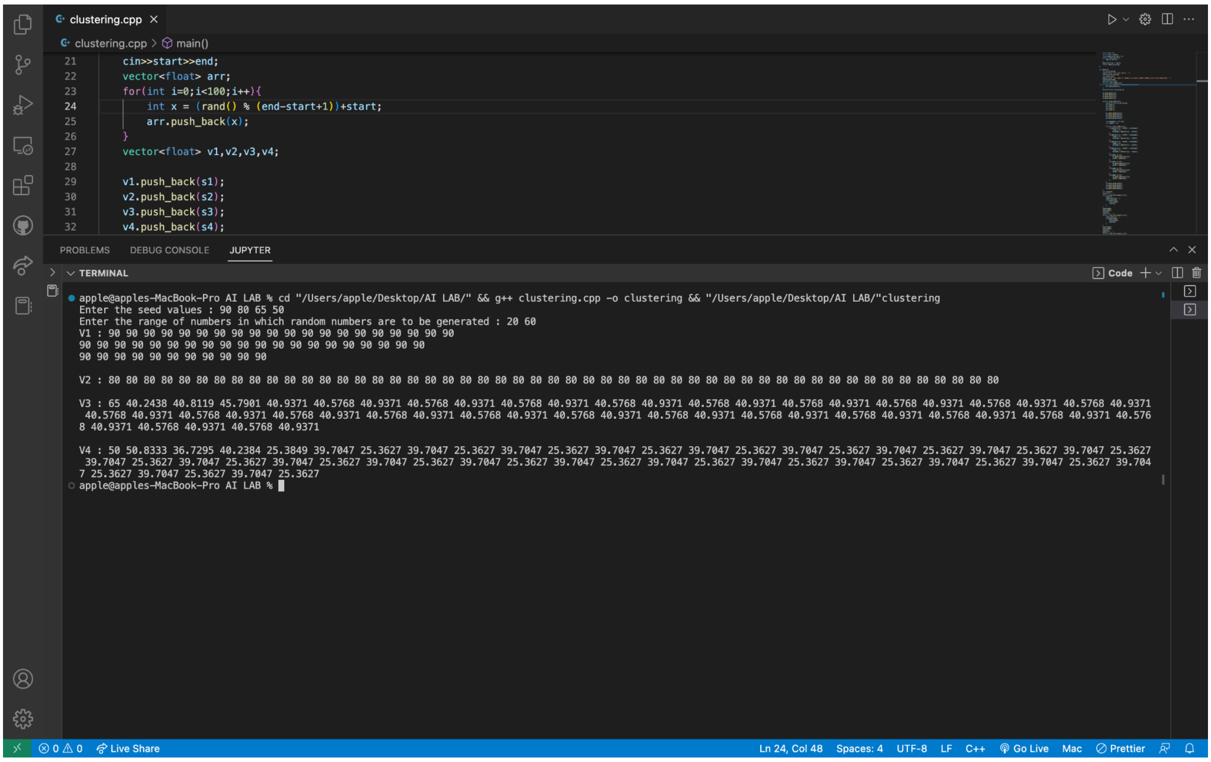

Test Case 2: Generate a Series of 100 numbers in a range 20-60 with seed points: 90, 80, 65, 50.



```cpp
    cin>>start>>end;
    vector<float> arr;
    for(int i=0;i<100;i++){
        int x = (rand() % (end-start+1))+start;
        arr.push_back(x);
    }
    vector<float> v1,v2,v3,v4;

    v1.push_back(s1);
    v2.push_back(s2);
    v3.push_back(s3);
    v4.push_back(s4);
```

```
apple@apples-MacBook-Pro AI LAB % cd "/Users/apple/Desktop/AI LAB/" && g++ clustering.cpp -o clustering && "/Users/apple/Desktop/AI LAB/"clustering
Enter the seed values : 90 80 65 50
Enter the range of numbers in which random numbers are to be generated : 20 60
V1 : 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90
90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90
90 90 90 90 90 90 90 90 90 90 90

V2 : 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80

V3 : 65 40.2438 40.8119 45.7901 40.9371 40.5768 40.9371 40.5768 40.9371 40.5768 40.9371 40.5768 40.9371 40.5768 40.9371 40.5768 40.9371 40.5768 40.9371 40.5768 40.9371 40.5768 40.9371
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8 40.9371 40.5768 40.9371 40.5768 40.9371

V4 : 50 50.8333 36.7295 40.2384 25.3849 39.7047 25.3627 39.7047 25.3627 39.7047 25.3627 39.7047 25.3627 39.7047 25.3627 39.7047 25.3627 39.7047 25.3627 39.7047 25.3627 39.7047 25.3627
 39.7047 25.3627 39.7047 25.3627 39.7047 25.3627 39.7047 25.3627 39.7047 25.3627 39.7047 25.3627 39.7047 25.3627 39.7047 25.3627 39.7047 25.3627 39.7047 25.3627 39.7047 25.3627 39.704
