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LAB MANUAL 10

Lab task 1

```cpp
#include<bits/stdc++.h>
using namespace std;
int main(){
vector<int>vip;
cout<<"Enter numbers to be added\n";
for(int i=0;i<5;i++){
int n;
cin>>n;
vip.push_back(n);
}
cout<<endl;
for(int i=0;i<5;i++){
cout<<vip[i]<<" ";
}
cout<<endl;
vip.push_back(5);
for(int i=0;i<vip.size();i++){
cout<<vip[i]<<" ";
}
cout<<endl;
vip.erase(vip.begin()+5);
for(int i=0;i<vip.size();i++){
cout<<vip[i]<<" ";
}
return 0;
}
```

```
/tmp/6gtCJscL4d.o
Enter numbers to be added
5
6
3
1
3
5 6 3 1 3
5 6 3 1 3 5
5 6 3 1 3
```

Lab Task 2

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

using namespace std;

int main() {
    int numPairs;
    cout << "Enter the number of name/grade pairs: ";
    cin >> numPairs;
    vector<string> names;
    vector<int> grades;
```

```cpp
for (int i = 0; i < numPairs; ++i) {
    string name;
    int grade;
    cout << "Enter name #" << i + 1 << ": ";
    cin >> name;
    cout << "Enter grade for " << name << ": ";
    cin >> grade;
    names.push_back(name);
    grades.push_back(grade);
}
double mean = 0.0;
for (int grade : grades) {
    mean += grade;
}
mean /= grades.size();
cout << "Mean of grades: " << mean << endl;
sort(grades.begin(), grades.end());
double median;
int size = grades.size();
if (size % 2 == 0) {
    median = (grades[size / 2 - 1] + grades[size / 2]) / 2.0;
}
else {
    median = grades[size / 2];
}
cout << "Median of grades: " << median << endl;
int mode = grades[0];
int maxCount = 1;
int currentCount = 1;
for (int i = 1; i < size; ++i) {
    if (grades[i] == grades[i - 1]) {
        currentCount++;
    }
    else {
        currentCount = 1;
    }
    if (currentCount > maxCount) {
```

```cpp
            maxCount = currentCount;
            mode = grades[i];
        }
    }
    cout << "Mode of grades: " << mode << endl;
    cout << "Students with the mode as their grade: ";
    for (int i = 0; i < size; ++i) {
        if (grades[i] == mode) {
            cout << names[i] << " ";
        }
    }
    cout << endl;
    return 0;
}
```

```
/tmp/LzFBFcJYYP.o
Enter the number of name/grade pairs: 2
Enter name #1: Hamdan
Enter grade for Hamdan: 90
Enter name #2: Aliyan
Enter grade for Aliyan: 80
Mean of grades: 85
Median of grades: 85
Mode of grades: 80
Students with the mode as their grade:
    Hamdan
c
dash: 2: c: not found
```