

# Python Assignment 02

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## Instructions:

Complete the following tasks based on the concepts covered in the 'Python Basics' session. Write your Python code in a .py file or use a Jupyter Notebook to solve the problems.

Ensure that your code is well-commented and variable names are descriptive.

If any task requires output print the result to the console.

Submit the completed .py file or Jupyter Notebook.

## Task 1: Dictionary Operations

Create a dictionary named 'capitals' with key-value pairs for countries and their capitals. Print the dictionary.

Add a new country and its capital to the 'capitals' dictionary. Print the updated dictionary.

Check if 'France' exists in the 'capitals' dictionary and print an appropriate message.

## Task 2: Comparison Operators, Logical Operators, and If/Else

Create a variable for user input and write code to check if the number is even or odd. Print the result.

Create variables for age and GPA. Write code to check eligibility for admission based on certain conditions. Print the result.

## Task 3: Advanced Data Types

Create a set named 'fruits\_set' with certain fruits. Print the set.

Given two sets, perform various operations like union, intersection, difference, and subset check. Print the results.

## Task 4: Strings Manipulation

Create a string variable with a given sentence. Perform various operations like finding length, converting to uppercase, replacing words, checking for substrings, and splitting into words. Print the results.