

# Program 1 - ASCII Squares

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Date Modified: 2/26/2024

Due Date: iLearn

```
+ - - - - + - - - - + - - - - + - - - - +  
|           |           |           |           |  
|           |           |           |           |  
|           |           |           |           |  
+ - - - - + - - - - + - - - - + - - - - +
```

You will be creating your own Python program completely from scratch! As seen above, you will be printing ASCII squares!

## Program Details

In this program you will be writing code to draw squares. This program will be almost entirely modularized functions and for loops. I would prefer it if you could stick to things that we have covered in class to create this program. I don't want to stifle you, but I want to test everyone with the same criteria.

### Functions

#### **print2byN(n)**

Create the 2byN function and make it take an integer argument *n*. This function will print a 2 by n grid in ASCII art.

Example for a 2by2 square:

```
+ - - - - + - - - - +  
|           |           |  
|           |           |  
+ - - - - + - - - - +  
|           |           |  
|           |           |  
+ - - - - + - - - - +
```

**NOTES:** to print more than one value on a line you can print a comma separated sequence. The example below with print the + and - characters on the same line.

```
# print 2 separate values on the same line
print('+', '-')

# example to use multiple print statements without a line break; same as above,
# but you can have multiple print statements
print('+', end='')
print('-', end='')

```

### **print4byN(n)**

You will create a print4byN function that does the same as the print2byN, but instead of a static 2, you have a 4.

### **printMbyN(m,n)**

You will create a printMbyN function. This function is the same as the others except you will have the user choose both M and N values.

### **Other Functions**

You will need to create other functions for this program to be truly modular. I created 6 for mine. I have the 3 required functions, and then 3 other functions that print the top of my squares, the sides, and then the bottom. My top and bottom are the same, but it helped me visualize it better.

### **Requirements**

1. Your program should contain comments at the top like below:

```
# Program Name:
# Name:
# Date Modified:

```

2. Your program should contain comments throughout the code explaining chunks of code and functions.
3. Your program should have good function and variable names.
4. Your program must implement at least the 3 required functions print2byN, print4byN, and printMbyN plus 1 to 2 more utility functions.
5. Your main section of code must be wrapped in a main function.
6. Your program must accept user input.
7. Your program must print the squares programmatically; meaning that you did not hardcode values for squares and you came up with an algorithm to print as many as you want.
8. Submit a zip file with your program inside.

Sample Output

```
What is 'n' value for 2byN?: 3
What is 'n' value for 4byN?: 2
What is 'm' value for MbyN?: 3
What is 'n' value for MbyN?: 2

+ - - - - + - - - - +
|           |           |
|           |           |
|           |           |
+ - - - - + - - - - +
|           |           |
|           |           |
|           |           |
+ - - - - + - - - - +
|           |           |
+ - - - - + - - - - +
|           |           |           |           |           |
|           |           |           |           |           |
+ - - - - + - - - - + - - - - + - - - - +
|           |           |           |           |           |
|           |           |           |           |           |
+ - - - - + - - - - + - - - - +
|           |           |           |           |
|           |           |           |           |
+ - - - - + - - - - +
|           |           |           |
|           |           |           |
+ - - - - + - - - - +
```