**Lab 1: Installing Python and Jupyter notebook and performing basic programming**

1. **Download python.exe and install it and also jupyter notebook in VsCode**

Steps:

1. Download python.exe from python.org and install it.
2. Install python and jupyter extension in VsCode
3. **Write a program to add two input numbers and display the sum.**

# Input: Get two numbers from the user

num1 = float(input("Enter the first number: "))

num2 = float(input("Enter the second number: "))

# Process: Add the two numbers

sum = num1 + num2

# Output: Display the sum

print(f"The sum of {num1} and {num2} is {sum}")

1. **WAP to compare between two numbers: the greatest and the smallest.**

# Program to compare two numbers and determine the greatest and smallest

# Input: Get two numbers from the user

num1 = float(input("Enter the first number: "))

num2 = float(input("Enter the second number: "))

# Process: Compare the two numbers

if num1 > num2:

    print(f"The greatest number is {num1}")

    print(f"The smallest number is {num2}")

elif num1 < num2:

    print(f"The greatest number is {num2}")

    print(f"The smallest number is {num1}")

else:

    print("Both numbers are equal.")

1. **WAP to check an input number if Positive, Negative or Zero.**

# Program to check if a number is Positive, Negative, or Zero

# Input: Get a number from the user

number = float(input("Enter a number: "))

# Process: Check the condition

if number > 0:

    print(f"The number {number} is Positive.")

elif number < 0:

    print(f"The number {number} is Negative.")

else:

    print("The number is Zero.")

1. **Write a program to display the first five natural numbers using for loop.**

# Program to display the first five natural numbers

# Process: Use a for loop to iterate through numbers 1 to 5

print("The first five natural numbers are:")

for number in range(1, 6):

    print(number)

1. **Consider a dataset has five numbers as n=[1,12,13, 14, 15] . Now display them using for loop.**

# Dataset

n = [1, 12, 13, 14, 15]

# Process: Use a for loop to iterate through the dataset

print("The numbers in the dataset are:")

for number in n:

    print(number)

1. **Consider a dataset has three strings as color= [ ‘red’ , ‘blue’ , ‘green’]. Display them using for loop.**

# Dataset

color = ['red', 'blue', 'green']

# Process: Use a for loop to iterate through the dataset

print("The colors in the dataset are:")

for c in color:

    print(c)

1. **Create a function that adds two numbers and returns the sum.**

# Function to add two numbers

def add\_numbers(a, b):

    """This function adds two numbers and returns the sum."""

    return a + b

# Example usage

num1 = 10

num2 = 20

result = add\_numbers(num1, num2)

print(f"The sum of {num1} and {num2} is {result}")

1. **Write a python program to create a simple dataset and display it.**

import pandas as pd

# creating a dataset

data = pd.DataFrame({

    'ID': [1,2,3],

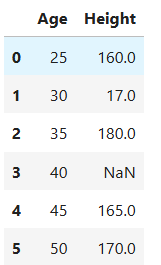
    'Name' : ['Ram', 'Hari', 'Bishnu'],

    'Age': [25,35, 40]

})

print(data)

1. **Create a csv file as below having Age and Height. And then display it.**



import pandas as pd

# Load a dataset from a CSV file

data = pd.read\_csv("C:/Users/shiva/Desktop/python/TestDataset.csv")

print("Data loaded from the CSV file:")

print(data)

1. **Display as below:**
2. **Display the description of the dataset. Use describe().**
3. **Display the shape of the dataframe. Use shape.**
4. **Display the information of the dataframe.**
5. **Only the first five rows**
6. **Only the last five rows.**
7. **Only the rows from index 3 to 5**
8. **Only the column “Age”**
9. **Only the column “ Height”.**

import pandas as pd

# Assuming you already have a DataFrame 'df'

# a) Display the description of the dataset

print(df.describe())

# b) Display the shape of the dataframe

print(df.shape)

# c) Display the information of the dataframe

print(df.info())

# d) Only the first five rows

print(df.head())

# e) Only the last five rows

print(df.tail())

# f) Only the rows from index 3 to 5

print(df.iloc[3:6])

# g) Only the column “Age”

print(df['Age'])

# h) Only the column “Height”

print(df['Height'])

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