

Did you just attack my village?

Data Structures Assignment 2

Linked Lists



2021.4.12

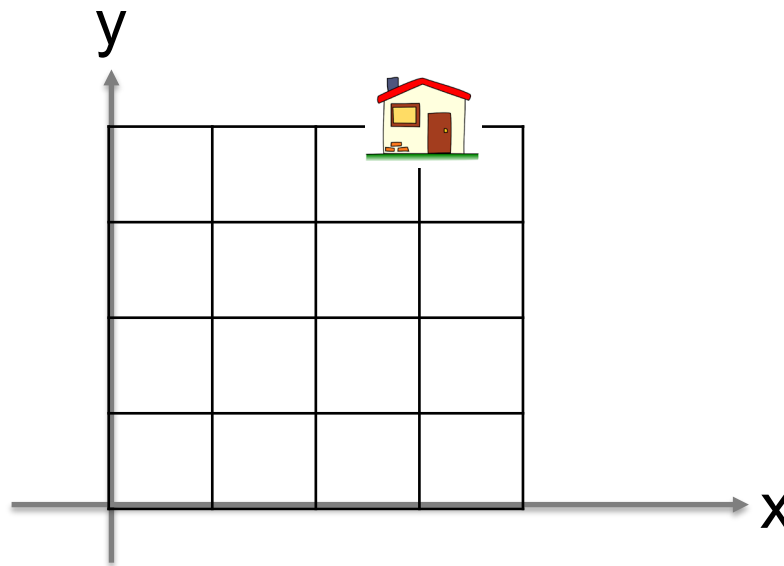
NTHU EECS

Background

- Jennifer loves to play Coin Master
- One day, she shout at Shirley, “Did you just attack my village?”
- Jennifer needs to detect the locations of the remaining houses in her village after being attacked.
- Please write a program to help her.

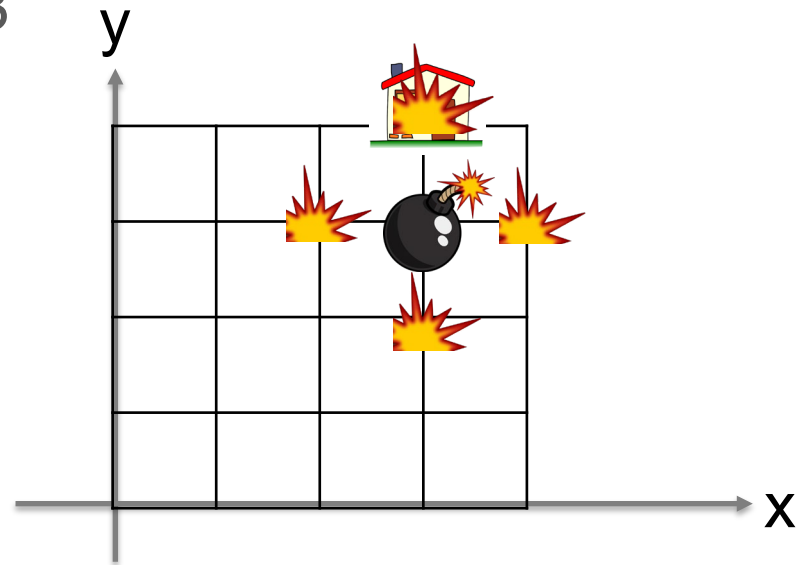
Descriptions – House

- Jennifer can insert houses by using “House x y”
- For example : House 3 4



Descriptions – Bomb

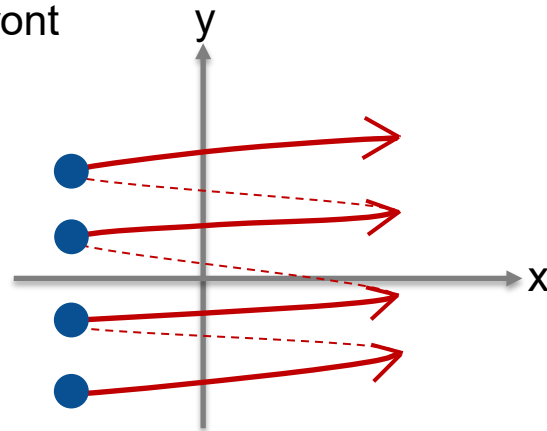
- Shirley can attack Jennifer's village by using "Bomb x y".
- The houses located at (x, y) , $(x+1, y)$, $(x-1, y)$, $(x, y+1)$, $(x, y-1)$ will be vanished
- For example : Bomb 3 3



