COMP9021 Principles of Programming
Term 1, 2024

Coding Quiz 2

Worth 4 marks and due Week 4 Thursday @ 9pm

Description

You are provided with a **stub** in which you need to **insert your code where indicated without doing any changes to the existing code** to complete the task.

The current code will accept a zero or positive integer (that is, non-strictly negative integer) with possible leading 0's and converts it to base 8 (keeping leading 0's, if any).

Given the following directions:

0: Move **North**

1: Move **North-East**

2: Move **East**

3: Move **South-East**

4: Move **South**

5: Move **South-West**

6: Move **West**

7: Move **North-West**

We start from a position that is the **unique** position where the switch is **on**. Moving to a position switches **on** to **off** and **off** to **on** there. By default, all positions are **off**.

Your program should display the minimal rectangular shape that includes all **on** positions as shown in the test cases below.

Due Date and Submission

Quiz 1 is due **Week 4 Thursday 7 March 2024 @ 9.00pm** (Sydney time).

Note that **late** submission with **5% penalty per day** is allowed **up to 3 days** from the due date, that is, any late submission after **Week 4 Sunday 10 March 2024 @ 9pm** will be discarded.

Make sure not to change the filename **`quiz_2.py`** while submitting by clicking on **[Mark]** button in **Ed**. It is your responsibility to check that your submission did go through properly using **Submissions** link in Ed otherwise your mark will be **zero** for Quiz 2.

Test Cases

$ python3 quiz_2.py
Enter a non-strictly negative integer: 0
Keeping leading 0's, if any, in base 8, 0 reads as 0.

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$ python3 quiz_2.py
Enter a non-strictly negative integer: 00
Keeping leading 0's, if any, in base 8, 00 reads as 00.

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$ python3 quiz_2.py
Enter a non-strictly negative integer: 0256
Keeping leading 0's, if any, in base 8, 0256 reads as 0400.

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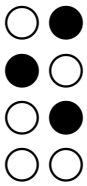
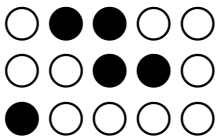
$ python3 quiz_2.py
Enter a non-strictly negative integer: 032
Keeping leading 0's, if any, in base 8, 032 reads as 040.

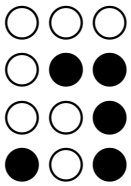
$ python3 quiz_2.py
Enter a non-strictly negative integer: 3654
Keeping leading 0's, if any, in base 8, 3654 reads as 7106.



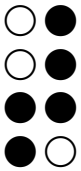
$ python3 quiz_2.py
Enter a non-strictly negative integer: 100738324
Keeping leading 0's, if any, in base 8, 100738324 reads as 600222424.



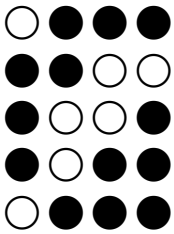
$ python3 quiz_2.py
Enter a non-strictly negative integer: 73776
Keeping leading 0's, if any, in base 8, 73776 reads as 220060.



$ python3 quiz_2.py
Enter a non-strictly negative integer: 7704322
Keeping leading 0's, if any, in base 8, 7704322 reads as 35307402.



$ python3 quiz_2.py
Enter a non-strictly negative integer: 206537612
Keeping leading 0's, if any, in base 8, 206537612 reads as 1423701614.



$ python3 quiz_2.py
Enter a non-strictly negative integer: 000123456789
Keeping leading 0's, if any, in base 8, 000123456789 reads as 000726746425.