King

by: **Arya Sudewa**

Time Limit: 1 s
Memory Limit: 256 MB

Deskripsi

King Dusra adalah salah satu raja terkuat di negara Aesilanom. Saat ini, ia sedang berperang dengan dua raja kuat lainnya, yaitu King Saihtam dan King Akza. Kedua raja tersebut telah mengirim banyak prajurit mereka ke medan perang untuk menyerang King Dusra. Namun, King Dusra sama sekali tidak takut, karena ia dikenal sebagai raja yang sangat strategis, taktis, dan expert dalam bidangnya.

Pertempuran berlangsung di medan perang berbentuk grid berukuran **N** x **N**. Koordinat (**R**, **C**) menunjukkan posisi baris **R** dan kolom **C** dari suatu kotak di medan perang. King Saihtam dan King Akza mengirim **M** prajurit untuk maju ke dalam medan perang, di mana prajurit ke-i memiliki healthpoint $\mathbf{H_i}$ dan berada di koordinat ($\mathbf{X_i}$, $\mathbf{Y_i}$).

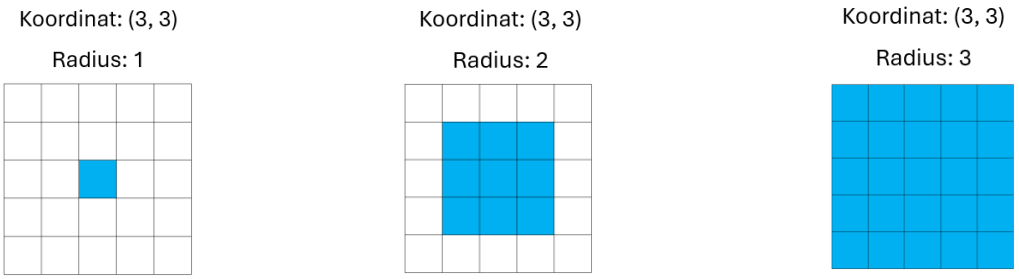
Setelah melakukan observasi yang matang, King Dusra memutuskan untuk melancarkan **S** serangan terhadap prajurit-prajurit di medan perang. King Dusra dapat melakukan tiga tipe serangan berikut:

1. **Serangan Horizontal**: serangan ini memberikan damage **D** ke semua prajurit yang terletak di baris **K**.
2. **Serangan Vertikal**: serangan ini memberikan damage **D** ke semua prajurit yang terletak di kolom **K**.
3. **Serangan Formasi X**: serangan ini memberikan damage **D** ke semua prajurit yang berada di diagonal utama (**1**, **1**) hingga (**N**, **N**) dan diagonal sekunder (**1**, **N**) hingga (**N**, **1**).

"*Memberikan damage **D***" berarti mengurangi healthpoint prajurit yang terkena serangan sebesar **D**. Setiap serangan memiliki nilai damage dan target yang berbeda-beda, di mana serangan ke-i memiliki tipe serangan $\mathbf{Z_i}$, nilai damage $\mathbf{D_i}$, dan area target $\mathbf{K_i}$ (khusus untuk serangan tipe 3, $\mathbf{K_i}$ selalu bernilai 0 karena posisi serangan ditentukan oleh diagonal medan

perang). Seorang prajurit dianggap mati jika memiliki nilai healthpoint kurang dari atau sama dengan 0 ($\mathbf{H_i} \leq 0$).

Setelah semua **S** serangan selesai dilakukan, King Dusra memerintahkan prajuritnya untuk memeriksa kondisi medan perang. King Dusra akan memberikan **T** perintah, di mana perintah ke-i meminta jumlah prajurit yang masih hidup dan total nilai healthpoint mereka di area yang berpusat di koordinat ($\mathbf{A_i}$, $\mathbf{B_i}$) dengan radius $\mathbf{P_i}$. Pengertian "*radius* $\boldsymbol{P_i}$" dari sebuah perintah dapat dijelaskan melalui contoh berikut:



