

-*- coding: utf-8 -*-

"""Lab Questions I.ipynb

Automatically generated by Colab.

Original file is located at

<https://colab.research.google.com/drive/1v3nDcnG-9-hFoQgIXjS2IRO4X-b13dgh>

"""

1. Write a Python program (WAP) to find the simple interest

```
principal = float(input("Enter the principal amount: "))
```

```
rate = float(input("Enter the rate of interest: "))
```

```
time = float(input("Enter the time (in years): "))
```

```
simple_interest = (principal * rate * time) / 100
```

```
print("The simple interest is:", simple_interest)
```

2. WAP to convert the length in feet to centimeters.

```
feet = float(input("Enter the length in feet: "))
```

```
feet_to_cm = 30.48
```

```
centimeters = feet * feet_to_cm
```

```
print("The length in centimeters is:", centimeters)
```

3. WAP to read the two sides of a rectangle and calculate its area.

```
base = int(input("Enter the base: "))
```

```
height = int(input("Enter the height: "))
```

```
area = base*height
```

```
print("Area of the rectangle is ",area)
```

4. WAP to compute the area of a circle.

```
radius = int(input("Enter the radius:"))
```

```
area = 3.14 * radius * radius
```

```
print("Area of the circle is ",area)
```

5. WAP to find the g.c.d of 2 numbers.

```
import math

num1 = int(input("Enter the first number: "))
num2 = int(input("Enter the second number: "))

gcd = math.gcd(num1,num2)

print("The GCD of the two numbers is:", gcd)
```

6. WAP that outputs the factorial of a given number.

```
fact = 1
i = 1

n = int(input("Enter the number: "))

while i<=n:
    fact = fact*i
    i=i+1

print(fact)
```

7. WAP that prints prime numbers between 2 numbers.

```
start = int(input("Enter the starting number: "))
end = int(input("Enter the ending number: "))

for num in range(start, end + 1):
    if num > 1:
        flag = True
        for i in range(2, int(num**0.5) + 1):
            if num % i == 0:
                flag = False
                break
        if flag:
            print(num)
```

8. WAP that calculate the roots of a quadratic equation.

```
import math

def find_roots(a, b, c):
    x = b**2 - (4 * a * c)
    if x > 0:
        m = (-b + math.sqrt(x)) / (2 * a)
```

```

n = (-b - math.sqrt(x)) / (2 * a)
print(f"The roots are real and different: m = {m}, n = {n}")
elif x == 0:
    p = -b / (2 * a)
    print(f"The root is real and repeated: p = {p}")
else:
    realPart = -b / (2 * a)
    imaginaryPart = math.sqrt(-x) / (2 * a)
    e = f"{realPart} + {imaginaryPart}i"
    f = f"{realPart} - {imaginaryPart}i"
    print(f"The roots are complex: e = {e}, f = {f}")

```

```

a = int(input("Enter the first coefficient: "))
b = int(input("Enter the second coefficient: "))
c = int(input("Enter the third coefficient: "))
find_roots(a, b, c)

```

9. WAP to compute the sum of two numbers. If the sum is below or equal to twenty, two numbers will be entered again. If the sum is above 20, it will display the sum.

```

num1 = int(input("Enter the first number: "))
num2 = int(input("Enter the second number: "))

```

```

sum = num1 + num2

```

```

if sum <= 20:
    num1 = int(input("Enter the first number: "))
    num2 = int(input("Enter the second number: "))
    sum = num1 + num2
    print(sum)
else:
    print("Sum is above 20")

```

10. WAP that output the Fibonacci series up to a given number.

```

n = int(input("Enter the maximum number for the Fibonacci series: "))

```

```

a = 0
b = 1
print("Fibonacci series up to", n, "is:")

```

```

while a <= n:
    print(a, end=' ')
    next_number = a + b
    a = b
    b = next_number

```

