# hw03

July 19, 2023

## 1 Metadata

```
Course:   DS 5100
Term:     Summer 2023
Module:   M03 Homework
Author:   R.C. Alvarado
Date:     7 July 2023
```

## 2 Student Info

- Name: Lindley Slipetz
- Net ID: ddj6tu
- URL of this file in GitHub:https://github.com/sliplr19/DS5100-ddj6tu/tree/main/lessons/M03

## 3 Instructions

In your **private course repo on Rivanna**, write a Jupyter notebook running Python that performs the numbered tasks below.

For each task, create a code cell to perform the task.

Save your notebook in the `M03` directory as `hw03.ipynb`.

Add and commit these files to your repo.

Then push your commits to your repo on GitHib.

Be sure to fill out the **Student Info** block above.

To submit your homework, save the notebook as a PDF and upload it to GradeScope, following the instructions.

## 4 Task 1

(6 points)

Using the **for** loop and **if** statement control structures, write a script that generates the integers from 1 to 100 and does the following things:

- If 3 is a factor of the number, print `Wahoo`.

- If 5 is a factor of the number, print `wah!`.
- If the number meets none of the above conditions, print nothing, not even a line break.
- If the number meets both of the conditions, print the strings on the same line with no space between them.
- Make sure that the line printed for each iteration in which a condition is met ends with a line break.
- When the loop is finished, print the number of times either conidtion was met, i.e. the number of lines that were printed.

Hint: You may not need to use **elif** and **else** to accomplish these tasks.

[1]:
```
condition1 = 0
condition2 = 0
condition3 = 0
condition4 = 0
for i in range(100):
    if(i%3 == 0 or i%5==0):
        if(i%3 == 0 and i%5 == 0):
            print("Wahoowah!")
            condition1 += 1
        elif(i%3 == 0 and i%5 != 0):
            print("Wahoo")
            condition2 += 1
        elif(i%3 != 0 and i%5 == 0):
            print("wah!")
            condition3 += 1
    else:
        condition4 +=1
print("Both:", condition1,"Three:", condition2, "Five:", condition3, "Neither:",
     condition4)
```

```
Wahoowah!
Wahoo
wah!
Wahoo
Wahoo
wah!
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Wahoo
Both: 7 Three: 27 Five: 13 Neither: 53
```

## 5 Task 2

(3 points)

Rewrite the `for` loop as a `while` loop.

This time, only print lines where both conditions are met.

Include a final line which prints the number of times both conditions are met.

[4]:
```
condition1 = 0
i = 0

while i < 101:
    i += 1
    if(i%3 == 0 and i%5 == 0):
        print("Wahoowah!")
        condition1 += 1
```

```
        continue




print("Both:", condition1)
```

```
Wahoowah!
Wahoowah!
Wahoowah!
Wahoowah!
Wahoowah!
Wahoowah!
Both: 6
```

## 6 Task 3

(3 points)

Write a list comprehension that iterates through the integers from 1 to 100 and returns a list containing the sum of the boolean values of the two conditions described in Task 1.

[5]:
```
numbers = range(100)
mylist =  [num for num in numbers if (num%3 == 0) or (num%5== 0) == True]
len(mylist)
```

[5]:
```
47
```

[ ]:
```

```