

Name: _____ PennID: _____

Practice Using Loops

Using actual Python code (written by hand), write the following programs to decode the location of the prize!

Part 1a: Decode the Cipher

You have intercepted a coded message stored in a Python variable called `secret_string`.

```
secret_string = "WXARSTTAMAJZLAIRNIMDNIRHPALVZZBAANIEEENML "
```

Work with your group to write a Python program using a `for` loop that prints every **7th** letter of this string. (Hint: Remember that Python uses 0-based indexing, meaning the 1st letter is at index 0, so the 7th letter is at index 6!)

Part 1b: Be the Computer

Now, execute the code you just wrote as if you are the computer. Count through the `secret_string` exactly as your loop would. Write down the letters your program prints out to reveal the hidden name.

Hidden Name: _____

Find the student in class with the name you found to get a part of your clue!

Part 2a: Signal Jammed

You have intercepted a secret transmission stored in a variable called `jammed_signal`. The enemy tried to destroy the message by jamming it full of `t`'s, and `g`'s.

```
jammed_signal = "xxxxxxxxmdxxxxxxxxmxxxxxxxxlxxxxxxxxamxxxxxxxx"
```

Your task is to write a Python program that looks at each character one by one and filters out all `x`'s and `m`'s.

Part 2b: Unjammed

Now, execute the code you just wrote by hand. Write down the result to reveal the hidden word.

Hidden word: _____

Combine the name you found with those of other groups to find the next part of your clue!

Part 3: Frequency Relay

You have intercepted a broadcast frequency stored in a variable called `beacon_signal`. To find the next clue, you must count exactly how many times a key letter appears in the broadcast. Luckily, you were able to decipher that the key letter for this broadcast is **Z**.

Together with your group, write a Python program that loops through the string one character at a time, and uses a variable to count every time it finds your target letter.

```
beacon_signal = "KZKQAKBKQKKZCKDQKEKKQFKGKHKQKJ"
```

Clue Number (Total Count): _____

What letter in the alphabet is represented by your clue number (where A is 1, B is 2, etc.)?

Clue Letter: _____

Combine your letter with other groups to get the name of the student in class with the next part of your clue!