

CS 1301

## Individual Homework 3 – Conditionals & Loops

**Due: Monday February 8<sup>th</sup> before 11:55pm**

**Out of 100 points**

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**Files to submit: 1. HW3.py**

**THIS IS AN INDIVIDUAL ASSIGNMENT!**

You should work individually on this assignment. You may collaborate with other students in this class. Collaboration means talking through problems, assisting with debugging, explaining a concept, etc. Students may only collaborate with fellow students currently taking CS 1301, the TA's and the lecturer. You should not exchange code or write code for others. For individual assignments, each student must turn in a unique program. Your submission must not be substantially similar to another student's submission. Collaboration at a reasonable level will not result in substantially similar code.

For Help:

- TA Helpdesk – Schedule posted on class website.
- Email TA's or use Piazza Forums

Notes:

- **Don't forget to include the required collaboration statement (outlined on the syllabus).**
  - **Do not wait until the last minute** to do this assignment in case you run into problems.
  - **Read the entire specifications document before starting this assignment.**
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### Part 1 – Create the Functions

- |                        |  |       |
|------------------------|--|-------|
| 1. mixtapeFire         |  | 10pts |
| 2. myFaveSong          |  | 20pts |
| 3. illuminatiConfirmed |  | 15pts |
| 4. decrementNumber     |  | 15pts |
| 5. numberTie           |  | 20pts |
| 6. countUp             |  | 20pts |

## Function Name: **mixtapeFire**

Parameters:

timesPlayed – an integer representing the number of times people have listened to your mix tape.

rating – an integer value representing a user rating between 0 and 5.

Return Value:

“**Your mix tape is fire!**”

or “**You should quit the rap game.**”

or “**Invalid input. Play again.**”

Test Cases:

```
Python>>>mixtapeFire(1000, 4)
```

```
“Your mix tape is fire!”
```

```
Python>>>mixtapeFire (1000, 6)
```

```
“Invalid input. Try again.”
```

```
Python>>>mixtapeFire (600, 2)
```

```
“You should quit the rap game.”
```

Description:

Write a function that determines how fire is your mixtape. The user will enter the number of times the mixtape has been played and a rating that people have given it from 0-5. If the number of times played is **1000 or greater AND the rating is 3 or greater**, the function should return “Your mix tape is fire!” If either of these categories are not met, the function should return “You should quit the rap game.” Finally, if the rating is greater than 5, the function should return “Invalid input. Try again.” You may assume that the user will only enter positive integers.

## Function Name: **myFaveSong**

Parameters:

song – a string representing the song to be guessed.

artist – a string representing the artist who wrote the song

Return Value:

None

Test Cases:

```
Python>>> myFaveSong("Hotline Bling", "Drake")
Input Box>Guess my favorite song: Bad Blood
Input Box>Try again. Guess my favorite song: hotline bling
Great Job! It took you 2 tries and 0 hints to guess my favorite song.
Thank you for playing!
```

```
Python>>> myFaveSong("Best I Ever Had", "Drake")
Input Box>Guess my favorite song: Friday
Input Box>Try again. Guess my favorite song: Hint
The artist who wrote the song is: Drake
Input Box>Try again. Guess my favorite song: Best I ever had
Great Job! It took you 2 tries and 1 hints to guess my favorite song.
Thank you for playing!
```

```
Python>>> myFaveSong ("Know Yourself", "Drake")
Input Box>Guess my favorite song: Hello
Input Box>Try again. Guess my favorite song: Rolling in the Deep
Input Box>Try again. Guess my favorite song: Someone Like You
Input Box>Try again. Guess my favorite song: Set Fire to the Rain
Input Box>Try again. Guess my favorite song: Another Adele Song I don't Like
You have exceeded the number of tries.
Thank you for playing!
```

#### Description:

Write a function that will have a song as a parameter and will ask the user to guess that song. The second parameter should be the artist who wrote the song, and will be used if the user needs a hint. The user will have a maximum of 5 chances to guess (after the 5<sup>th</sup> try, if it's wrong let the user know he has exceeded the number of tries). The user may ask for a hint by writing (hint, Hint or HINT) instead of a song. When the user asks for a hint, use the print function to write "The artist who wrote the song is: (whatever artist you wrote for the second parameter)".

If the user guesses the song correctly, say "Great Job!" and how many tries AND hints it took him/her to guess it. Capitalization should not matter when the user guesses the song (i.e. "Hotline Bling" is the same as "hotline bling"). No matter what happens, at the end of the game thank the user for playing. **You must use a while loop.**

**Hint:** The built in functions like `.lower()` might be helpful.

#### Function Name: **illuminatiConfirmed**

Parameters:

secretMsg – a string representing the message that may or may not be from the Illuminati

Return Value:  
None

Test Cases:

```
Python>>>illuminatiConfirmed("Let'S meet at Jay Z'S houSe.")  
Let's meet at Jay Z's house.  
Illuminati Confirmed.
```

```
Python>>>illuminatiConfirmed("The shampoo costs $3.50")  
The shampoo costs $3.50.  
Probably not Illuminati.
```

Description:

Write a function that takes a secret message and determines whether it was sent from the Illuminati. **USE A FOR LOOP** to determine whether there are **three \$ signs** in the message. If there are three dollar signs, create a new string from the secret message in which you replace each \$ sign with an "s". Print this new string and then print "Illuminati Confirmed." If there are not three dollar signs, print the original string. Then print "Probably not Illuminati."

