Assignment - 2

Name: Dhairya Arora

Enrolment Number: 01616401522

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Code:

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

// Selection Sort
void selectionSort(vector<int> &arr) {
    int n = arr.size();
    for (int i = 0; i < n - 1; ++i) {
        int minIdx = i;
        for (int j = i + 1; j < n; ++j) {
            if (arr[j] < arr[minIdx]) {
                minIdx = j;
            }
        }
        swap(arr[i], arr[minIdx]);
    }
}

// Bubble Sort
void bubbleSort(vector<int> &arr) {
    int n = arr.size();
```

```cpp
    for (int i = 0; i < n - 1; ++i) {

        for (int j = 0; j < n - i - 1; ++j) {

            if (arr[j] > arr[j + 1]) {

                swap(arr[j], arr[j + 1]);

            }

        }

    }

}


// Insertion Sort

void insertionSort(vector<int> &arr) {

    int n = arr.size();

    for (int i = 1; i < n; ++i) {

        int key = arr[i];

        int j = i - 1;

        while (j >= 0 && arr[j] > key) {

            arr[j + 1] = arr[j];

            --j;

        }

        arr[j + 1] = key;

    }

}
```

Output:

```
PS C:\Users\Dhairya Arora\OneDrive\Desktop\C++> cd "c:\Users\Dhairya Arora\OneDrive\Desktop\C++\" ; if ($?) { g++ DAAassignment-1.cpp -o DAAa
ssignment-1 } ; if ($?) { .\DAAassignment-1 }
Original array: 64 34 25 12 22 11 90
Selection Sort: 11 12 22 25 34 64 90
Bubble Sort: 11 12 22 25 34 64 90
Insertion Sort: 11 12 22 25 34 64 90
PS C:\Users\Dhairya Arora\OneDrive\Desktop\C++>
```