

Homework 1

Symmetric Difference (25%)

Given two arrays of integers, `arr1` and `arr2`. Print an array containing all the elements that are present in either `arr1` or `arr2`, but not both.

Symmetric Difference

```
# Input
1 2 3
2 3 4
# Output
1 4
```

Count Frequency (25%)

Given a string contains only lowercase letters.
Count frequency for each letter.

Count Frequency

```
# Input
```

```
abc
```

```
# Output
```

```
1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
```

Contest Ranking (25%)

Given contest results (vector<Team>).

```
class Team
{
    string name;
    // Time to solve each problem, -1 means not solved
    vector<int> problems;
};
```

Contest Ranking

Please rank them according to following rules:

1. Number of problems solved
2. Sum of time to solve problem

Contest Ranking

```
class Team { /* ... */ };  
void rank_teams(vector<Team>&);
```


Salary (25%)

Given this struct:

```
class Employee
{
    string name;
    int age;
    int salary;
    string department;
};
```

Salary

Write a function that takes an array of Employee structures and returns the average salary of employees in each department (round down to integer). The output should be array of pair contains department names and average salaries.

```
vector<pair<string, int>> calculate_average(const vector<Emp>
```