Batasan

- $1 \leq \mathbf{N} \leq 10^3$
- $0 \leq \mathbf{M}, \mathbf{S}, \mathbf{T} \leq 10^6$
- $1 \leq \mathbf{H_i}, \mathbf{D_i} \leq 10^9$
- $1 \leq \mathbf{X_i}, \mathbf{Y_i}, \mathbf{K_i}, \mathbf{A_i}, \mathbf{B_i}, \mathbf{P_i} \leq \mathbf{N}$
- $1 \leq \mathbf{Z_i} \leq 3$

Format Masukan

Masukan diberikan dalam format berikut:

```
N M S T
X1 Y1 H1
X2 Y2 H2
…
XM YM HM
Z1 D1 K1
Z2 D2 K2
…
ZS DS KS
A1 B1 P1
A2 B2 P2
…
AT BT PT
```

Format Keluaran

Untuk setiap perintah:

1. Jika terdapat prajurit yang masih hidup di dalam area yang dimaksud, keluarkan: [**Terdapat {X} prajurit dengan jumlah healthpoint {Y}.**]
   - **X** adalah jumlah prajurit yang masih hidup di area tersebut.
   - **Y** adalah total healthpoint dari semua prajurit yang masih hidup di area tersebut.
2. Jika tidak ada prajurit yang masih hidup di area tersebut, keluarkan: [**Tidak ada prajurit di area tersebut.**]

Contoh Masukan

```
5 4 3 3
1 1 22
2 4 6
4 1 12
5 3 9
2 12 1
3 6 0
1 3 5
4 2 2
4 1 1
3 3 3
```

Contoh Keluaran

```
Terdapat 1 prajurit dengan jumlah healthpoint 6.
Tidak ada prajurit di area tersebut.
Terdapat 2 prajurit dengan jumlah healthpoint 10.
```

Penjelasan Contoh

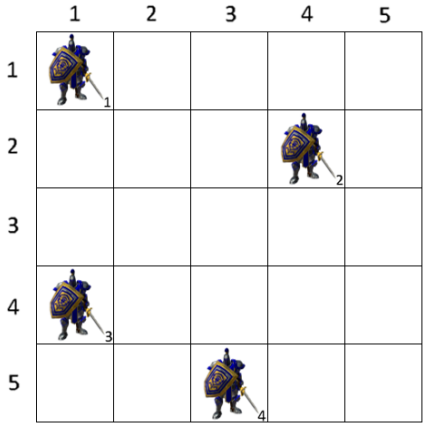
Dari input, didapatkan informasi sebagai berikut:

- Medan perang berukuran 5 x 5. (**N** = 5)
- Terdapat 4 prajurit di medan perang. (**M** = 4)
  Informasi dari masing-masing prajurit:
  a. Prajurit 1: koordinat (1, 1) dengan healthpoint 22.
  b. Prajurit 2: koordinat (2, 4) dengan healthpoint 6.
  c. Prajurit 3: koordinat (4, 1) dengan healthpoint 12.
  d. Prajurit 4: koordinat (5, 3) dengan healthpoint 9.
- Terdapat 3 serangan. (**S** = 3)
  Informasi dari masing-masing serangan:
  a. Serangan 1: tipe 2 (vertikal), damage 12, dengan target kolom 1.
  b. Serangan 2: tipe 3 (formasi X), damage 6.
  c. Serangan 3: tipe 1 (horizontal), damage 3, dengan target baris 5.

- Terdapat 3 perintah. (**T** = 3)
  Informasi dari masing-masing perintah:
  a. Perintah 1: koordinat (4, 2) dengan radius 2.
  b. Perintah 2: koordinat (4, 1) dengan radius 1.
  c. Perintah 3: koordinat (3, 3) dengan radius 3.

