# PYTHON PROJECTS FROM CHAPTERS 2 TO 5

## Project 1

Write a program that asks for the user's name and age, then prints a message.

Code:

def greet\_user():  
 name = input("Enter your name: ")  
 age = input("Enter your age: ")  
 print(f"Hello {name}, you are {age} years old.")  
greet\_user()

## Project 2

Write a program that calculates the area of a rectangle.

Code:

def rectangle\_area():  
 width = float(input("Enter the width: "))  
 height = float(input("Enter the height: "))  
 area = width \* height  
 print("Area of the rectangle is:", area)  
rectangle\_area()

## Project 3

Write a program that checks if a number is positive, negative, or zero.

Code:

def check\_number():  
 num = float(input("Enter a number: "))  
 if num > 0:  
 print("Positive number")  
 elif num < 0:  
 print("Negative number")  
 else:  
 print("Zero")  
check\_number()

## Project 4

Write a program that checks if a person is eligible to vote (age >= 18).

Code:

def check\_voting\_eligibility():  
 age = int(input("Enter your age: "))  
 if age >= 18:  
 print("You are eligible to vote.")  
 else:  
 print("You are not eligible to vote.")  
check\_voting\_eligibility()

## Project 5

Write a program that prints numbers from 1 to 10.

Code:

def print\_numbers():  
 for i in range(1, 11):  
 print(i)  
print\_numbers()

## Project 6

Write a program that calculates the sum of numbers from 1 to n.

Code:

def sum\_to\_n():  
 n = int(input("Enter a number: "))  
 total = 0  
 for i in range(1, n+1):  
 total += i  
 print("Sum is:", total)  
sum\_to\_n()

## Project 7

Write a program that asks for 5 numbers and prints their average.

Code:

def average\_five\_numbers():  
 total = 0  
 for i in range(5):  
 num = float(input(f"Enter number {i+1}: "))  
 total += num  
 print("Average is:", total / 5)  
average\_five\_numbers()

## Project 8

Write a function that returns the factorial of a number.

Code:

def factorial(n):  
 result = 1  
 for i in range(1, n+1):  
 result \*= i  
 return result  
  
n = int(input("Enter a number: "))  
print("Factorial is:", factorial(n))

## Project 9

Write a function that takes a list and returns the sum of all even numbers.

Code:

def sum\_even(lst):  
 return sum(num for num in lst if num % 2 == 0)  
  
numbers = [1, 2, 3, 4, 5, 6]  
print("Sum of even numbers:", sum\_even(numbers))

## Project 10

Write a function that prints the multiplication table of a number.

Code:

def multiplication\_table(n):  
 for i in range(1, 11):  
 print(f"{n} x {i} = {n\*i}")  
  
num = int(input("Enter a number: "))  
multiplication\_table(num)

## Project 11

Write a function that calculates BMI and classifies the result.

Code:

def calculate\_bmi(weight, height):  
 bmi = weight / (height \*\* 2)  
 if bmi < 18.5:  
 return "Underweight"  
 elif bmi < 25:  
 return "Normal"  
 elif bmi < 30:  
 return "Overweight"  
 else:  
 return "Obese"  
  
w = float(input("Enter weight in kg: "))  
h = float(input("Enter height in meters: "))  
print("BMI category:", calculate\_bmi(w, h))

## Project 12

Write a function that reverses a string.

Code:

def reverse\_string(text):  
 return text[::-1]  
  
s = input("Enter a string: ")  
print("Reversed:", reverse\_string(s))

## Project 13

Write a program that generates a random number between 1 and 100 and lets user guess it.

Code:

import random  
  
def guess\_game():  
 number = random.randint(1, 100)  
 guess = -1  
 while guess != number:  
 guess = int(input("Guess the number (1-100): "))  
 if guess < number:  
 print("Too low!")  
 elif guess > number:  
 print("Too high!")  
 print("Correct!")  
  
guess\_game()

## Project 14

Write a function that counts the number of vowels in a string.

Code:

def count\_vowels(text):  
 count = 0  
 for char in text.lower():  
 if char in 'aeiou':  
 count += 1  
 return count  
  
s = input("Enter a string: ")  
print("Vowels count:", count\_vowels(s))

## Project 15

Write a program that checks if a year is a leap year.

Code:

def is\_leap\_year(year):  
 return (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0)  
  
y = int(input("Enter a year: "))  
print("Leap Year:" if is\_leap\_year(y) else "Not a Leap Year")