DAA-LAB 1

Name: Madhuramsinh Solanki

Reg no: 22BRS1327

Q1)

Code:

```
#include <iostream>
#include <set>
using namespace std;
int main() {
   set<int> mySet;
   int numOfElements;
   cout << "Enter the number of elements to add: ";
   cin >> numOfElements;
   for (int i = 0; i < numOfElements; i++) {
      int element;
      cin >> element;
      mySet.insert(element);
   }
   cout << "Elements in the set: ";
   for (int value : mySet) {
      cout << value << " ";
   }
   cout << endl << "Enter the element to be deleted: ";
   int elementToDelete;
   cin >> elementToDelete;
   mySet.erase(elementToDelete);S
   cout << "Set after deletion: ";
   for (int value : mySet) {
      cout << value << " ";
   }
   return 0;
```

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```cpp
#include <iostream>
#include <set>

using namespace std;

int main() {
    set<int> mySet;
    int numOfElements;

    cout << "Enter the number of elements to add: ";
    cin >> numOfElements;

    for (int i = 0; i < numOfElements; i++) {
        int element;
        cin >> element;
        mySet.insert(element);
    }

    cout << "Elements in the set: ";
    for (int value : mySet) {
        cout << value << " ";
    }

    cout << endl << "Enter the element to be deleted: ";
    int elementToDelete;
    cin >> elementToDelete;

    mySet.erase(elementToDelete);S

    cout << "Set after deletion: ";
    for (int value : mySet) {
        cout << value << " ";
    }

    return 0;
}
```

Output:

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Applications Places Terminal madhuramsinh

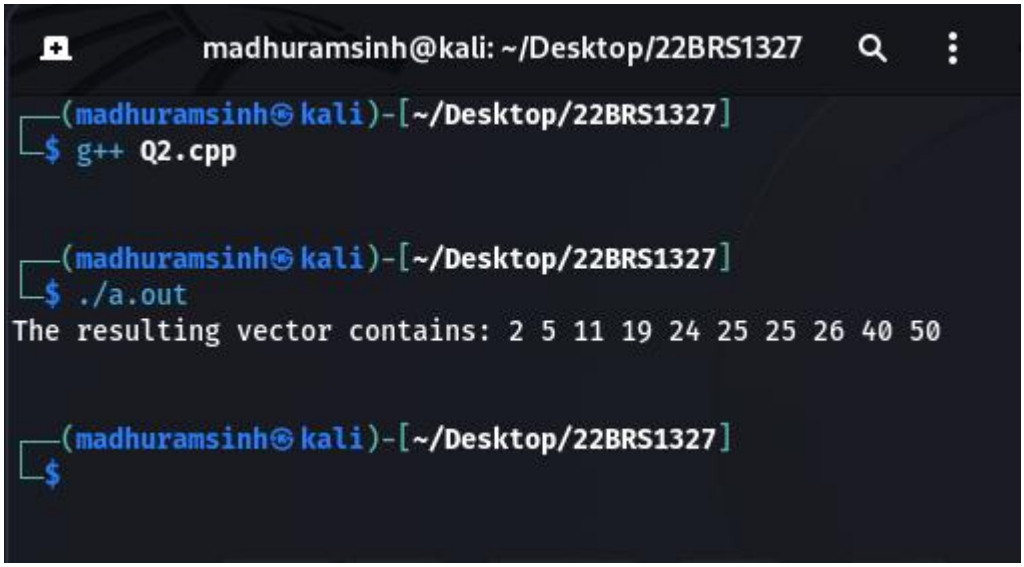
```
┌──(madhuramsinh㉿kali)-[~/Desktop/22BRS1327]
└─$ g++ Q1.cpp

┌──(madhuramsinh㉿kali)-[~/Desktop/22BRS1327]
└─$ ./a.out
Enter the number of elements to add: 5
1 2 3 6 0
Elements in the set: 0 1 2 3 6
Enter the element to be deleted: 2
Set after deletion: 0 1 3 6
```

Q2)

Code:

```
#include <iostream>
#include <algorithm>
#include <vector>
using namespace std;
int main() {
   int array1[] = {5, 19, 25, 24, 25};
   int array2[] = {50, 40, 2, 26, 11};
   vector<int> mergedVector(10);
   sort(array1, array1 + 5);
   sort(array2, array2 + 5);
   merge(array1, array1 + 5, array2, array2 + 5, mergedVector.begin());
   cout << "The resulting vector contains:";
   for (vector<int>::iterator it = mergedVector.begin(); it != mergedVector.end(); ++it)
      cout << ' ' << *it;
   cout << '\n';
   return 0;
}
```

Output:



Q3)

Code:

```
#include <iostream>
#include <vector>
using namespace std;
int main() {
   vector<int> numbers;
   int numOfElements;
   cout << "Enter the number of elements: ";
   cin >> numOfElements;
   for (int i = 0; i < numOfElements; i++) {
      int value;
      cin >> value;
      numbers.push_back(value);
   }
   cout << "Elements in the vector: ";
   for (int i = 0; i < numOfElements; i++) {
      cout << numbers[i] << " ";
   }
   cout << endl << "Deleting the last element" << endl;
   numbers.pop_back();
   cout << "Elements in the vector after deletion: ";
```