7 25.3627 39.7047 25.3627 39.7047 25.3627
apple@apples-MacBook-Pro AI LAB % 
```
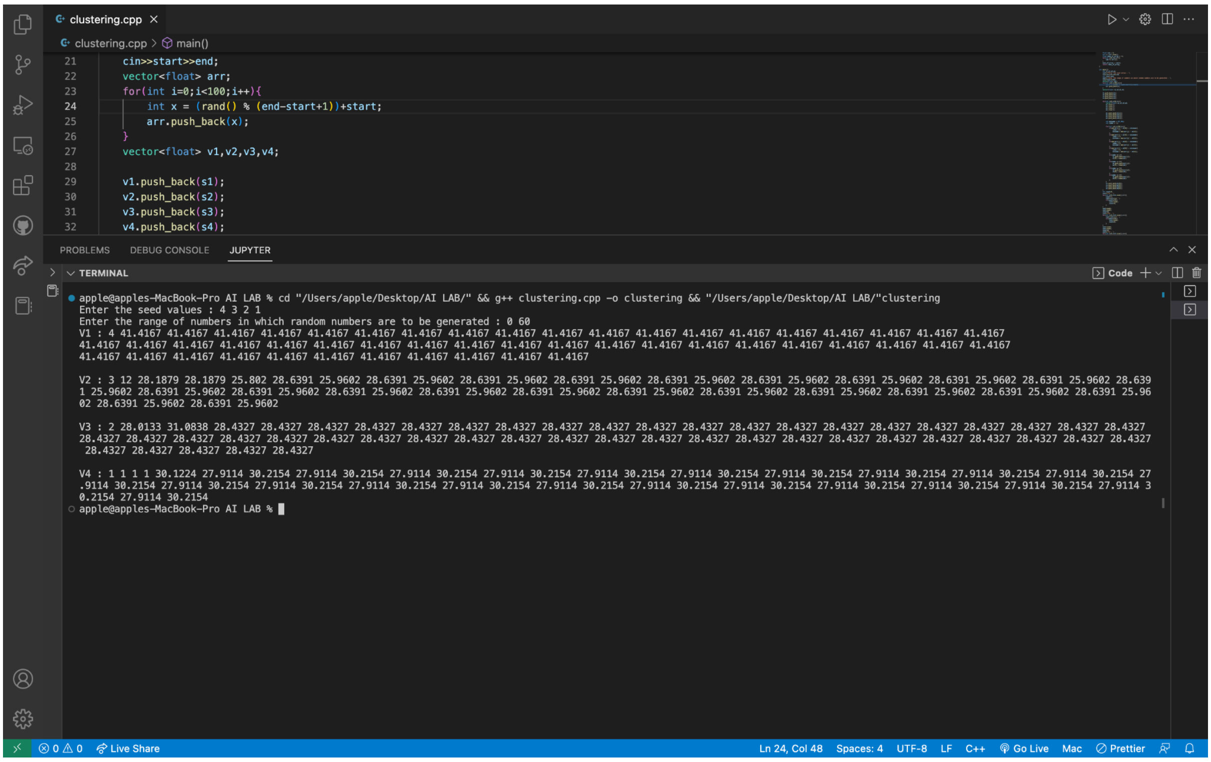
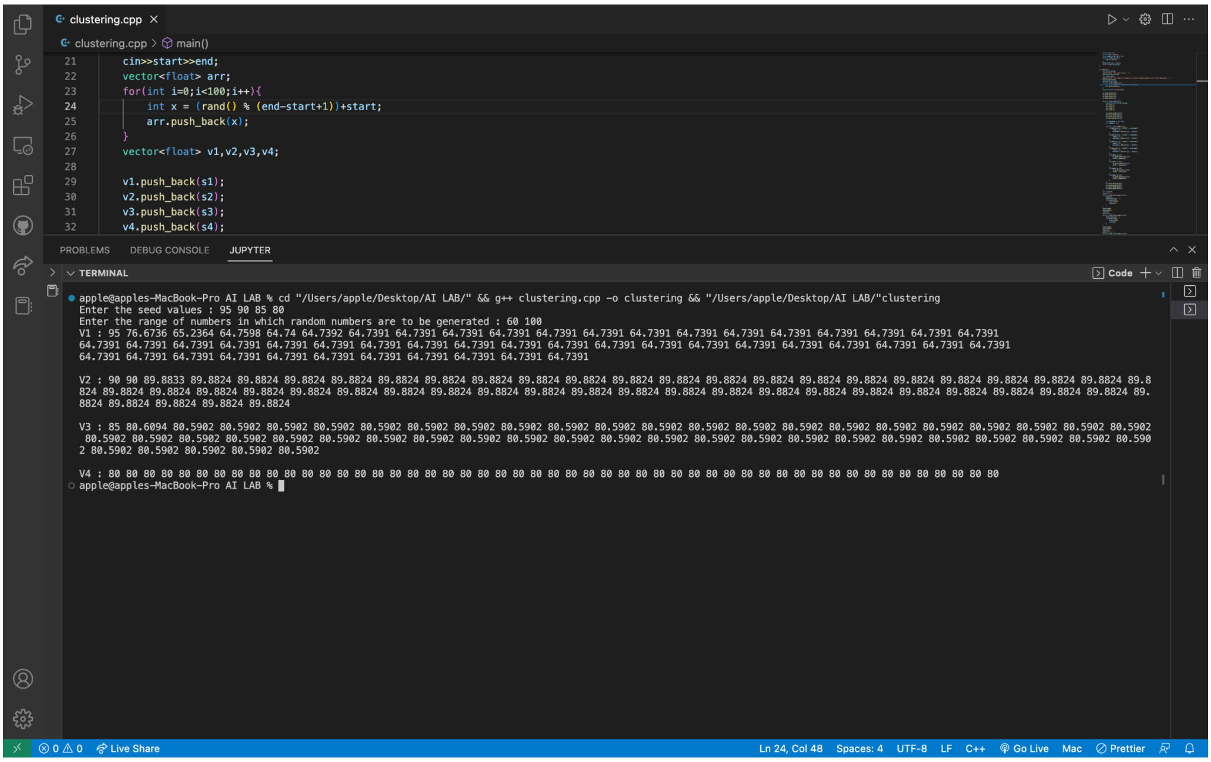

Test Case 3: Generate a Series of 100 numbers in a range 0-60 with seed points: 4,3,2,1



```cpp
    cin>>start>>end;
    vector<float> arr;
    for(int i=0;i<100;i++){
        int x = (rand() % (end-start+1))+start;
        arr.push_back(x);
    }
    vector<float> v1,v2,v3,v4;

    v1.push_back(s1);
    v2.push_back(s2);
    v3.push_back(s3);
    v4.push_back(s4);
```

```
apple@apples-MacBook-Pro AI LAB % cd "/Users/apple/Desktop/AI LAB/" && g++ clustering.cpp -o clustering && "/Users/apple/Desktop/AI LAB/"clustering
Enter the seed values : 4 3 2 1
Enter the range of numbers in which random numbers are to be generated : 0 60
V1 : 4 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167
41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167
41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167 41.4167

V2 : 3 12 28.1879 28.1879 25.802 28.6391 25.9602 28.6391 25.9602 28.6391 25.9602 28.6391 25.9602 28.6391 25.9602 28.6391 25.9602 28.6391 25.9602 28.6391 25.9602 28.6391 25.9602 28.639
1 25.9602 28.6391 25.9602 28.6391 25.9602 28.6391 25.9602 28.6391 25.9602 28.6391 25.9602 28.6391 25.9602 28.6391 25.9602 28.6391 25.9602 28.6391 25.9602 28.6391 25.9602 28.6391 25.96
02 28.6391 25.9602 28.6391 25.9602