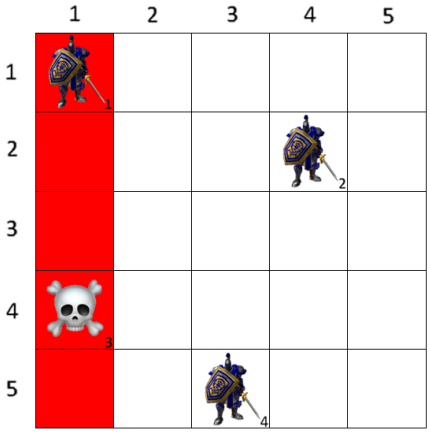
Untuk mempermudah penjelasan, akan diberikan ilustrasi dari setiap serangan dan perintah yang dilakukan. Pada ilustrasi di bawah, angka di sudut kanan bawah dari setiap prajurit menunjukkan indeks prajurit tersebut.

- Kondisi awal



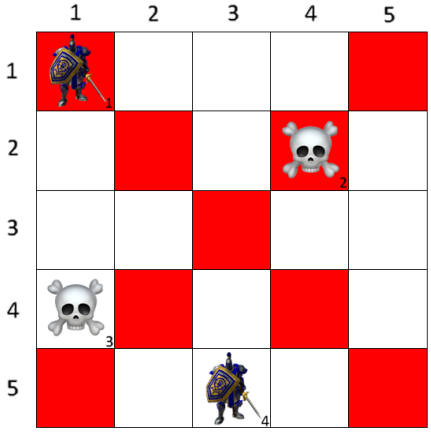
Healthpoint setiap prajurit
Prajurit 1: **22**
Prajurit 2: **6**
Prajurit 3: **12**
Prajurit 4: **9**

- Serangan 1 (vertikal, damage 12, target kolom 1)



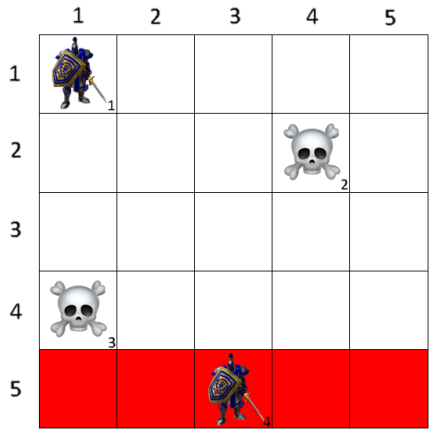
Healthpoint setiap prajurit
Prajurit 1: 22 - 12 = **10**
Prajurit 2: **6**
Prajurit 3: 12 - 12 = **0**
Prajurit 4: **9**

- Serangan 2 (formasi X, damage 6)



Healthpoint setiap prajurit
Prajurit 1: 10 - 6 = **4**
Prajurit 2: 6 - 6 = **0**
Prajurit 3: **0**
Prajurit 4: **9**

- Serangan 3 (horizontal, damage 3, target baris 5)



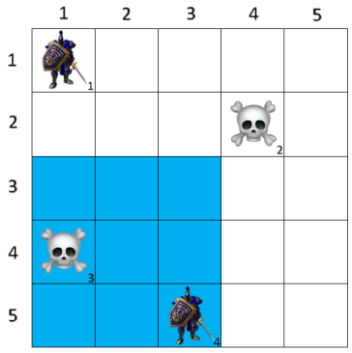
Healthpoint setiap prajurit
Prajurit 1: **4**
Prajurit 2: **0**
Prajurit 3: **0**
Prajurit 4: 9 - 3 = **6**

Setelah semua serangan dilakukan, berikut adalah nilai healthpoint setiap prajurit:

- Prajurit 1: **4**
- Prajurit 2: **0**
- Prajurit 3: **0**
- Prajurit 4: **6**

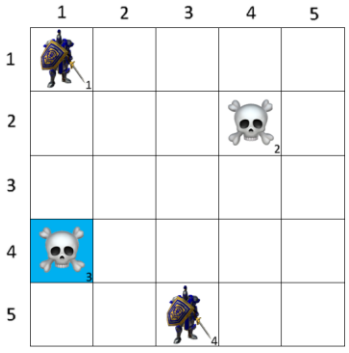
Selanjutnya, berikut adalah ilustrasi dari setiap perintah pengecekan healthpoint:

Perintah 1
Koordinat: (4, 2)
Radius: 2



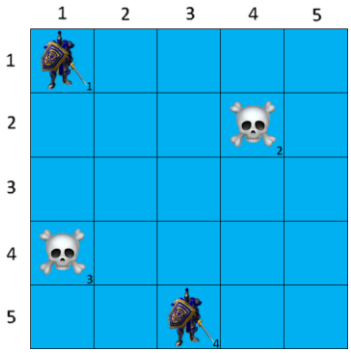
Dalam area pengecekan, prajurit yang masih hidup hanya **1**, yaitu prajurit 4 dengan healthpoint **6**.

