Programming I (Python)
Assignment 4

Instructions

- Similar to Assignment 2, 3.
- This assignment is about functions. **Please ensure that your code does not have any extraneous input/output code.**
- In several questions, underscores (`'_'`) have been used to highlight spaces (`' '`) in the output code. Your output should contain the space character (`' '`) in all those spaces.

Questions

1. (a) Write a function `print_n_messages()` that prints "Hello world!" 10 times. (**file:** `Q1a.py`)
   (b) Write a function `print_n_messages(`n`)` that prints "Hello world!" n times. (**file:** `Q1b.py`)
   (c) Write a function `print_n_messages(`m`)` that prints message m 10 times. (**file:** `Q1c.py`)
   (d) Write a function `print_n_messages(`m`, `n`)` that prints message m n times. (**file:** `Q1d.py`)

2. (a) Write a function `banner(`m`)` that prints prints the message m decorated with borders. For example, `banner("Good Morning!")` with give:

```
*****************
*_Good Morning!_*
*****************
```

   (**file:** `Q2a.py`)

3. (a) Write a function `diamond()` that prints a diamond of height 5.

```
__*
_***
*****
_***
__*
```

   (**file:** `Q3a.py`)

(b) Write a function `diamond(`n`)` that prints a diamond of height n, where n is an odd number. Your function is not expected to behave deterministically if n is not an odd number. For example, `diamond(3)` will give:

```
_*
***
_*
```

and `diamond(5)` will give a diamond as printed in part(a). (**file:** `Q3b.py`)

(c) Write a function `diamond(`n`, `c`)` that prints a diamond of height n made of character c, where n is an odd number. Your function is not expected to behave deterministically if n is not an odd number. For example, `diamond(3, '1')` will give:

```
_1
111
_1
```

(**file:** `Q3c.py`)

(d) Write a function `diamond(`n`, `c`)` that prints a diamond of height n made of character c, where n is an odd number. Your function is not expected to behave deterministically if n is not an odd number. For example, `diamond(3, '1')` will give:

```
_1
111
_1
```

(**file:** `Q3d.py`)

4. (a) Write a function `ndiamond()` that prints a numerical diamond of height 5.

```
__1
_121
12321
_121
__1
```

(**file:** `Q4a.py`)

(b) Write a function `ndiamond(`n`)` that prints a numerical diamond of height n. For example, `ndiamond(3)` will give:

```
_1
121
_1
```

and `ndiamond(5)` will give an output similar to the one in part (a). (**file:** `Q4b.py`)