Descriptions – PrintFront, PrintEnd

- PrintFront: Print out the house locations in Jennifer's village from **left to right and then bottom to top**, that is, in **lexicographic order**.

PrintFront



- : **Start point** to print for each line.
- : **End point** to print for each line.

Descriptions – PrintFront, PrintEnd

- PrintEnd: Print out the house locations in Jennifer's village from **right to left and then top to bottom**, that is, in **reverse lexicographic order**.

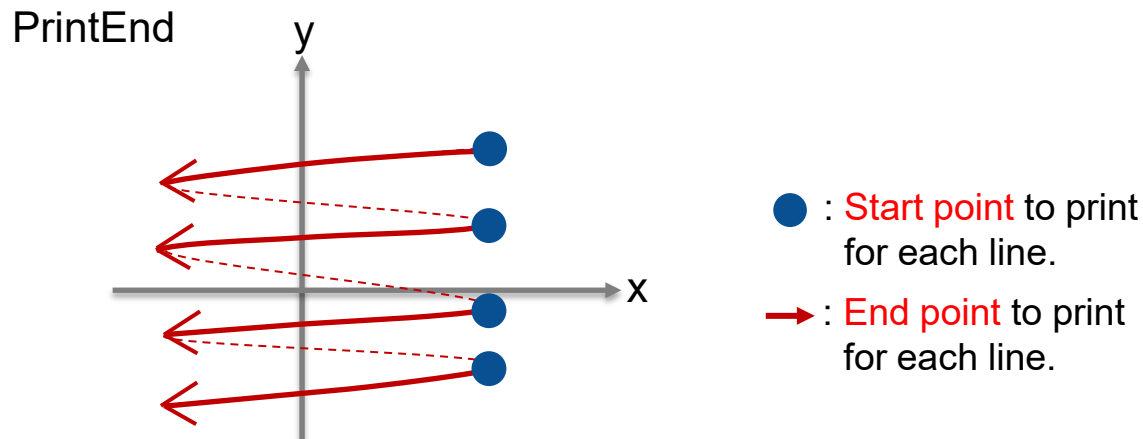
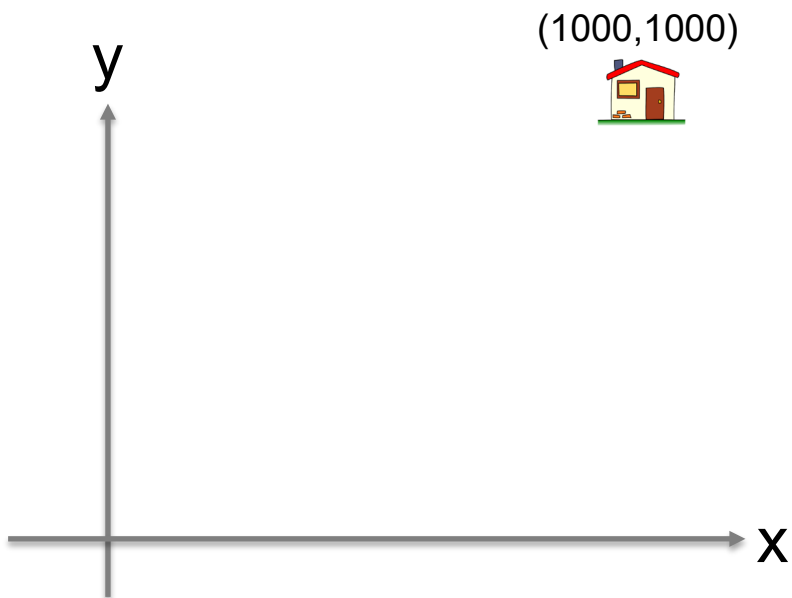