Perintah 2
Koordinat: (4, 1)
Radius: 1



Tidak ada prajurit yang masih hidup dalam area pengecekan.

Perintah 3
Koordinat: (3, 3)
Radius: 3



Dalam area pengecekan, prajurit yang masih hidup ada **2**, yaitu prajurit 1 dan prajurit 4, di mana total healthpoint mereka adalah 4 + 6 = **10**.

King

by: **Arya Sudewa**

Time Limit: 1 s
Memory Limit: 256 MB

Description

King Dusra is one of the strongest kings in the country of Aesilanom. Currently, he is at war with two other powerful kings, King Saihtam and King Akza. These two kings have sent many of their soldiers to the battlefield to attack King Dusra. However, King Dusra is not afraid at all, as he is known to be a highly strategic, tactical, and expert king.

The battle takes place on a grid-shaped battlefield of size **N** x **N**. The coordinates (**R**, **C**) represent the row **R** and column **C** position of a square on the battlefield. King Saihtam and King Akza have sent **M** of their soldiers to advance into the battlefield, where the i^{th} soldier has $\mathbf{H}_i$ healthpoint and is located at coordinates ($\mathbf{X}_i$, $\mathbf{Y}_i$).

After carefully observing the battlefield, King Dusra launches **S** attacks on the soldiers in the battlefield. King Dusra can carry out three types of attacks:

1. **Horizontal Attack**: this attack deals **D** damage to all soldiers located in row **K**.
2. **Vertical Attack**: this attack deals **D** damage to all soldiers located in column **K**.
3. **X Formation Attack**: this attack deals **D** damage to all soldiers located along the diagonal from (**1**, **1**) to (**N**, **N**) and the diagonal from (**1**, **N**) to (**N**, **1**).

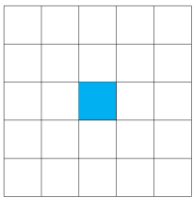
"*Deals **D** damage*" means reducing the healthpoint of the affected soldiers by **D**. Each attack will have a different damage value and target, where the i^{th} attack has attack type $\mathbf{Z}_i$, damage value $\mathbf{D}_i$, and targeted area $\mathbf{K}_i$ (for attack type 3, $\mathbf{K}_i$ is always 0 because the attack's position is predetermined by the diagonals). A soldier is considered dead if their healthpoint are less than or equal to 0 ($\mathbf{H}_i \leq 0$).

After all **S** attacks have been carried out, King Dusra orders his soldiers to inspect the battlefield. King Dusra issues **T** commands, where the i^{th} command requests the total number of surviving soldiers and their total healthpoint in the area centered at ($\mathbf{A}_i$, $\mathbf{B}_i$) with a

radius of $\mathbf{P_i}$. The meaning of "*radius of* $\boldsymbol{P_i}$" of a command can be illustrated with the following examples:

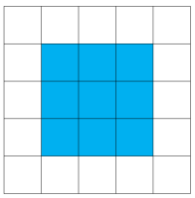
Coordinates: (3, 3)

Radius: 1



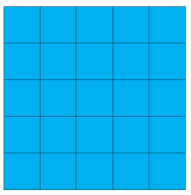
Coordinates: (3, 3)

Radius: 2



Coordinates: (3, 3)

