

**For all programs: comment your code, use format strings where appropriate, and use concise-and-descriptive variable names. Give your program files descriptive names.**

**Reading:** the rest of Chapter 2, while loops section until the end. <https://automatetheboringstuff.com/2e/chapter2/>

**Question 1: For loops - January Calendar (5 points)**

Write a program that uses a loop prints the date for every day in January. So, your program's output will look like this. Make sure the first date is "January 1" and the last date is "January 31". You'll only need one print statement - don't write 31 print statements!

```
January 1
January 2
January 3
January 4
January 5
January 6
January 7
January 8
January 9
January 10
January 11
January 12
January 13
January 14
January 15
January 16
January 17
January 18
January 19
January 20
January 21
January 22
January 23
January 24
January 25
January 26
January 27
January 28
January 29
January 30
January 31
```

*Extra credit +3 include the ordinal suffixes after the dates "st" or "nd" or "rd" or "th" - so the output would start like this. You'll need some if statements. Don't write 31 if statements - you can solve this with much less code! Be careful your code uses the correct suffix for every number, so the output will start like this,*

```
January 1st
January 2nd
January 3rd
January 4th
January 5th
January 6th
```

### Question 2: For loops - shout your name vertically (5 points)

Write a program that asks the user for their name.

Use a loop to print one letter of their name per line. **Convert each letter to uppercase inside the loop.** In other words, don't convert the whole name to uppercase.

Your program should print any name vertically. So, store the user's name in a variable, and use that variable in your loop. Test your program with different example names.

After the loop, print a message with the user's name **in the original case they entered it**. For example, if the user's name is "Miriam" and they type in "Miriam", the output from the program will look like this,

```
Enter your name: Miriam
M
I
R
I
A
M
That was your name vertically, Miriam. Thanks for using this program!
```

### Question 3: While Loops - Quiz Question (5 points)

Modify the quiz question program from the last topic to use a while loop instead of an if statement (Quiz question program that asked [What's the capital of Wisconsin?](#)) so the user can keep trying answers until they get the answer right. Make sure you print a message that asks the user to try again if they get the answer wrong, and print a message that says "correct!" when they get the answer right. The user is allowed as many attempts as they need to get the right answer.

Example output from the same program if the user is correct, it will do this,

```
Quiz program!
What is the capital of Wisconsin? Madison
Correct!
```

if the user is wrong 3 times and then correct,

```
Quiz program!
```

```
What is the capital of Wisconsin? Saint Paul
```

```
Sorry, that is not right. Please try again.
```

```
What is the capital of Wisconsin? Milwaukee
```

```
Sorry, that is not right. Please try again.
```

```
What is the capital of Wisconsin? Green Bay
```

```
Sorry, that is not right. Please try again.
```

```
What is the capital of Wisconsin? Madison
```

```
Correct!
```

#### Question 4: Quiz Question v2 (5 points)

This program should do the same as Question 3, but make these changes:

- Only let the user have 3 attempts to get the answer correct
- Count how many attempts it took the user to get the answer right (Hint: you may need another variable, or you can use the counter in a for loop)
- If the user gets the right answer before they run out of attempts, print a message saying how many attempts the user needed
- If the user runs out of attempts, end the loop and print a message with the correct answer. (Hint: one way to solve this is to look in the textbook which discusses a way to end a loop)

You can solve this problem with a for loop or a while loop. We saw an example that used a for loop with an if statement inside it in the lectures, you can write if statements inside while loops too.

Example output - user gets the answer right on the first attempt

```
Quiz program!
```

```
What is the capital of Wisconsin? Madison
```

```
Correct! You got the answer right in 1 guess(es)
```

User gets the answer right on the second attempt

```
Quiz program!
```

```
What is the capital of Wisconsin? Green Bay
```

```
Sorry, that is not right. Please try again.
```

```
What is the capital of Wisconsin? Madison
```

```
Correct! You got the answer right in 2 guess(es)
```

User gets the answer right on the third attempt

```
Quiz program!  
What is the capital of Wisconsin? Milwaukee  
Sorry, that is not right. Please try again.  
What is the capital of Wisconsin? Bayfield  
Sorry, that is not right. Please try again.  
What is the capital of Wisconsin? Madison  
Correct! You got the answer right in 3 guess(es)
```

User does not get the answer right and runs out of attempts

```
Quiz program!  
What is the capital of Wisconsin? Saint Paul  
Sorry, that is not right. Please try again.  
What is the capital of Wisconsin? Milwaukee  
Sorry, that is not right. Please try again.  
What is the capital of Wisconsin? Green Bay  
Sorry, you ran out of guesses. The answer is "Madison"
```

**Extra credit** +3 points write two solutions, one with a for loop, and one with a while loop.

**To submit:**

Upload all four .py files, one for each question, to the [Lab 4 - Loops](#) assignment dropbox.