

PYTHON PRACTICE FOR QUIZ
STRING SLICING, LISTS, LISTS COMPREHENSION, GENERATORS

1. What would be the output of the following code? Give the exact output that would be printed to screen:

```
ingredients = ["chocolate", "chip", "banana", "strawberry"]
snack1 = ingredients[0] + " " + ingredients[1] + " cookie"
snack2 = ingredients[2] + " " + ingredients[0] + " milkshake"
print(snack1)
print(snack2)
print(snack1[10:14])
print(snack2[7:17])
```

2. Write code to display the 2016 movies and their actors from the following dictionary. USE LIST COMPREHENSION and STRING SLICING:

```
movies = {
    "2018, Bohemian Rhapsody": ["Rami Malek", "Ben Hardy", "Mike Myers", "Lucy Bynton"],
    "2017, Get Out": ["Daniel Kaluuya", "Allison Williams", "Catherine Keener"],
    "2017 Logan": ["Hugh Jackman", "Boyd Holbrook", "Patrick Stewart"],
    "2018, Black Panther": ["Chadwick Boseman", "Michael B. Jordan", "Lupita Nyong'o"],
    "2016, Doctor Strange": ["Benedict Cumberbatch", "Rachel McAdams", "Ch. Ejiofor"],
    "2016, La La Land": ["Emma Stone", "Ryan Gosling", "John Legend"]
}
```

This is what your code should display when it runs:

```
2016, Doctor Strange ['Benedict Cumberbatch', 'Rachel McAdams', 'Ch. Ejiofor']
2016, La La Land ['Emma Stone', 'Ryan Gosling', 'John Legend']
```

3. What would be the output of the following code? Give the exact output that would be printed to screen:

```
squares = [x**2 for x in range(12) if x%2==0]
print (squares)
```

4 a) What would be the output of the following code?

```
foo = []
for x in range(20):
    if x%2 == 0 :
        if x%5 == 0:
            foo.append(x)
print(foo)
```

b) Convert it to make use of list comprehension.

5. Write a generator function that produces successive powers of 3 values (0, 3, 9, 27, 81, 243, 729, etc.), up to some limit.

*Tip: In Python, to raise 3 to a give power p, you use: 3**p*

6 a) What would be the output of the following code?

```
movies = ["2018, Black Panter", "2018: Bohemian Rhapsody", "2017: Get Out", "2017: Logan", "2016: La La Land", "2016: Doctor Strange"]
new_list = []
for m in movies:
    if m[0:4]=="2016":
        new_list.append("REMOVED FROM LIBRARY - " + m)
    else:
        new_list.append(m)
print(new_list)
```

b) Convert it to make use of list comprehension.

7. What would be the output of the following code? Give the exact output that would be printed to screen:

```
def perfect_squares(limit):
    value = 1
    while value < limit:
        yield value*value
        value += 1
foo = perfect_squares(1000)
for i in range(6):
    print(next(foo))
```

8. Rewrite the code from question 7 using list comprehension.

9. Write a function called **getDigits** which will take a string as argument and it will extract and return a list containing all the numbers (digits) from a string.

For example, the input string:

"Hello 12345 World"

should produce the following output:

['1', '2', '3', '4', '5']

The function must use list comprehension

TIP: You can use the Python **isdigit()** method which returns **True** if all the characters in a string are digits, and **False** otherwise. You can use the function for every character in the input string individually. For example:

```
str = "1"
print (str.isdigit())    → prints True
str = "a"
print (str.isdigit())    → prints False
str = "abc 123"
print (str.isdigit())    → prints False
```

10. Implement the **getDigits()** function (question 9) as a generator