Radius: 3



Constraints

- $1 \leq \mathbf{N} \leq 10^3$
- $0 \leq \mathbf{M}, \mathbf{S}, \mathbf{T} \leq 10^6$
- $1 \leq \mathbf{H_i}, \mathbf{D_i} \leq 10^9$
- $1 \leq \mathbf{X_i}, \mathbf{Y_i}, \mathbf{K_i}, \mathbf{A_i}, \mathbf{B_i}, \mathbf{P_i} \leq \mathbf{N}$
- $1 \leq \mathbf{Z_i} \leq 3$

Input Format

Input is given in the following format:

```
N M S T
X1 Y1 H1
X2 Y2 H2
...
XM YM HM
Z1 D1 K1
Z2 D2 K2
...
ZS DS KS
A1 B1 P1
A2 B2 P2
...
AT BT PT
```

Output Format

For each command:

1. If there are any soldiers still alive in the specified area, output:
   [**Terdapat {X} prajurit dengan jumlah healthpoint {Y}.**]
   - **X** is the number of soldiers still alive in the area.
   - **Y** is the total healthpoint of all soldiers still alive in the area.

2. If there are no soldiers alive in the area, output:
   [**Tidak ada prajurit di area tersebut.**]

Example Input

```
5 4 3 3
1 1 22
2 4 6
4 1 12
5 3 9
2 12 1
3 6 0
1 3 5
4 2 2
4 1 1
3 3 3
```

Example Output

```
Terdapat 1 prajurit dengan jumlah healthpoint 6.
Tidak ada prajurit di area tersebut.
Terdapat 2 prajurit dengan jumlah healthpoint 10.
```

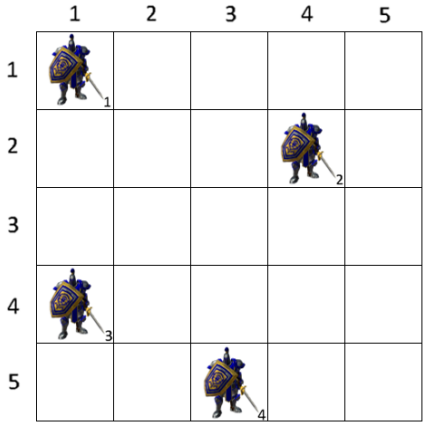
Explanation

From the input, the following information is obtained:

- The battlefield is sized 5 x 5. (**N** = 5)
- There are 4 soldiers on the battlefield. (**M** = 4)
  Information about each soldier:
  a. Soldier 1: coordinates (1, 1) with healthpoint 22.
  b. Soldier 2: coordinates (2, 4) with healthpoint 6.
  c. Soldier 3: coordinates (4, 1) with healthpoint 12.
  d. Soldier 4: coordinates (5, 3) with healthpoint 9.
- There are 3 attacks. (**S** = 3)
  Information about each attack:
  a. Attack 1: type 2 (vertical), damage 12, targeting column 1.
  b. Attack 2: type 3 (X formation), damage 6.
  c. Attack 3: type 1 (horizontal), damage 3, targeting row 5.
- There are 3 commands. (**T** = 3)
  Information about each command:
  a. Command 1: coordinates (4, 2) with radius 2.
  b. Command 2: coordinates (4, 1) with radius 1.
  c. Command 3: coordinates (3, 3) with radius 3.

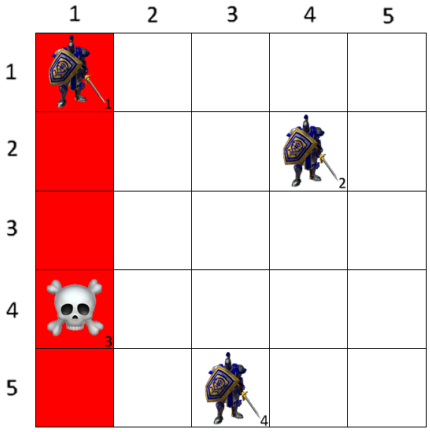
To simplify explanations, an illustration will be pro vided for each attack and command. In the illustrations below, the number in the bottom-right corner of each soldier indicates their index.