```
    for (int i = 0; i < numbers.size(); i++) {
        cout << numbers[i] << " ";
    }
    return 0;
}
```

Open

Q3.cpp
~/Desktop/22BRS1327

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

using namespace std;

int main() {
    vector<int> numbers;
    int numOfElements;

    cout << "Enter the number of elements: ";
    cin >> numOfElements;

    for (int i = 0; i < numOfElements; i++) {
        int value;
        cin >> value;
        numbers.push_back(value);
    }

    cout << "Elements in the vector: ";
    for (int i = 0; i < numOfElements; i++) {
        cout << numbers[i] << " ";
    }

    cout << endl << "Deleting the last element" << endl;
    numbers.pop_back();

    cout << "Elements in the vector after deletion: ";
    for (int i = 0; i < numbers.size(); i++) {
        cout << numbers[i] << " ";
    }

    return 0;
}
```

Output:

madhuramsinh@kali: ~/Desktop/22BRS1327

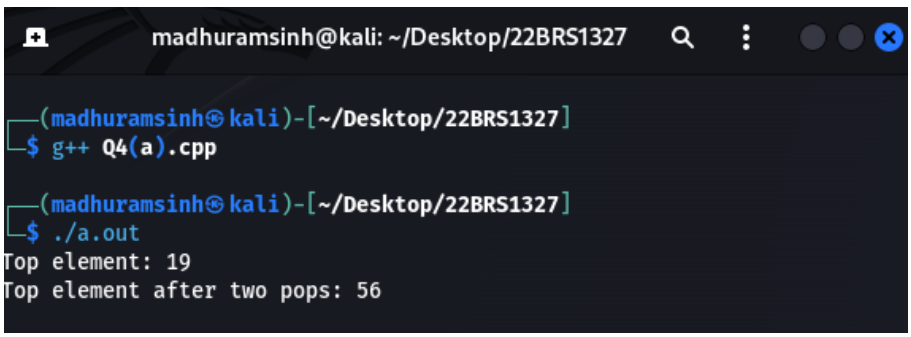
```
┌──(madhuramsinh㉿kali)-[~/Desktop/22BRS1327]
└─$ g++ Q3.cpp

┌──(madhuramsinh㉿kali)-[~/Desktop/22BRS1327]
└─$ ./a.out
Enter the number of elements: 6
23 44 5 12 66 1
Elements in the vector: 23 44 5 12 66 1
Deleting the last element
Elements in the vector after deletion: 23 44 5 12 66

┌──(madhuramsinh㉿kali)-[~/Desktop/22BRS1327]
└─$
```

Q4(a)

Code:

```
#include <iostream>

#include <stack>

using namespace std;

int main() {

   stack<int> myStack;

   myStack.push(34);

   myStack.push(45);

   myStack.push(56);

   myStack.push(22);

   myStack.push(19);

   cout << "Top element: " << myStack.top() << endl;

   myStack.pop();

   myStack.pop();

   cout << "Top element after two pops: " << myStack.top() << endl;

   return 0;

}
```

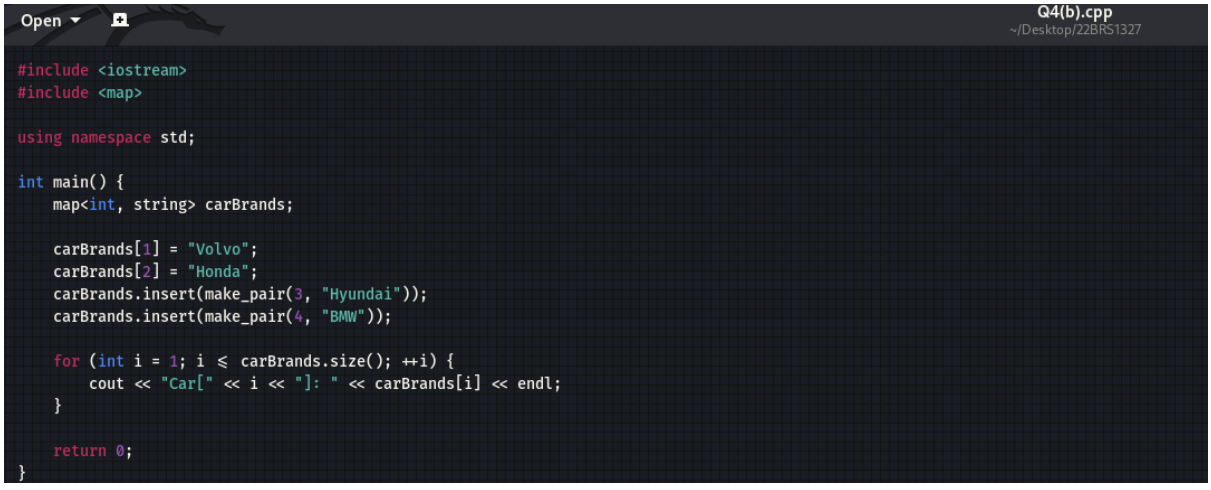
Output:



Q4(b)

Code:

```
#include <iostream>

#include <map>

using namespace std;

int main() {

   map<int, string> carBrands;

   carBrands[1] = "Volvo";

   carBrands[2] = "Honda";

   carBrands.insert(make_pair(3, "Hyundai"));

   carBrands.insert(make_pair(4, "BMW"));

   for (int i = 1; i <= carBrands.size(); ++i) {

      cout << "Car[" << i << "]: " << carBrands[i] << endl;

   }

   return 0;

}
```



Output: