## 📝 Python Practice – Return Values, For Loops, and range()

**Instructions:**  
Open your Google Colab notebook.

For each question:

1. Read it carefully.
2. Try to **guess** what the code will do before you run it.
3. Test it out in Colab.

****Tips for Students:****

* Lists start counting positions at ****0****
* Use **.append()** to add items to the ****end**** of a list
* Test each question step-by-step!

### 1. Basic Range (stop)

****Question:****  
Write a **for loop** using **range(3)** that prints numbers.  
****Hint:****  
Remember, **range(3)** creates numbers 0, 1, 2.

### 2. Range with Start/Stop

****Question:****  
Use **range(5, 9)** in a **for loop** to print numbers.  
****Hint:****  
It should print 5, 6, 7, 8 (stops before 9).

### 3. Range with Step

****Question:****  
Using a **for loop**, print even numbers 2 to 8 using **range(2, 10, 2)**.

### 4. Create and Print List

****Question:****  
Create a list called **colors** with "red", "blue", and "green". Print the list using a **for loop**.  
****Hint:****  
Use: **colors = ["red", "blue", "green"]**

### 5. Append to List

****Question:****

1. Create an empty list called **pets**
2. Append "dog" and "cat"
3. Print the list using a **for loop**  
   ****Hint:****  
   An empty list is simply []. Use **pets.append("dog")**

### 6. Access List Item

****Question:****  
For **fruits = ["apple", "banana", "cherry"]**, print the ****second item****.  
****Hint:****  
Remember: positions start at 0!

### 7. Loop Through List

****Question:****  
Use a **for loop** to print each item in **numbers = [10, 20, 30]**.  
****Hint:****  
**for num in numbers:**

python

numbers = [10, 20, 30]

### 8. Combine Range and Lists

****Question:****

1. Create an empty list **squares**
2. Use a **for loop** with **range(1, 4)**
3. Append the square of each number (e.g., 1²=1)
4. Print the final list  
   ****Hint:****  
   Inside the loop: **squares.append(i \* i)**

### 9. Challenge: Even Number Collector

****Question:****

1. Create an empty list **evens**
2. Use **range(0, 10, 2)** in a loop to append numbers
3. Print the list  
   ****Expected Output:**** **[0, 2, 4, 6, 8]**

### 10. Challenge: List Indexing

****Question:****  
For **mixed = [5, "hello", 12, "world"]**, print:

1. The first item
2. The word "world" (use its position)  
   ****Hint:****  
   Positions: **[0, 1, 2, 3]**