Practical 1

# Demonstrating different data types in Python

# Integer

age = 25

print("Integer:", age)

# Float

pi = 3.14159

print("Float:", pi)

# String

name = "Alice"

print("String:", name)

# Boolean

is\_student = True

print("Boolean:", is\_student)

# List

fruits = ["apple", "banana", "orange"]

print("List:", fruits)

# Tuple

coordinates = (10, 20)

print("Tuple:", coordinates)

# Dictionary

person = {"name": "Bob", "age": 30}

print("Dictionary:", person)

# Set

unique\_numbers = {1, 2, 3, 3} # Duplicate elements are removed

print("Set:", unique\_numbers)

if \_\_name\_\_ == "\_\_main\_\_":

demonstrate\_data\_types()

Practical 2

# Example of if statement

age = 20

if age >= 18:

print("You are an adult.")

# Example of if-else statement

temperature = 30

if temperature > 25:

print("It's a hot day.")

else:

print("It's a cool day.")

# Example of if-elif-else statement

score = 85

if score >= 90:

print("Grade: A")

elif score >= 80:

print("Grade: B")

elif score >= 70:

print("Grade: C")

else:

print("Grade: D")

# Example of nested if statement

num = 10

if num > 0:

print("Positive number")

if num % 2 == 0:

print("Even number")

else:

print("Odd number")

# Example of using logical operators with if statement

is\_raining = True

is\_sunny = False

if is\_raining and not is\_sunny:

print("Take an umbrella.")

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#While statement

#Create a list of all the even numbers between 1 and 10

num = 1

even\_numbers = []

while num <= 10:

if num % 2 == 0:

even\_numbers .append(num)

num += 1

print("Even Numbers list: ", even\_numbers )

#For Loop   
#Create a list of all the even numbers between 1 and 10

even\_nums = []

for i in range(1, 11):

if i % 2 == 0:

even\_nums.append(i)

print("Even Numbers: ", even\_nums)

#Iterate through characters in a string

x= "python"

for ch in x:

print(ch)

#iterate through a list

languages = ['R', 'Python', 'Scala', 'Java', 'Julia']

for index in range(len(languages)):

print('Current language:', languages[index])