Python Tasks

1.Sum of First N Numbers

```
n = int(input("Enter N: "))
total = sum(range(1, n + 1))
print("Sum:", total)
```

2. Factorial of a Number

```
num = int(input("Enter number: "))
fact = 1
for i in range(1, num + 1):
    fact *= i
print("Factorial:", fact)
```

3. Multiplication Table

```
n = int(input("Enter number: "))
for i in range(1, 11):
    print(f"{n} x {i} = {n*i}")
```

4. Reverse a String

```
text = input("Enter text: ")
print("Reversed:", text[::-1])
```

5. Palindrome Check

```
text = input("Enter text: ")
print("Palindrome" if text == text[::-1] else "Not a palindrome")
```

6. Count Vowels

```
text = input("Enter text: ").lower()
count = sum(1 for ch in text if ch in "aeiou")
print("Vowel count:", count)
```

7. Find the Largest in a List

```
nums = [3, 8, 2, 10, 6]
print("Largest:", max(nums))
```

8. Swap Two Numbers

```
a, b = 5, 9
a, b = b, a
print("After swapping:", a, b)
```

9. Fibonacci Series

```
n = int(input("Enter number of terms: "))
a, b = 0, 1
for _ in range(n):
    print(a, end=" ")
    a, b = b, a + b
```

10. Read a File

```
try:
    with open("example.txt", "r") as f:
```

```
        print(f.read())
except FileNotFoundError:
    print("File not found!")
```

11. Count Words in a Sentence

```
sentence = input("Enter a sentence: ")
print("Word count:", len(sentence.split()))
```

12. Simple Function Example

```
def square(num):
    return num ** 2

print("Square:", square(5))
```

13. Check Prime Number

```
num = int(input("Enter number: "))
if num > 1:
    for i in range(2, num):
        if num % i == 0:
            print("Not Prime")
            break
    else:
        print("Prime")
else:
    print("Not Prime")
```

14. Find All Prime Numbers in a Range

```
for num in range(2, 51):
    for i in range(2, num):
        if num % i == 0:
            break
    else:
        print(num, end=" ")
```

15. Armstrong Number Check

```
num = int(input("Enter number: "))
s = sum(int(d)**3 for d in str(num))
print("Armstrong" if s == num else "Not Armstrong")
```

16. Check Leap Year

```
year = int(input("Enter year: "))
if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
    print("Leap Year")
else:
    print("Not Leap Year")
```

17. Simple Calculator

```
a = float(input("Enter first: "))
b = float(input("Enter second: "))
op = input("Enter operator (+ - * /): ")

if op == '+': print(a + b)
elif op == '-': print(a - b)
elif op == '*': print(a * b)
```

```
elif op == '/': print(a / b)
else: print("Invalid operator")
```

18. Find Smallest Element in List

```
nums = [9, 3, 6, 1, 8]
print("Smallest:", min(nums))
```

19. Sort a List

```
nums = [5, 2, 8, 1, 9]
nums.sort()
print(nums)
```

20. Sum of List Elements

```
nums = [2, 4, 6, 8]
print("Sum:", sum(nums))
```

21. Count Even and Odd Numbers

```
nums = [1, 2, 3, 4, 5, 6]
even = len([n for n in nums if n % 2 == 0])
odd = len(nums) - even
print("Even:", even, "Odd:", odd)
```

22. Find Factorial Using Function

```
def factorial(n):
    return 1 if n == 0 else n * factorial(n - 1)
```

```
print("Factorial:", factorial(5))
```

23. Check if Number is Perfect

```
num = int(input("Enter number: "))
s = sum(i for i in range(1, num) if num % i == 0)
print("Perfect" if s == num else "Not Perfect")
```

24. Display ASCII Value

```
char = input("Enter a character: ")
print("ASCII Value:", ord(char))
```

25. Count Digits and Letters

```
text = input("Enter text: ")
letters = sum(c.isalpha() for c in text)
digits = sum(c.isdigit() for c in text)
print("Letters:", letters, "Digits:", digits)
```

26. Pattern – Right Triangle

```
rows = 5
for i in range(1, rows + 1):
    print("*" * i)
```

27. Pattern – Inverted Triangle

```
rows = 5
for i in range(rows, 0, -1):
    print("*" * i)
```

28. Find Second Largest Number

```
nums = [12, 45, 7, 23, 45, 9]
unique = list(set(nums))
unique.sort()
print("Second largest:", unique[-2])
```

29. Remove Duplicates from List

```
nums = [1, 2, 2, 3, 4, 4, 5]
print("Unique:", list(set(nums)))
```

30. Count Occurrences of Each Word

```
text = "cyber security is cyber safe"
words = text.split()
for w in set(words):
    print(w, "→", words.count(w))
```

31. Write Data to a File

```
with open("output.txt", "w") as f:
    f.write("AI Cyber Security Project Ready!")
print("Data written successfully.")
```

32. Read Numbers and Find Average

```
nums = [int(x) for x in input("Enter numbers: ").split()]
avg = sum(nums) / len(nums)
print("Average:", avg)
```