

Searching Algorithms – Linear and Binary

Program: Ice cream Parlor

```
#include <stdio.h>
int main() {
    int t, m, n, c = 0;
    scanf("%d", &t);
    for (int i = 0; i < t; i++) {
        c = 0;
        scanf("%d %d", &m, &n);
        int arr[n];
        for (int j = 0; j < n; j++) {
            scanf("%d", &arr[j]);
        }
        for (int a = 0; a < n - 1; a++) {
            for (int b = a + 1; b < n; b++) {
                if (arr[a] + arr[b] == m) {
                    printf("%d %d\n", a + 1, b + 1);
                    c = 1; break;
                }
            }
        }
        if (c == 0) break;
    }
    return 0;
}
```

Sample Input

2
4
5
14 532
4
4
22 43

Sample Output

14
12

Program: Missing Number

```
#include <stdio.h>
int main()
{
    int n, m, c, cl = 0, co;
    scanf("%d", &n);
    int arr[n];
    for (int a = 0; a < n; a++)
    {
        scanf("%d", &arr[a]);
    }
    scanf("%d", &m);
    int brr[m], ans[m];
    for (int b = 0; b < m; b++)
    {
        scanf("%d", &brr[b]);
    }
    for (int j = 0; j < m; j++)
    {
        c = 0;
        for (int i = 0; i < n; i++)
        {
            if (arr[i] == brr[j])
            {
                c++;
                arr[i] = -1;
            }
        }
        if (c == 0)
        {
            ans[cl] = brr[j];
            cl++;
        }
    }
    for (int a = 0; a < cl; a++)
    {
        c = 0;
        for (int b = 0; b < m; b++)
        {
            if (arr[a] == brr[b])
            {
                c++;
            }
        }
        if (c == 1)
        {
            ans[a] = brr[b];
        }
    }
    for (int i = 0; i < cl; i++)
    {
        printf("%d ", ans[i]);
    }
    return 0;
}
```

```
if (ans[b] < ans[a])
    cl++;
}
int temp = ans[a];
ans[a] = ans[cl];
ans[cl] = temp;
}
for (int i = 0; i < cl; i++)
    printf("%d ", ans[i]);
return 0;
}
```

Sample Input

```
10
203 204 205 206 207
208 203 204 205 206
13
203 204 205 206
207 208 209 210
201 202 203 204 205
```

Sample Output

```
204 205 206
```


Program: Sherlock and Array

```
#include <stdio.h>
int main()
{
    int t, n, Is, es, m;
    scanf("%d", &t);
    for (int i = 0; i < t; i++)
    {
        Is = 0;
        es = 0;
        scanf("%d", &n);
        int arr[n];
        for (int j = 0; j < n; j++)
            scanf("%d", &arr[j]);
        m = n/2;
        if (arr[m] == 0)
            for (m = 0; arr[m] == 0 && m < n; m++);
        for (int j = 0; j <= m; j++)
            Is = Is + arr[j];
        for (int j = m; j < n; j++)
            es = es + arr[j];
        printf("%d\n", (Is == es) ? "YES" : "NO");
    }
    return 0;
}
```

Sample Input

2

3

123

4

1233

Sample Output

NO

YES

~~NO~~ 12/25