Illustration (1/10)

	Sample Input	Sample Output
The number of instruction →	<div>9 House 1000 1000 House 1 1 House 1 1000 Bomb 2 1000 PrintFront House 500 500 House 501 500 Bomb 1 500 PrintEnd</div>	<div></div>

Illustration (2/10)



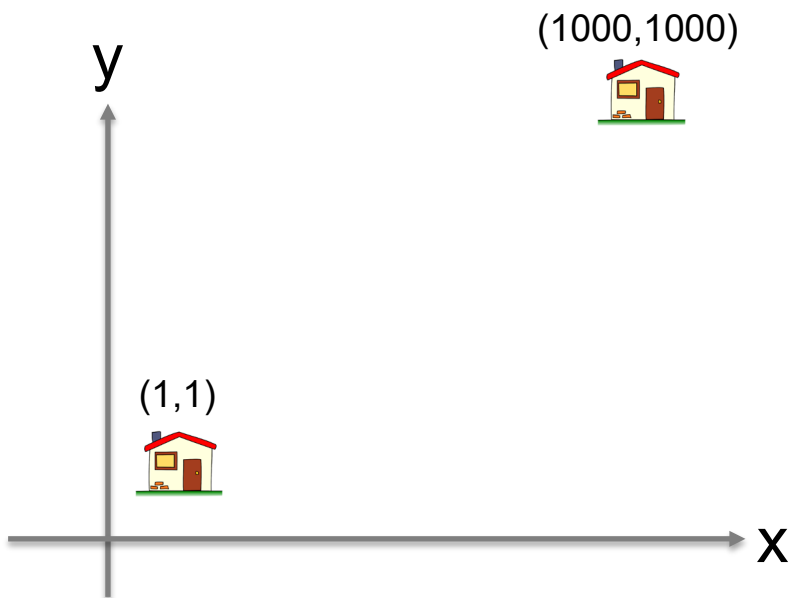
Sample Input

```
9
House 1000 1000
House 1 1
House 1 1000
Bomb 2 1000
PrintFront
House 500 500
House 501 500
Bomb 1 500
PrintEnd
```

Sample Output



Illustration (3/10)



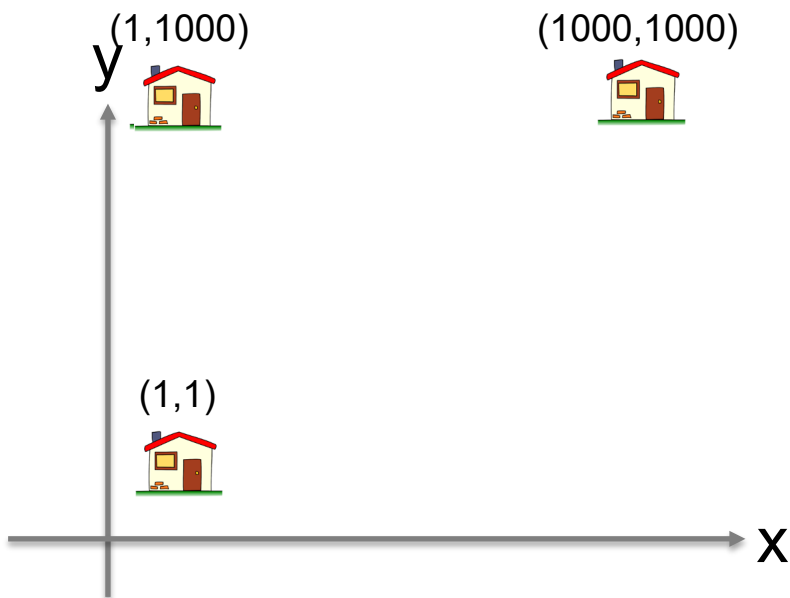
Sample Input

```
9
House 1000 1000
House 1 1
House 1 1000
Bomb 2 1000
PrintFront
House 500 500
House 501 500
Bomb 1 500
PrintEnd
```

