

NAMUNAVIY MASALALAR

1-masala. Eng katta umumiy bo'luvchi juftliklar

n ta son berilgan. Yonma-yon joylashgan sonlar ichida EKUB > 1 bo'lgan juftliklar sonini toping.

Yechim (math.gcd)

```
import math

n = int(input())
a = list(map(int, input().split()))

cnt = 0
for i in range(n - 1):
    if math.gcd(a[i], a[i + 1]) > 1:
        cnt += 1

print(cnt)
```

2-masala. K ga teng yoki katta birinchi indeks

Saralangan massiv va K berilgan. Qiymati K dan kichik bo'lmagan birinchi indeksni toping. Agar yo'q bo'lsa -1.

Yechim (bisect)

```
import bisect

n = int(input())
a = list(map(int, input().split()))
k = int(input())

pos = bisect.bisect_left(a, k)
print(pos if pos < n else -1)
```

3-masala. Eng kichik K ta element yig'indisi

Massiv va K berilgan. Eng kichik K ta element yig'indisini toping.

Yechim (heapq)

```
import heapq

n, k = map(int, input().split())
a = list(map(int, input().split()))

heapq.heapify(a)
s = 0
for _ in range(k):
    s += heapq.heappop(a)
```

```
print(s)
```

4-masala. Eng ko‘p uchragan satr

n ta satr berilgan. Eng ko‘p uchragan satrni chiqaring
(teng bo‘lsa — leksikografik kichigini).

Yechim (Counter)

```
from collections import Counter

n = int(input())
arr = [input().strip() for _ in range(n)]

cnt = Counter(arr)
mx = max(cnt.values())
ans = min(s for s in cnt if cnt[s] == mx)
print(ans)
```

5-masala. BFS — minimal qadamlar

$n \times m$ panjara berilgan (0 — bo‘sh, 1 — devor).
(1,1) dan (n,m) ga eng kam qadamlar sonini toping.

Yechim (deque)

```
from collections import deque

n, m = map(int, input().split())
grid = [list(map(int, input().split())) for _ in range(n)]

dist = [[-1]*m for _ in range(n)]
dq = deque([(0, 0)])
dist[0][0] = 0

dx = [1, -1, 0, 0]
dy = [0, 0, 1, -1]

while dq:
    x, y = dq.popleft()
    for k in range(4):
        nx, ny = x + dx[k], y + dy[k]
        if 0 <= nx < n and 0 <= ny < m:
            if grid[nx][ny] == 0 and dist[nx][ny] == -1:
                dist[nx][ny] = dist[x][y] + 1
                dq.append((nx, ny))

print(dist[n-1][m-1])
```

6-masala. Eng yaqin qiymatlar soni

Saralangan massiv berilgan. Minimal farqqa ega bo'lgan juftliklar sonini toping.

Yechim (sort + chiziqli yurish)

```
n = int(input())
a = list(map(int, input().split()))

a.sort()
mn = min(a[i+1] - a[i] for i in range(n-1))
cnt = 0
for i in range(n-1):
    if a[i+1] - a[i] == mn:
        cnt += 1

print(cnt)
```

7-masala. Toq chastotali elementlar

Ketma-ketlikda toq marta uchragan barcha elementlarni o'sish tartibida chiqaring.

Yechim (Counter)

```
from collections import Counter

n = int(input())
a = list(map(int, input().split()))

cnt = Counter(a)
res = sorted(x for x in cnt if cnt[x] % 2 == 1)
print(*res)
```

8-masala. Eng katta K ta element o'rtachasi

Massiv va K berilgan. Eng katta K ta elementning o'rtacha qiymatini toping.

Yechim (heapq)

```
import heapq

n, k = map(int, input().split())
a = list(map(int, input().split()))

largest = heapq.nlargest(k, a)
print(sum(largest) / k)
```

9-masala. Kombinatsiyalar soni

n va k berilgan. $C(n,k)$ ni hisoblang.

```
Yechim(math.comb)
```

```
import math
```

```
n, k = map(int, input().split())  
print(math.comb(n, k))
```

10-masala. Tez kiritish bilan maksimal yig'indi

n ta son berilgan (n katta). Eng katta elementni va barcha sonlar yig'indisini chiqaring.

```
Yechim(sys.stdin.readline)
```

```
import sys  
input = sys.stdin.readline
```

```
n = int(input())  
a = list(map(int, input().split()))
```

```
print(max(a), sum(a))
```