**1.Right triangle**

height = int(input("Enter the height of the right triangle: "))

for i in range(1, height + 1):

print(' ' \* (height - i) + '\*' \* i)

**Input:**

5

**Out put:**

\*

\*\*

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**2.Left triangle**

height = int(input("Enter the height of the left triangle: "))

for i in range(1, height + 1):

print('\*' \* i)

**Input:**

5

**Out put:**

\*

\*\*

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**3.Remove the duplicate values from the list**

def remove\_duplicates(lst):

return list(set(lst)):

my\_list = [1, 2, 2, 3, 4, 4, 5]

unique\_list = remove\_duplicates(my\_list)

print(unique\_list)

**Input**:

1 2 2 3 4 4 5

**Outpt:**

[1, 2, 3, 4, 5]

**4.print only duplicate values from the given list**

from collections import Counter

def print\_duplicates(lst):

counts = Counter(lst)

duplicates = [item for item, count in counts.items() if count > 1]

print("Duplicate elements:", ', '.join(map(str, duplicates)) if duplicates else "No duplicates found.")

my\_list = [1, 2, 2, 3, 4, 4, 5]

print\_duplicates(my\_list)

**Input**:

[1, 2, 2, 3, 4, 4, 5]

**Output:**

Duplicate elements: 2, 4

**5.Sum and avg of positive and negative numbers**

def main():

user\_input = input("Enter a list of numbers separated by spaces: ")

numbers = list(map(int, user\_input.split()))

pos\_nums = [num for num in numbers if num > 0]

neg\_nums = [num for num in numbers if num < 0]

pos\_sum = sum(pos\_nums)

pos\_avg = pos\_sum / len(pos\_nums) if pos\_nums else 0

neg\_sum = sum(neg\_nums)

neg\_avg = neg\_sum / len(neg\_nums) if neg\_nums else 0

print(f"Sum of positive numbers: {pos\_sum}")

print(f"Average of positive numbers: {pos\_avg:.2f}")

print(f"Sum of negative numbers: {neg\_sum}")

print(f"Average of negative numbers: {neg\_avg:.2f}")

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

main()

**Input:**

10, -5, 20, -10, 30, -15

**Output:**

Sum of positive numbers: 60

Average of positive numbers: 20.00

Sum of negative numbers: -30

Average of negative numbers: -10.00

**6.Given number is tech number or not**

def is\_tech\_number(number):

num\_str = str(number)

if len(num\_str) % 2 != 0:

return False

mid = len(num\_str) // 2

first\_half = int(num\_str[:mid])

second\_half = int(num\_str[mid:])

return (first\_half + second\_half) == number

def main():

try:

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

if is\_tech\_number(number):

print(f"{number} is a tech number.")

else:

print(f"{number} is not a tech number.")

except ValueError:

print("Invalid input. Please enter a valid integer.")

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

main()

**Input**:

1230

**Output**:

1230 is a tech number.

**7.Perfect number or not a perfect number**

def is\_perfect\_number(number):

if number <= 0:

return False

divisors\_sum = sum(i for i in range(1, number) if number % i == 0)

return divisors\_sum == number

try:

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

if is\_perfect\_number(number):

print(f"{number} is a perfect number.")

else:

print(f"{number} is not a perfect number.")

except ValueError:

print("Invalid input. Please enter a valid integer.")

**Input**:

6

**Output**:

6 is a perfect number

**8.Count prime number and composite number**

def is\_prime(n):

if n <= 1:

return False

if n <= 3:

return True

if n % 2 == 0 or n % 3 == 0:

return False

i = 5

while i \* i <= n:

if n % i == 0 or n % (i + 2) == 0:

return False

i += 6

return True

def count\_primes\_and\_composites(numbers):

prime\_count = 0

composite\_count = 0

for num in numbers:

if num > 1:

if is\_prime(num):

prime\_count += 1

else:

composite\_count += 1

return prime\_count, composite\_count

try:

numbers = list(map(int, input("Enter a list of numbers separated by spaces: ").split()))

primes, composites = count\_primes\_and\_composites(numbers)

print(f"Number of prime numbers: {primes}")

print(f"Number of composite numbers: {composites}")

except ValueError:

print("Invalid input. Please enter valid integers.")

**input**:

1 2 3 5 7

**Output**:

Number of prime numbers: 4

Number of composite numbers: 0

**9.Print the count number of words and words start with letter ‘a’**

def count\_words\_and\_a\_words(text):

words = text.split()

total\_words = len(words)

a\_words = sum(1 for word in words if word.lower().startswith('a'))

return total\_words, a\_words

user\_input = input("Enter a sentence: ")

total\_words, a\_words = count\_words\_and\_a\_words(user\_input)

print(f"Total number of words: {total\_words}")

print(f"Number of words starting with 'a': {a\_words}")

**Input**:

An apple a day keeps the doctor away

**Output:**

Total number of words: 9

Number of words starting with 'a': 4

**10.Print the alphabets a to z with their Unicode**

def print\_alphabets\_with\_unicode():

for char in range(ord('a'), ord('z') + 1):

print(f"{chr(char)}: {char}")

print\_alphabets\_with\_unicode()

**Output:**

a: 97

b: 98

c: 99

d: 100

e: 101

f: 102

g: 103

h: 104

i: 105

j: 106

k: 107

l: 108

m: 109

n: 110

o: 111

p: 112

q: 113

r: 114

s: 115

t: 116

u: 117

v: 118

w: 119

x: 120

y: 121

z: 122