Find Pair Given Difference

> 在数组中查询差值为N的数对

首先对数组进行排序，然后从前开始遍历

对于每一个arr[i]，令target = arr[i] + N，并且在 arr[i + 1 ~ L - 1] 之间进行二分查找，查询是否有元素等于target

```
#include <bits/stdc++.h>

using namespace std;

bool binarySearch(vector<int> &arr, int left, int right, int target) {
    if (left > right) return false;
    if (left == right) return target == arr[left];
    while (left <= right) {
        int mid = left + (right - left) / 2;
        if (arr[mid] == target) return true;
        else if (arr[mid] < target) left = mid + 1;
        else right = mid - 1;
    }
    return false;
}

int findPairs(vector<int> &arr, int &L, int &N) {
    sort(arr.begin(), arr.end());
    for (int i = 0; i < L - 1; ++i) {
        if (binarySearch(arr, i + 1, L - 1, arr[i] + N)) {
            return 1;
        }
    }
    return -1;
}



int main() {
    int T;
    scanf("%d", &T);
    while (T--) {
        int L, N, num;
        vector<int> arr;
        scanf("%d %d", &L, &N);
        for (int i = 0; i < L; ++i) {
            scanf("%d", &num);
            arr.push_back(num);
        }
        printf("%d\n", findPairs(arr, L, N));

    }
```

```
    return 0;
}
```