- Initial state



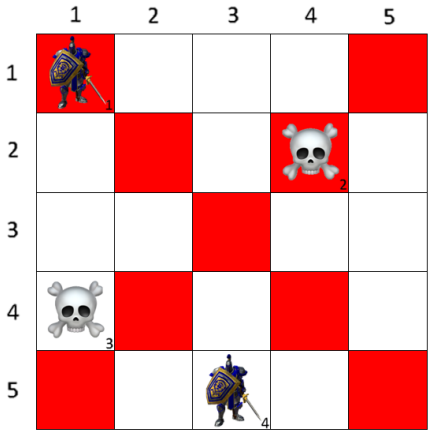
Healthpoint of each soldier
Soldier 1: **22**
Soldier 2: **6**
Soldier 3: **12**
Soldier 4: **9**

- Attack 1 (vertical, damage 12, target column 1)



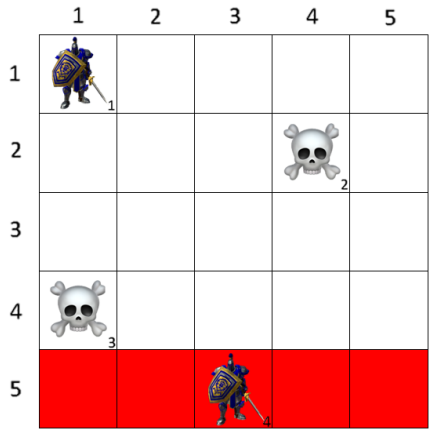
Healthpoint of each soldier
Soldier 1: 22 - 12 = **10**
Soldier 2: **6**
Soldier 3: 12 - 12 = **0**
Soldier 4: **9**

- Attack 2 (X formation, damage 6)



Healthpoint of each soldier
Soldier 1: 10 - 6 = **4**
Soldier 2: 6 - 6 = **0**
Soldier 3: **0**
Soldier 4: **9**

- Attack 3 (horizontal, damage 3, target row 5)



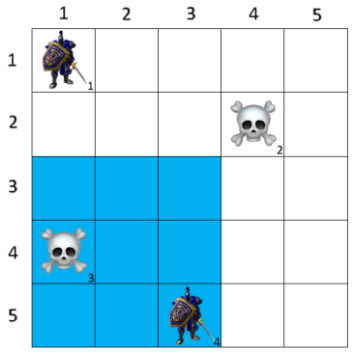
Healthpoint of each soldier
Soldier 1: **4**
Soldier 2: **0**
Soldier 3: **0**
Soldier 4: 9 - 3 = **6**

After all attacks have been executed, the healthpoint of each soldier are as follows:

- Soldier 1: **4**
- Soldier 2: **0**
- Soldier 3: **0**
- Soldier 4: **6**

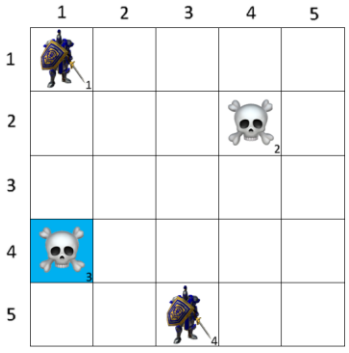
Next, the following illustrations depict each healthpoint check command:

Command 1
Coordinates: (4, 2)
Radius: 2



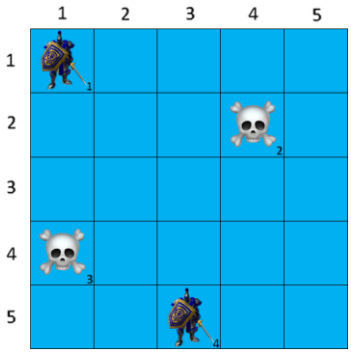
In the checked area, only **1** soldier is still alive, which is soldier 4 with healthpoint **6**.

Command 2
Coordinates: (4, 1)
Radius: 1



There are **no soldiers** alive in the checked area.

Command 3
Coordinates: (3, 3)
Radius: 3



In the checked area, there are **2** soldiers still alive, namely soldier 1 and soldier 4, with a total healthpoint of 4 + 6 = **10**.