**1.** Write a Python program to find those numbers which are divisible by 7 and multiple of 5, between 1500 and 2700 (both included)

numbers = []

for num in range(1500, 2701):

if num % 7 == 0 and num % 5 == 0:

numbers.append(num)

print("Numbers divisible by 7 and multiple of 5 between 1500 and 2700:")

print(numbers)

**2.** Write a Python program that prints all the numbers from 0 to 6 except 3 and 6.

Note : Use 'continue' statement.

Expected Output : 0 1 2 4 5

for num in range(7):

if num == 3 or num == 6:

continue

print(num, end=" ")

print()

**3.** Write a Python program which iterates the integers from 1 to 50. For multiples of three print "Fizz" instead of the number and for the multiples of five print "Buzz". For numbers which are multiples of both three and five print "FizzBuzz".

*Sample Output* :

fizzbuzz

1

2

fizz

4

Buzz

for num in range(1, 51):

if num % 3 == 0 and num % 5 == 0:

print("FizzBuzz")

elif num % 3 == 0:

print("Fizz")

elif num % 5 == 0:

print("Buzz")

else:

print(num)

**4.** Write a Python program to check a triangle is equilateral, isosceles or scalene.

Note :

An equilateral triangle is a triangle in which all three sides are equal.

A scalene triangle is a triangle that has three unequal sides.

An isosceles triangle is a triangle with two equal sides.

*Expected Output:*

Input lengths of the triangle sides:

x: 6

y: 8

z: 12

Scalene triangle

x = int(input("x: "))

y = int(input("y: "))

z = int(input("z: "))

if x == y == z:

print("Equilateral triangle")

elif x == y or y == z or z == x:

print("Isosceles triangle")

else:

print("Scalene triangle")

**OR**

x = float(input("Input length of the first side (x): "))

y = float(input("Input length of the second side (y): "))

z = float(input("Input length of the third side (z): "))

if x == y == z:

print("Equilateral triangle")

elif x != y != z != x:

print("Scalene triangle")

else:

print("Isosceles triangle")

**5.** Write a Python program to calculate the sum and average of n integer numbers (input from the user). Input 0 to finish

sum = 0

count = 0

while True:

num = int(input("Enter an integer number (enter 0 to finish): "))

if num == 0:

break

sum += num

count += 1

average = sum / count if count > 0 else 0

print("Sum:", sum)

print("Average:", average)

OR

numbers = []

while True:

num = int(input())

if num == 0:

break

numbers.append(num)

print("Sum: ", sum(numbers))

print("Average: ", sum(numbers)/len(numbers))

**6.** Write a Python program to construct the following pattern, using a nested loop number.

1

22

333

4444

55555

666666

7777777

88888888

999999999

for i in range(1, 10):

for j in range(i):

print(i, end="")

print()

OR

for i in range(1, 10):

print(str(i) \* i)

**7.** Write a Python program that counts the number of elements within a list that are greater than 30.

lst = [42,29,40,19,10,60]

count = sum(1 for i in lst if i > 30)

print(count)

**8. Take values of length and breadth of a rectangle from user and check if it is square or not.**

length = int(input("Length: "))

breadth = int(input("Breadth: "))

if length == breadth:

print("Square")

else:

print("Rectangle")

**9. A shop will give discount of 10% if the cost of purchased quantity is more than 1000.**

**Ask user for quantity**

**Suppose, one unit will cost 100.**

**Judge and print total cost for user.**

unit\_cost = 100

discount\_threshold = 1000

discount\_rate = 0.1

quantity = int(input("Enter the quantity: "))

total\_cost = quantity \* unit\_cost

if total\_cost > discount\_threshold:

discount = total\_cost \* discount\_rate

total\_cost -= discount

print("Total cost: Rupees", total\_cost)

OR

quantity = int(input("Enter quantity: "))

cost\_per\_unit = 100

total\_cost = quantity \* cost\_per\_unit

if total\_cost > 1000:

total\_cost \*= 0.9

print("Total cost:", total\_cost)

10. A company decided to give bonus of 5% to employee if his/her year of service is more than 5 years.

Ask user for their salary and year of service and print the net bonus amount.

salary = float(input("Enter salary: "))

years\_of\_service = int(input("Enter years of service:"))

if years\_of\_service > 5:

bonus = salary \* 0.05

print("Net bonus amount:", bonus)

else:

print("No bonus.")

