

Assignment

```
1 // include <stdio.h>
2 int BinarySearch( int A[], int n, int x, bool sf)
3 {
4     int low = 0, high = n - 1, result = -1;
5     while (low <= high) {
6         int mid = (low + high) / 2;
7         if (A[mid] == x) {
8             result = mid;
9             if (sf) {
10                 high = mid - 1;
11             }
12             else {
13                 low = mid + 1;
14             }
15         }
16         else if (x < A[mid]) high = mid - 1;
17         else low = mid + 1;
18     }
19     return result;
20 }
21
22 int main() {
23     int t;
24     scanf("%d", &t);
25     while (t--) {
26         int n;
27         scanf("%d", &n);
28         int a[n];
29         for (int i = 0; i < n; i++)
30             scanf("%d", &a[i]);
```

```

int Key;
scanf("%d", &Key);
int FirstIndex = BinarySearch(a, n, Key, true);
int last;
if (FirstIndex != -1) {
    printf("Count of %d is %d", Key, FirstIndex);
}
else {
    int lastIndex = BinarySearch(a, n, Key, false);
    printf("Count of %d is %d", Key, lastIndex - FirstIndex + 1);
}
return 0;
}

```

2.

```

#include <stdio.h>
#include <stdbool.h>
int main() {
    int t;
    scanf("%d", &t);
    while (t--) {
        int n;
        scanf("%d", &n);
        int arr[n];
        int i;
        for (i = 0; i < n; i++) {
            scanf("%d", &arr[i]);
        }
        int j = 0;
        bool found;
    }
}

```

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for (i = 0; i < n; i++)
    for (j = 0; j < n; j++)
        for (k = 0; k < n; k++)
            if (a[i] == a[j] || a[i] == a[k] || a[j] == a[k])
                printf("%d %d %d\n", i, j, k);
                found = true;
                goto label;
        }
    }
}

label:
    if (found != true)
        printf("No sequence found");
    }

return 0;
}

```

3. #include <stdio.h>

```

int countPairs (int arr[], int n, int k)
{
    int count = 0;

```

```

    for (int i = 0; i < n; i++)
        for (int j = i + 1; j < n; j++)
            if (arr[i] + arr[j] == k)
                count++;

```

```

    return count;
}

```

```
int main() {  
    int t;  
    scanf("%d", &t);  
    while (t--){  
        int n;  
        scanf("%d", &n);  
        int arr[n];  
        for (int i=0; i<n; i++){  
            scanf("%d", &arr[i]);  
        }  
        int key;  
        scanf("%d", &key);  
        printf("%d", countPairs(arr, n, key));  
    }  
    return 0;  
}
```