

Review Questions

Iteration

Q1. The nursery rhyme "1 potato, 2 potato" consists of the following verse:

*1 potato, 2 potato, 3 potato, 4!
5 potato, 6 potato, 7 potato, MORE!*

Your job is to extend this song by a given number of verses while maintaining the count.

Write a function `potato` that takes `verses` as the parameter representing the number of verses and returns the entire song as a string.

Sample Input 1:

3

Sample Output 1:

```
1 potato, 2 potato, 3 potato, 4!  
5 potato, 6 potato, 7 potato, MORE!  
8 potato, 9 potato, 10 potato, 11!  
12 potato, 13 potato, 14 potato, MORE!  
15 potato, 16 potato, 17 potato, 18!  
19 potato, 20 potato, 21 potato, MORE!
```

Q2. Write an iterative function named `pattern` to generate the following pattern for a given parameter `n`.

Sample Input 1:

3

Sample Output 1:

```
1
2 3 4
5 6 7 8 9
```

Sample Input 2:

1

Sample Output 2:

```
1
```

Sample Input 3:

2

Sample Output 3:

```
1
2 3 4
```

Sample Input 4:

6

Sample Output 4:

```
1
2 3 4
5 6 7 8 9
0 1 2 3 4 5 6
7 8 9 0 1 2 3 4 5
6 7 8 9 0 1 2 3 4 5 6
```

Q3. Write a function `build_pyramid` that takes the parameters `max_blocks`, the height of the pyramid (can be negative, which means an upside down pyramid), and `c`, the character that makes up the pyramid.

Sample Input 1:

5
*

Sample Output 1:

```
  *
 ***
*****
*****
*****
*****
```

Sample Input 2:

-3
o

Sample Output 2:

```
ooooo
ooo
o
```

Q4. Write a function `to_binary` which takes `val` - a decimal number - as a parameter, and returns its binary representation.

Sample Input 1:

73

Sample Output 1:

1001001

Sample Input 2:

255

Sample Output 2:

11111111