V3 : 2 28.0133 31.0838 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327
28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327 28.4327
 28.4327 28.4327 28.4327 28.4327 28.4327

V4 : 1 1 1 1 30.1224 27.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27
.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27.9114 30.2154 27.9114 3
0.2154 27.9114 30.2154
apple@apples-MacBook-Pro AI LAB % 
```

Test Case 4: Generate a Series of 100 numbers in a range 60-100 with seed points: 95, 90, 85, 80.



```cpp
    cin>>start>>end;
    vector<float> arr;
    for(int i=0;i<100;i++){
        int x = (rand() % (end-start+1))+start;
        arr.push_back(x);
    }
    vector<float> v1,v2,v3,v4;

    v1.push_back(s1);
    v2.push_back(s2);
    v3.push_back(s3);
    v4.push_back(s4);
```

```
apple@apples-MacBook-Pro AI LAB % cd "/Users/apple/Desktop/AI LAB/" && g++ clustering.cpp -o clustering && "/Users/apple/Desktop/AI LAB/"clustering
Enter the seed values : 95 90 85 80
Enter the range of numbers in which random numbers are to be generated : 60 100
V1 : 95 76.6736 65.2364 64.7598 64.74 64.7392 64.7391 64.7391 64.7391 64.7391 64.7391 64.7391 64.7391 64.7391 64.7391 64.7391 64.7391 64.7391 64.7391 64.7391
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64.7391 64.7391 64.7391 64.7391 64.7391 64.7391 64.7391 64.7391 64.7391 64.7391 64.7391

V2 : 90 90 89.8833 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8
824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.8824 89.
