**Week 2 In-Class Exercises (Extra)**

**Q1: The Twelve Days of Christmas [\*\*\*]**

Below are the lyrics of the famous Christmas song “The Twelve Days of Christmas.” Write a Python script called display\_lyrics.py that prints the entire lyrics below. Use functions to shorten your code so that you have as little repeated code as possible. (You are not expected to use loops, if-else or any other concept not covered so far.)

On the first day of Christmas my true love sent to me

A partridge in a pear tree

On the second day of Christmas my true love sent to me

Two turtle doves, and

A partridge in a pear tree

On the third day of Christmas my true love sent to me

Three French hens

Two turtle doves, and

A partridge in a pear tree

On the fourth day of Christmas my true love sent to me

Four colly birds

Three French hens

Two turtle doves, and

A partridge in a pear tree

On the fifth day of Christmas my true love sent to me

Five gold rings

Four colly birds

Three French hens

Two turtle doves, and

A partridge in a pear tree

On the sixth day of Christmas my true love sent to me

Six geese a-laying

Five gold rings

Four colly birds

Three French hens

Two turtle doves, and

A partridge in a pear tree

On the seventh day of Christmas my true love sent to me

Seven swans a-swimming

Six geese a-laying

Five gold rings

Four colly birds

Three French hens

Two turtle doves, and

A partridge in a pear tree

On the eighth day of Christmas my true love sent to me

Eight maids a-milking

Seven swans a-swimming

Six geese a-laying

Five gold rings

Four colly birds

Three French hens

Two turtle doves, and

A partridge in a pear tree

On the nineth day of Christmas my true love sent to me

Nine ladies dancing

Eight maids a-milking

Seven swans a-swimming

Six geese a-laying

Five gold rings

Four colly birds

Three French hens

Two turtle doves, and

A partridge in a pear tree

On the tenth day of Christmas my true love sent to me

Ten lords a-leaping

Nine ladies dancing

Eight maids a-milking

Seven swans a-swimming

Six geese a-laying

Five gold rings

Four colly birds

Three French hens

Two turtle doves, and

A partridge in a pear tree

On the eleventh day of Christmas my true love sent to me

Eleven pipers piping

Ten lords a-leaping

Nine ladies dancing

Eight maids a-milking

Seven swans a-swimming

Six geese a-laying

Five gold rings

Four colly birds

Three French hens

Two turtle doves, and

A partridge in a pear tree

On the twelfth day of Christmas my true love sent to me

Twelve drummers drumming

Eleven pipers piping

Ten lords a-leaping

Nine ladies dancing

Eight maids a-milking

Seven swans a-swimming

Six geese a-laying

Five gold rings

Four colly birds

Three French hens

Two turtle doves, and

A partridge in a pear tree

**Q2: [\*\*\*] Square**

* In Python, a string can be “multiplied by” an integer, which gives a new string that repeats the original string multiple times. Try the following code to understand how this works:

print('abc' \* 5)  
print('%' \* 10)  
print('a' \* 0)  
print('b' \* (-2))

* '\n' is a single character that represents a line break. When you print '\n', it doesn’t display anything to the screen but moves the cursor to the next line. Try the following code to understand how it works:

print('12345\n12345')

For this question, you’re asked to implement a function called print\_square(). (You can use either Jupyter notebook to do this or write the function inside a .py file.)

The function takes in two parameters:

* symbol (type: str): a single character used to print the square
* size (type: int): size of the square to be printed

The function prints to the screen a hollow square constructed by the given symbol.

For example, print\_square('\*', 5) gives the following output:

\*\*\*\*\*

\* \*

\* \*

\* \*

\*\*\*\*\*

print\_square('1', 10) gives the following output:

1111111111

1 1

1 1

1 1

1 1

1 1

1 1

1 1

1 1

1111111111

Note:

* You can assume that symbol is always a string with a single character, and size is always a positive integer (size >= 1).
* You may want to check if your code works when size is equal to 1.