Sample Output



Illustration (4/10)



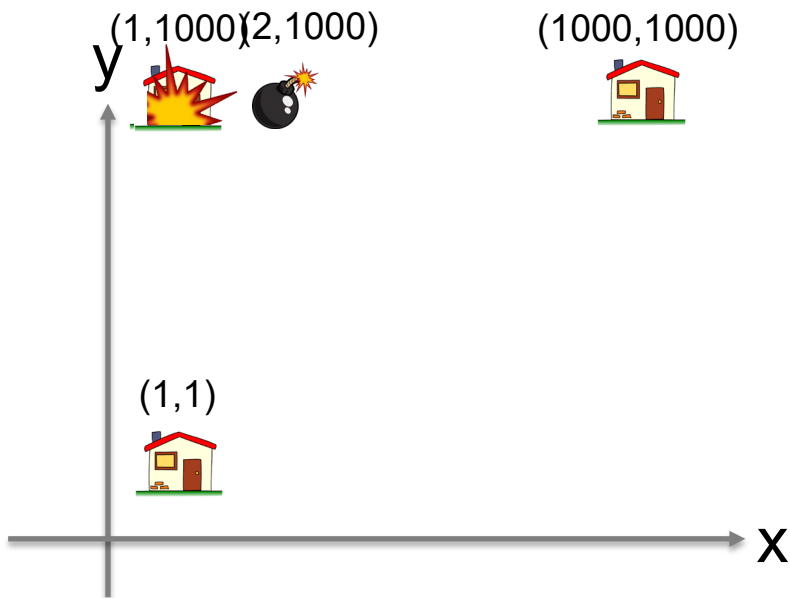
Sample Input

```
9
House 1000 1000
House 1 1
House 1 1000
Bomb 2 1000
PrintFront
House 500 500
House 501 500
Bomb 1 500
PrintEnd
```

Sample Output



Illustration (5/10)



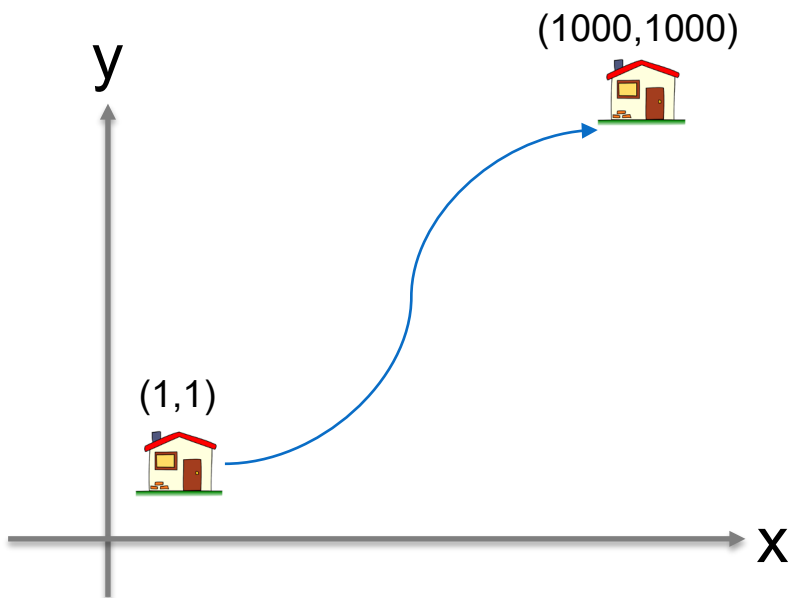
Sample Input

```
9
House 1000 1000
House 1 1
House 1 1000
Bomb 2 1000
PrintFront
House 500 500
House 501 500
Bomb 1 500
PrintEnd
```

Sample Output



Illustration (6/10)