11. A school has following rules for grading system:

a. Below 25 - F

b. 25 to 45 - E

c. 45 to 50 - D

d. 50 to 60 - C

e. 60 to 80 - B

f. Above 80 - A

Ask user to enter marks and print the corresponding grade.

marks = int(input("Enter marks: "))

if marks < 25:

grade = "F"

elif marks < 45:

grade = "E"

elif marks < 50:

grade = "D"

elif marks < 60:

grade = "C"

elif marks < 80:

grade = "B"

else:

grade = "A"

print("Grade:", grade)

12. A student will not be allowed to sit in exam if his/her attendence is less than 75%.

Take following input from user Number of classes held

Number of classes attended.

And print percentage of class attended

Is student is allowed to sit in exam or not.

classes\_held = int(input("Enter the number of classes held: "))

classes\_attended = int(input("Enter the number of classes attended: "))

attendance\_percentage = (classes\_attended / classes\_held) \* 100

print("Percentage of classes attended:", attendance\_percentage)

if attendance\_percentage >= 75:

print("The student is allowed to sit in the exam.")

else:

print("The student is not allowed to sit in the exam.")

13. Take 10 integers from keyboard using loop and print their average value on the screen.

numbers = [int(input()) for \_ in range(10)]

average = sum(numbers) / len(numbers)

print("Average: ", average)

14. Print multiplication table of 24, 50 and 29 using loop.

for i in [24, 50, 29]:

for j in range(1, 11):

print(i, "x", j, "=", i\*j)

15. Take integer inputs from user until he/she presses q ( Ask to press q to quit after every integer input ). Print average and product of all numbers.

total\_sum = 0

product = 1

count = 0

while True:

num = input("Enter an integer (q to quit): ")

if num.lower() == 'q':

break

num = int(num)

total\_sum += num

product \*= num

count += 1

if count > 0:

average = total\_sum / count

print("Average:", average)

print("Product:", product)

else:

print("No numbers entered.")

16. Take inputs from user to make a list. Again take one input from user and search it in the list and delete that element, if found. Iterate over list using for loop.

my\_list = input("Enter elements of the list (separated by spaces): ").split()

element\_to\_delete = input("Enter element to delete: ")

if element\_to\_delete in my\_list:

my\_list.remove(element\_to\_delete)

print("Updated list:", my\_list)

17. Using **range(1,101)**, make three list,

1. one containing all even numbers
2. one containing all odd numbers
3. One containing only prime numbers..

even = [i for i in range(1, 101) if i % 2 == 0]

odd = [i for i in range(1, 101) if i % 2 != 0]

prime = [i for i in range(2, 101) if all(i % j != 0 for j in range(2, int(i \*\* 0.5) + 1))]

print("Even: ", even)

print("Odd: ", odd)

print("Prime: ", prime)

18. From the two list obtained in previous question, make new lists, containing only numbers which are divisible by 4, 6, 8, 10, 3, 5, 7 and 9 in separate lists.

divisible\_by\_4 = [i for i in even if i % 4 == 0]

divisible\_by\_6 = [i for i in even if i % 6 == 0]

divisible\_by\_8 = [i for i in even if i % 8 == 0]

divisible\_by\_10 = [i for i in even if i % 10 == 0]

divisible\_by\_3 = [i for i in odd if i % 3 == 0]

divisible\_by\_5 = [i for i in odd if i % 5 == 0]

divisible\_by\_7 = [i for i in odd if i % 7 == 0]

divisible\_by\_9 = [i for i in odd if i % 9 == 0]

19. From a list containing ints, strings and floats, make three lists to store them separately

lst = [1, "apple", 3.14, "banana", 42, 7.5, "cherry"]

ints = [i for i in lst if type(i) == int]

strings = [i for i in lst if type(i) == str]

floats = [i for i in lst if type(i) == float]

20.You are given with a list of integer elements. Make a new list which will store square of elements of previous list.

original\_list = [2, 3, 5, 7, 11]

squared\_list = [num \*\* 2 for num in original\_list]

print("Original list:", original\_list)

print("Squared list:", squared\_list)