

## Lab manual 10:

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### Task 1:

```
#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;
}
```

```
Enter numbers to be added
4
3
2
5
6

4 3 2 5 6
4 3 2 5 6 5
```

### Task 2:

```

#include <bits/stdc++.h>
using namespace std;
int main() {
    vector<string> name;
    vector<int> grad;
    int num;
    cout << "How many students do you have: ";
    cin >> num;
    int sum = 0;
    for (int i = 0; i < num; i++) {
        string student_name;
        cout << "Enter name of " << i + 1 << " student: ";
        cin >> student_name;
        name.push_back(student_name);
        int grade;
        cout << "Enter grade of " << i + 1 << " student: ";
        cin >> grade;
        grad.push_back(grade);
        sum = sum + grade;
    }
    int mean = sum / num;
    cout << "The mean is " << mean << endl;
    if (num % 2 == 0) {
        int y = num / 2;
        int med = (grad[y] + grad[y - 1]) / 2;
        cout << "The median of grades is " << med << endl;
    } else {
        int x = num / 2;
        cout << "The median of grades is " << grad[x] << endl;
    }

    int modeCount = 0;
    int modeValue = grad[0];
    int currentCount = 1;
    for (int i = 1; i < num; i++) {
        if (grad[i] == grad[i - 1]) {
            currentCount++;
        } else {
            if (currentCount > modeCount) {
                modeCount = currentCount;
                modeValue = grad[i - 1];
            }
            currentCount = 1;
        }
    }

    if (currentCount > modeCount) {
        modeCount = currentCount;
        modeValue = grad[num - 1];
    }
    cout << "The mode of grades is " << modeValue << endl;
    cout << "Names of students with the mode grade:" << endl;
    for (int i = 0; i < num; i++) {
        if (grad[i] == modeValue) {
            cout << name[i] << endl;
        }
    }
    return 0;
}

```

```
How many students do you have: 3
Enter name of 1 student: dan
Enter grade of 1 student: 56
Enter name of 2 student: dun
Enter grade of 2 student: 78
Enter name of 3 student: lila
Enter grade of 3 student: 65
The mean is 66
The median of grades is 78
The mode of grades is 56
Names of students with the mode grade:
dan
-----
Process exited after 18.89 seconds with return value 0
Press any key to continue . . .
```