Function Name: **decrementNumber**

Parameters:

aString – a string the user enters

Return Value:

newString

Test Cases:

```
Python>>>decrementNumber("There are 5290 feet in a mile.")  
Input Box > 9  
"There are 5280 feet in a mile."
```

```
Python>>>decrementNumber("There are 377 days in 2016.")  
Input Box > 7  
"There are 366 days in 2016."
```

```
Python>>>decrementNumber("There are 377 days in 2016.")  
Input Box > 8  
"Try a different number."
```

Description:

Write a function that takes a string as a parameter. The function should ask the user to

input a single positive integer. If the number is in the string, the function will replace it with that number decremented by one. The function will return this new string with the replacements. If the number is not in the string, the function will return the string “Try a different number.”

## Function Name: **numberTie**

Parameters:

*num* – An integer between 2-9 specifying half the width of the tie.

Return Value:

None

Description:

Write a function that takes half the width of the tie as a parameter. The function will then draw a tie using three number pyramids (one upside down, one right-side up, and another upside down) using the print function. See below in the test cases for clarification. DO NOT HARD CODE THE PRINTOUTS. You must use a for-loop. Hint: string manipulation and formatting may be helpful. Other Hint: you can break this down into **three for-loops**, one for each pyramid.

```
Running 'C:\Users\Anna\Docum
CS 1301\Calico\myhw3.py'...
Shell reset!
python>>> numberPyramid(5)
5555555555
 44444444
  333333
   2222
    11
    11
   2222
  333333
 44444444
5555555555
5555555555
 44444444
  333333
   2222
    11

Language: Python
```

## Function Name: **countUp**

### Parameters:

- start – an integer marking the starting number
- limit – an integer marking the maximum ending number
- increment – an integer marking the size of the increment

### Return Value:

None

### Description:

Write a function that takes in three parameters: a starting number, a limit (the maximum ending number), and an increment. The function must increment from the starting number until it is above the limit. The function must print out all the numbers that are less than or equal to the limit. The numbers should be printed **IN THE SAME LINE SEPARATED BY COMMAS**. It is okay if the output wraps around into a new line (**the key is to print a single string**).

### Test Cases:

```
Python>>>countUp(22, 55, 5)
```

```
22,27,32,37,42,47,52
```

```
Python>>>countUp(132, 492, 60)
```

```
132,192,252,312,372,432,492
```

# Grading Rubric

## 1. mixtapeFire

Correct Heading (name of function + params) .....	1pts
Handle Invalid scores (rating >5) .....	3pts
Determines which string to return based on values.....	4pts
Returns a value of type <i>String</i> .....	2pts
<b>TOTAL</b> .....	<b>10 PTS</b>

## 2. myFaveSong

Ask the user to guess the song (input box) .....	2pts
Uses a while loop.....	2pts
Handles when tries have been exceeded.....	2pts
Gives user hints if asked.....	5pts
Handles correctly when user guesses the age (prints BOTH number of tries AND hints).....	5pts
Not case sensitive for hints or answers.....	2pts
Prints (no return) thanks at the end.....	2pts
<b>TOTAL</b> .....	<b>20 PTS</b>

## 3. illuminatiConfirmed

Iterates through the parameter string with for loop.....	2pts
Determines if there are three dollar signs.....	5pts
Correctly prints either replaced string or original string.....	5pts
Correctly prints whether this is the Illuminati.....	3pts
<b>TOTAL</b> .....	<b>15 PTS</b>

## 4. decrementNumber

Correct header and one parameter.....	2pts
Function asks user to input a number.....	2pts
Function correctly decrements number.....	7pts
Returns new phrase if number present.....	2pts
Returns correct statement if number not present.....	2pts
<b>TOTAL</b> .....	<b>15 PTS</b>

## 5. numberTie

Correct header and parameters.....	2pts
Uses three loops (2pts/loop).....	6pts
Prints the correct format of a tie (check test case).....	12pts
<b>TOTAL</b> .....	<b>20 PTS</b>

**6. countUp**

Correct header and 3 parameters ..... 2pts

Function prints start number and increments up to limit..... 6pts

Numbers separated by commas (-3 pts for comma at end) 6pts

Numbers printed on same line..... 6pts

**TOTAL.....20 PTS**

FOR ALL PROBLEMS: (-2) if prints instead of returns or returns instead of prints

**Homework created by Anna Herrera.**