Python Basics for AI

Hello, Python!

- Write a program that asks the user for their name and age, then prints a greeting message.

Data Type Identification

- Create a program that takes user input and determines its data type, handling conversions to `int` or `float` when possible.

List Operations

- Initialize a list with specific elements, modify it by adding and removing items, and print each element in uppercase.

Tuple Unpacking

- Unpack the first two elements of a given tuple into separate variables and print them.

Dictionary Management

- Create a program to store five student names and their grades in a dictionary and then print the dictionary.

Set Operations

- Take two lists of integers from the user, convert them to sets, and display their union, intersection, and difference.

Conditional Statements: Number Checker

- Ask the user to enter an integer and determine if it is positive, negative, or zero, and whether it is even or odd.

FizzBuzz

- Print numbers from 1 to 50, replacing multiples of three with "Fizz", multiples of five with "Buzz", and multiples of both with "FizzBuzz".

Function: Factorial Calculator

- Define a function to calculate the factorial of a non-negative integer using a loop.

Prime Number Checker

- Create a function to check if a number is prime and use it to verify a user-entered number.

List Comprehension: Squares

- Write a function that takes a list of integers and returns a new list with the squares of each number using list comprehension.

Merge Dictionaries

- Merge two dictionaries into one, with the second dictionary's values overwriting the first's in case of duplicate keys.

Remove Duplicates from a List

- Write a function that removes duplicates from a list of integers while preserving the original order.

Palindrome Checker

- Create a function to check whether a given string is a palindrome, ignoring case and spaces.

Fibonacci Sequence Generator

- Write a function that generates the first n numbers in the Fibonacci sequence based on user input.

Average Calculator with Validation

- Develop a program that takes a series of numbers from the user, validates the input, and calculates the average.

Nested Loops: Multiplication Table

- Generate and print a multiplication table from 1 to 10 using nested loops.

User Registration System

- Implement a simple registration and login system using a dictionary to store user credentials.

Counting Elements with a Dictionary

- Take a list of words from the user and count the frequency of each word using a dictionary.

Temperature Converter

- Create a function to convert temperatures between Celsius and Fahrenheit based on user choice.

Submission Guidelines

- Create a github account
- Install Git on your computer
- Configure your github account
  git config --global user.name "Your Full Name"
  git config --global user.email "your_email@example.com"

  git config --list

- Set up a SSH key:
  ssh-keygen -t ed25519 -C "your_email@example.com"

  eval "$(ssh-agent -s)"

  ssh-add ~/.ssh/id_ed25519

  clip < ~/.ssh/id_ed25519.pub

  Add the SSH Key on github

- Fork the repository
- Clone your repository
- Navigate to the folder and type ‘git status’ in terminal to confirm that git is intialized
- Create a new branch by ‘ git checkout -b “branch_name”
- Add your work in the repository
- To push your work, use these commands on github:
  git add .
  git commit -m “commit_message”
  git push origin branch_name

- Go to github to see the pushed changes and create a PR. Write your roll number and details in the pr description