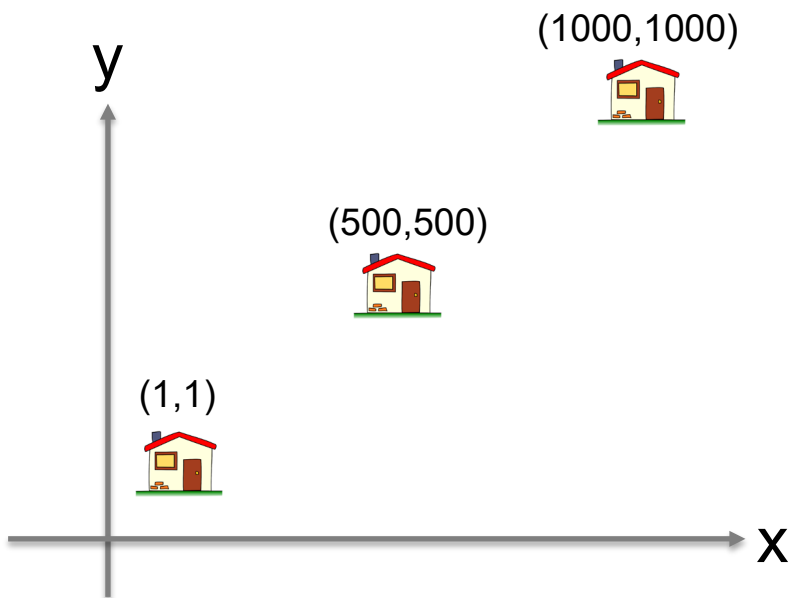
Sample Input

```
9
House 1000 1000
House 1 1
House 1 1000
Bomb 2 1000
PrintFront
House 500 500
House 501 500
Bomb 1 500
PrintEnd
```

Sample Output

```
PrintFront
(1,1)
(1000,1000)
```

Illustration (7/10)



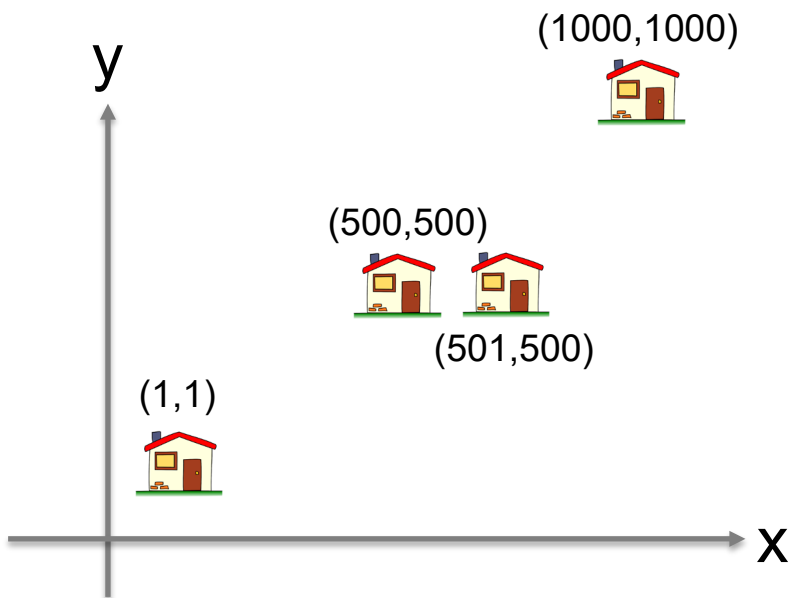
Sample Input

```
9
House 1000 1000
House 1 1
House 1 1000
Bomb 2 1000
PrintFront
House 500 500
House 501 500
Bomb 1 500
PrintEnd
```

Sample Output

```
PrintFront
(1,1)
(1000,1000)
```

Illustration (8/10)



