Block Puzzle

Data Structures, 2020 Spring, EECS, NTHU

https://acm.cs.nthu.edu.tw/problem/12724/

Descriptions

- This will be a useful tool for you to solve block puzzles
- There will be 12 test cases
  - 10 for basic requirements
  - 2 for bonus

Input

number of pieces

1st piece

the "exact" width and height of the piece

shape

English char, Big 'O'

Minus

No need to handle pathetic pieces, e.g.,

```
3 3   3 2   0 2
---   ---
-00   ---
-0-
```

2nd piece

3rd piece

number of puzzle maps

width and height

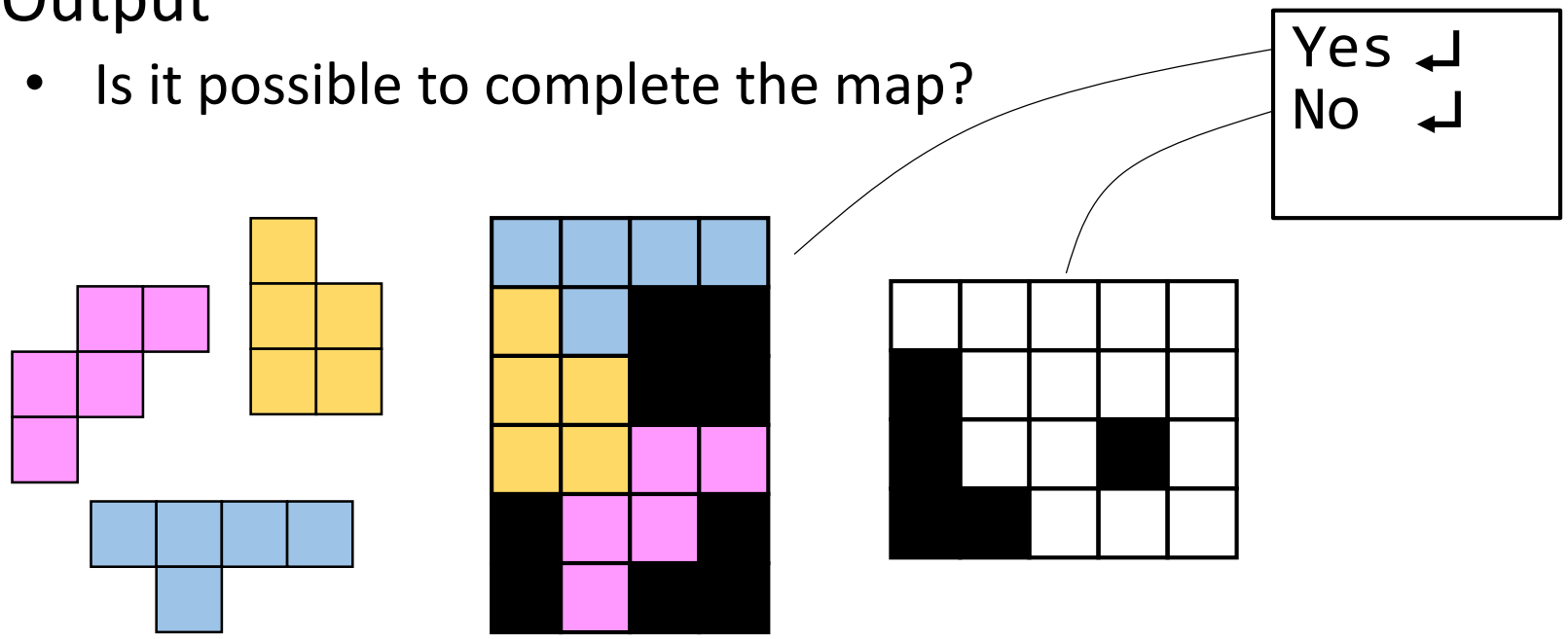
1st puzzle map

2nd puzzle map

```
3
4 2
0000
-0--
2 3
0-
00
00
3 3
-00
00-
0--
2
4 6
----
--00
--00
----
0--0
0-00
5 4
-----
0----
0--0-
00---
```

Operations for the Basic Test Cases

- Each piece should be used exactly once for each map
- Rotating and flipping the pieces are **not needed**
- Output
  - Is it possible to complete the map?



Bonus

Only the last two of the testing data have these cases

Operations for Matching
Bonus

- Rotating and flipping the pieces **may be needed**

Input

number of pieces

1st piece

the "exact" width and height of the piece

shape

English char, Big 'O'

Minus

No need to handle pathetic pieces, e.g.,

```
3 3   3 2   0 2
---   ---
-00   ---
-0-
```