8824 89.8824 89.8824 89.8824 89.8824

V3 : 85 80.6094 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902
 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.5902 80.590
2 80.5902 80.5902 80.5902 80.5902 80.5902

V4 : 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80
apple@apples-MacBook-Pro AI LAB % 
```
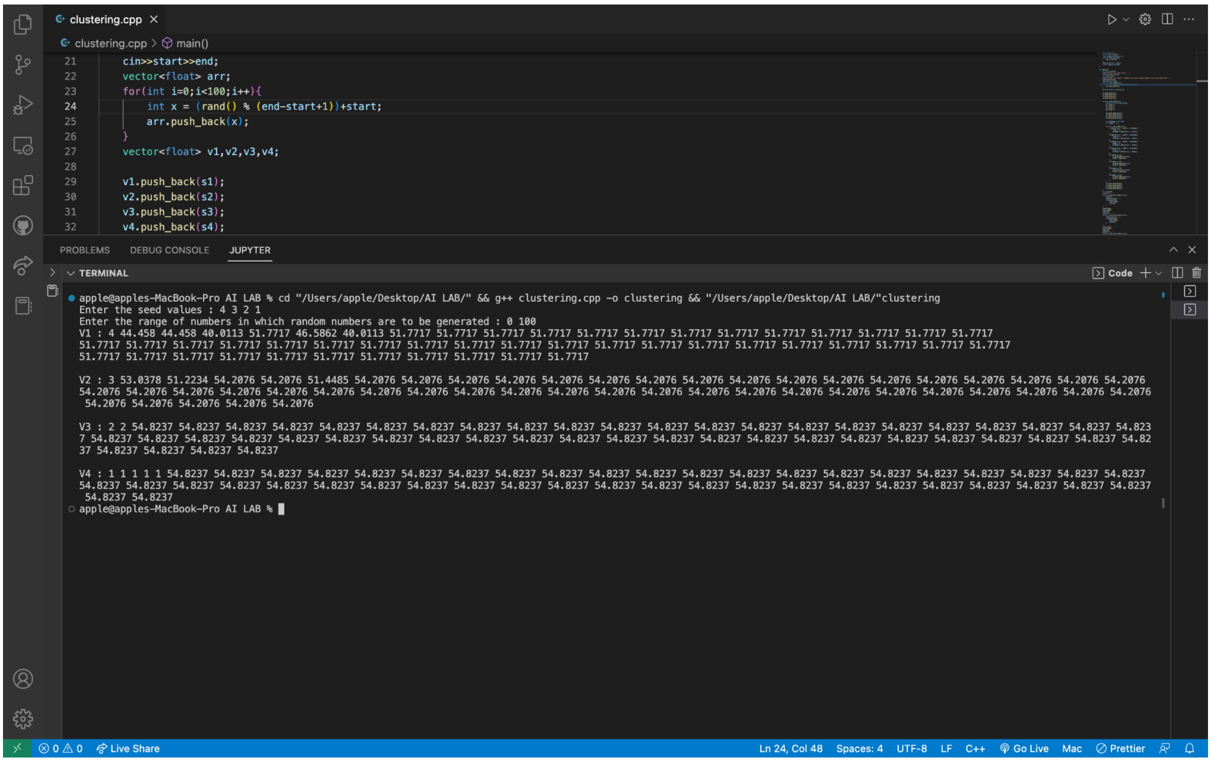

Test Case 5:   Generate a Series of 100 numbers in a range 0-100 with seed points: 4,3,2,1



```cpp
    cin>>start>>end;
    vector<float> arr;
    for(int i=0;i<100;i++){
        int x = (rand() % (end-start+1))+start;
        arr.push_back(x);
    }
    vector<float> v1,v2,v3,v4;

    v1.push_back(s1);
    v2.push_back(s2);
    v3.push_back(s3);
    v4.push_back(s4);
```

```
apple@apples-MacBook-Pro AI LAB % cd "/Users/apple/Desktop/AI LAB/" && g++ clustering.cpp -o clustering && "/Users/apple/Desktop/AI LAB/"clustering
Enter the seed values : 4 3 2 1
Enter the range of numbers in which random numbers are to be generated : 0 100
V1 : 4 44.458 44.458 40.0113 51.7717 46.5862 40.0113 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717
51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717
51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717 51.7717

V2 : 3 53.0378 51.2234 54.2076 54.2076 51.4485 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076
54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076 54.2076
 54.2076 54.2076 54.2076 54.2076 54.2076

V3 : 2 2 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.823
7 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.82
37 54.8237 54.8237 54.8237 54.8237

V4 : 1 1 1 1 1 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237 54.8237
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apple@apples-MacBook-Pro AI LAB % 
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