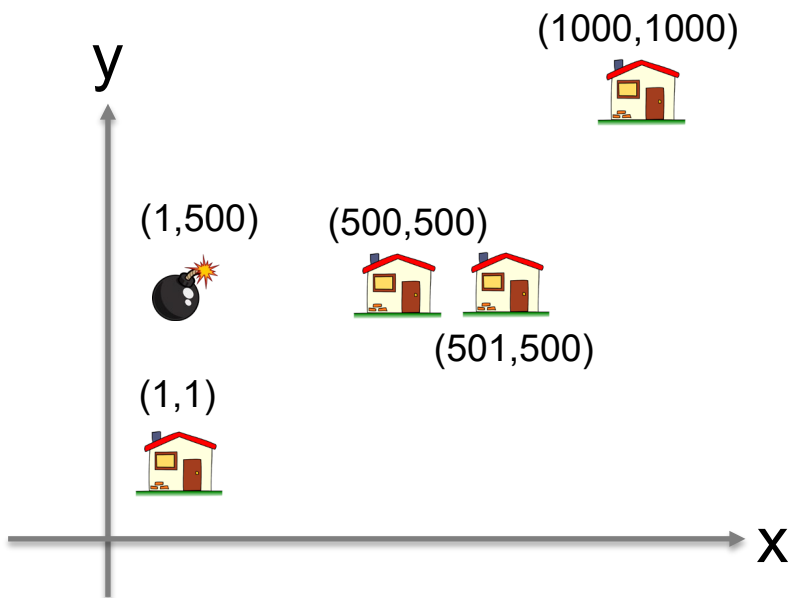
Sample Input

```
9
House 1000 1000
House 1 1
House 1 1000
Bomb 2 1000
PrintFront
House 500 500
House 501 500
Bomb 1 500
PrintEnd
```

Sample Output

```
PrintFront
(1,1)
(1000,1000)
```

Illustration (9/10)



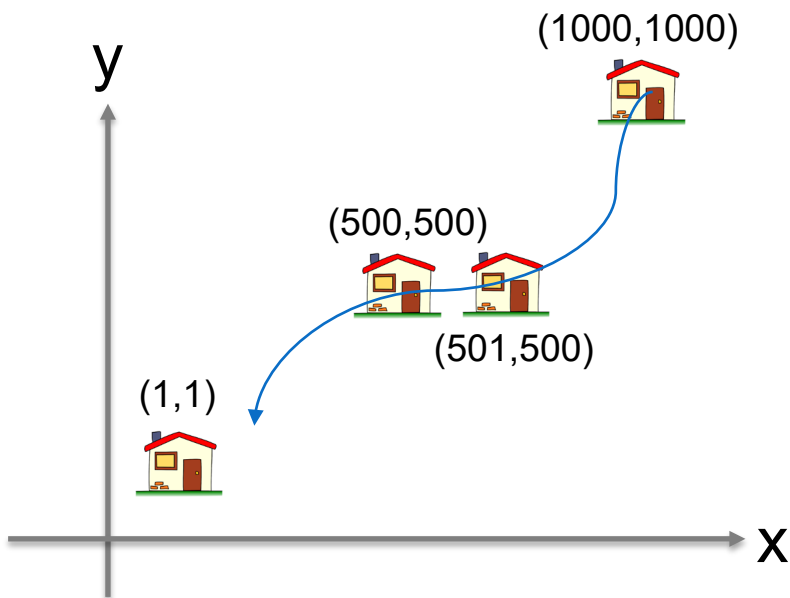
Sample Input

```
9
House 1000 1000
House 1 1
House 1 1000
Bomb 2 1000
PrintFront
House 500 500
House 501 500
Bomb 1 500
PrintEnd
```

Sample Output

```
PrintFront
(1,1)
(1000,1000)
```

Illustration (10/10)



Sample Input

```
9
House 1000 1000
House 1 1
House 1 1000
Bomb 2 1000
PrintFront
House 500 500
House 501 500
Bomb 1 500
PrintEnd
```

Sample Output

```
PrintFront
(1,1)
(1000,1000)
PrintEnd
(1000,1000)
(501,500)
(500,500)
(1,1)
```


HW2 Timeline

- HW2 Registration: 4/14 9:00a.m. ~ 4/15 9:00a.m.
- HW2 Deadline: 4/26 12:00p.m.
- Quiz2: 4/26 18:30 ~ 20:30