2nd piece

3rd piece

number of puzzle maps

width and height

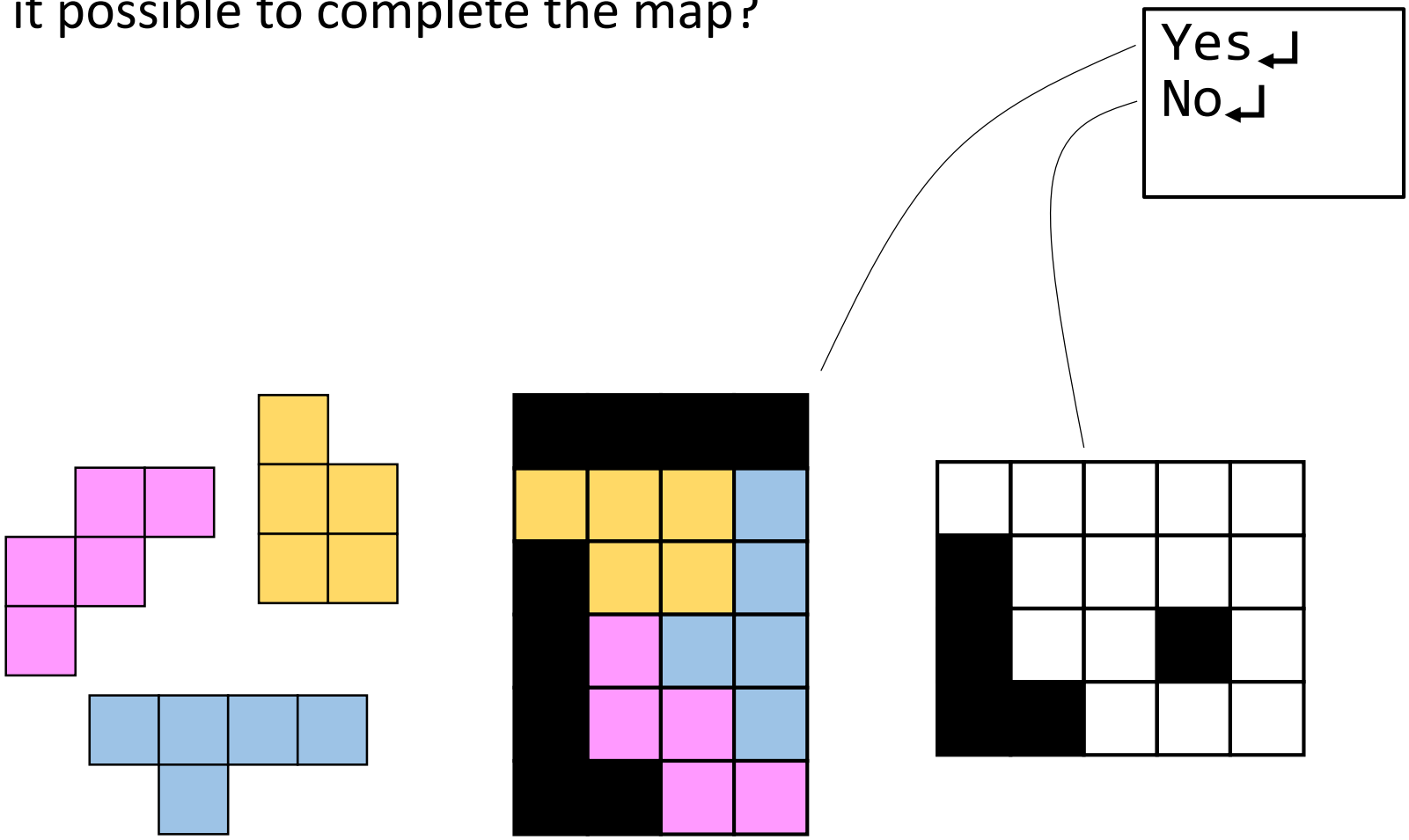
1st puzzle map

2nd puzzle map

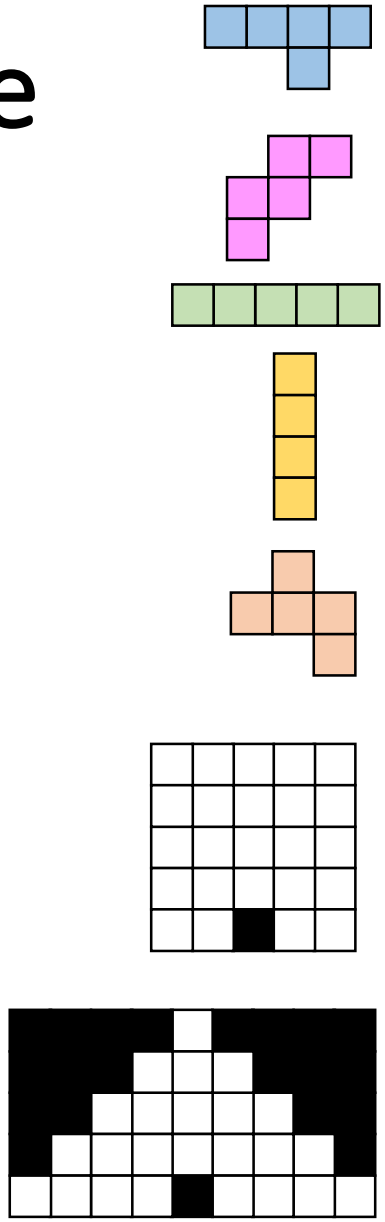
```
3
4 2
0000
-0--
2 3
0-
00
00
3 3
-00
00-
0--
2
4 6
0000
----
0---
0---
0---
00--
5 4
-----
0----
0--0-
00---
```

Output

Is it possible to complete the map?



2nd Example



Input

```
5
4 2
0000
--0-
3 3
-00
00-
0--
5 1
00000
1 4
0
0
0
0
3 3
-0-
000
--0
2
5 5
-----
-----
-----
-----
--0--
9 5
0000-0000
000---000
00-----00
0-------0
---------
```

Output

```
No
Yes
```