Lab 2

1. Function with Global and Local Variables

Write a Python program that defines a global variable `total`. Create a function `add_to_total(n)` that adds `n` to `total` using the `global` keyword. Also, define a local variable `local_total` inside the function and print both variables.

2. Function with Global and Local Variables - Bank Balance

Create a global variable `balance = 1000`. Write a function `withdraw(amount)` that reduces the balance using the `global` keyword. Also, declare a local variable `withdrawn_amount` to store the withdrawn value.

3. Function with Global and Local Variables - Scope

Create a function `modify_global_var()` that tries to change a global variable `count` inside the function **without using** the `global` keyword. Print the value of `count` inside and outside the function to observe the behavior.

4. Using `enumerate` in a List

Write a function `print_items_with_index(items)` that takes a list as input and prints each item with its index using `enumerate()`.

Ex:

Index 0: apple

Index 1: banana

Index 2: cherry

5. Using `enumerate` with a Start Index

Modify the previous function so that `enumerate()` starts counting from `1` instead of `0`.

6. Lambda Function for Squaring Numbers

Write a lambda function `square` that takes a number as input and returns its square. Use this lambda function with the `map()` function to square all elements in a given list.

7. Lambda Function for Filtering Even Numbers

Create a lambda function to filter even numbers from a list using the `filter()` function.

Example:

[1, 2, 3, 4, 5, 6] -> [2, 4, 6]

8. Lambda Function for Reversing a String

Create a lambda function `reverse_string` to reverse a given string.

9. Create a Simple Class in Python

Create a class `Student` with attributes `name` and `age`. Then, create an object of the class and print the student's details.

10. Class with Methods

Modify the `Student` class to include a method `get_details()` that returns the student's name and age in a formatted string.