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

```
for num in range(1500, 2701):
    if num % 7 == 0 and num % 5 == 0:
        print(num)
```

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=' ')
```

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

```
# Get the lengths of the triangle sides from the user
x = int(input("Input length of the first side: "))
y = int(input("Input length of the second side: "))
z = int(input("Input length of the third side: "))
```

```
# Check the type of triangle based on the lengths of its sides
if x == y == z:
    print("Equilateral triangle")
elif x != y and y != z and x != z:
    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

```
# Initialize variables for sum and count
total = 0
count = 0

# Prompt the user for the first number
num = int(input("Enter an integer (0 to finish): "))

# Continue asking for numbers until 0 is entered
while num != 0:
    total += num  # Add the number to the total
    count += 1  # Increment the count of numbers
    num = int(input("Enter an integer (0 to finish): "))

# Calculate the average, but check for divide by zero error first
if count > 0:
```

```
    avg = total / count
else:
    avg = 0

# Print the sum and average of the
```

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

```
1
22
333
4444
55555
666666
7777777
88888888
999999999

# Loop through the numbers 1 to 9
for i in range(1, 10):
    # Print the current number i repeated i times
    for j in range(i):
        print(i, end="")
    # Move to the next line after each row
    print()
```

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

```
# Initialize the list of numbers
numbers = [10, 20, 30, 40, 50, 60, 70, 80, 90]

# Initialize a variable to keep track of the count
count = 0

# Loop through the list and check if each element is greater than 30
for num in numbers:
    if num > 30:
        count += 1

# Print the count of elements greater than 30
print("Count of elements greater than 30:", count)
```

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

```
# Get the length and breadth of the rectangle from the user
length = float(input("Enter the length of the rectangle: "))
breadth = float(input("Enter the breadth of the rectangle: "))

# Check if the rectangle is a square or not
if length == breadth:
   print("The rectangle is a square.")
```

```
else:
    print("The rectangle is not a square.")
```

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.

```
# Get the quantity of units purchased from the user
quantity = int(input("Enter the quantity of units purchased: "))

# Calculate the total cost of the purchase
unit_cost = 100
total_cost = quantity * unit_cost

# Apply the discount if the total cost is more than 1000
if total_cost > 1000:
    discount = total_cost * 0.1
    total_cost -= discount

# Print the total cost of the purchase
print("Total cost of purchase: $", 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.

```
# Get the salary and years of service from the user
salary = float(input("Enter your salary: "))
years_of_service = int(input("Enter your years of service: "))

# Calculate the net bonus amount
if years_of_service > 5:
    bonus = salary * 0.05
    net_bonus = bonus
else:
    net_bonus = 0

# Print the net bonus amount
print("Your net bonus amount is: $", net_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.

```
# Get the marks from the user
marks = float(input("Enter your marks: "))

# Determine the grade based on the marks
if marks < 25:
    grade = 'F'
elif marks >= 25 and marks < 45:
    grade = 'E'
elif marks >= 45 and marks < 50:
    grade = 'D'
elif marks >= 50 and marks < 60:
    grade = 'C'
elif marks >= 60 and marks < 80:
    grade = 'B'
else:
    grade = 'A'

# Print the grade
print("Your grade is:", 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.

```
# Get the number of classes held and attended from the user
classes_held = int(input("Enter the number of classes held: "))
classes_attended = int(input("Enter the number of classes attended: "))

# Calculate the attendance percentage
attendance_percentage = (classes_attended / classes_held) * 100

# Determine whether the student is allowed to sit in the exam
if attendance_percentage >= 75:
    print("Attendance Percentage:", attendance_percentage, "%")
    print("The student is allowed to sit in the exam.")
else:
    print("Attendance Percentage:", attendance_percentage, "%")
    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.

```
# Initialize a sum variable to store the sum of the integers
```

```
sum = 0

# Use a loop to get 10 integers from the user and add them to the sum
for i in range(10):
    num = int(input("Enter an integer: "))
    sum += num

# Calculate the average by dividing the sum by the number of integers (which is 10 in this case)
average = sum / 10

# Print the average
print("The average of the 10 integers is:", average)
```

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

```
# Define a list of numbers for which we want to print the multiplication table
numbers = [24, 50, 29]

# Use a nested loop to iterate over each number in the list and print its multiplication table
for num in numbers:
    print("Multiplication table of", num, ":")
    for i in range(1, 11):
        result = num * i
        print(num, "x", i, "=", result)
    print()  # print a blank line after each table
```

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.

```
numbers = []  # initialize an empty list to store the entered numbers


while True:
    num = input("Enter an integer (press q to quit): ")
    if num == 'q':
        break  # exit the loop if user enters 'q'
    else:
        num = int(num)  # convert input to integer
        numbers.append(num)  # add the number to the list


if len(numbers) > 0:  # check if any numbers were entered
    avg = sum(numbers) / len(numbers)  # calculate the average
    prod = 1
    for num in numbers:
        prod *= num  # multiply each number to get the product
    print("Average:", avg)
    print("Product:", prod)
else:
    print("No numbers were 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.

```
# take inputs from user to make a list
my_list = input("Enter a list of elements separated by space: ").split()
```

```
# take input from user to search and delete an element from the list
to_delete = input("Enter an element to delete from the list: ")

# check if element is in list and delete it
if to_delete in my_list:
    my_list.remove(to_delete)
    print(f"{to_delete} is deleted from the list.")
else:
    print(f"{to_delete} is not found in the list.")

# print the updated list
print("Updated list:")
for element in my_list:
    print(element)
```

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

one containing all even numbers

one containing all odd numbers

One containing only prime numbers..

```
# define a function to check if a number is prime
def is_prime(n):
   if n < 2:
      return False
```

```
    for i in range(2, int(n**0.5) + 1):
        if n % i == 0:
            return False
    return True

# generate a list of all even numbers from 1 to 100
even_numbers = list(range(2, 101, 2))

# generate a list of all odd numbers from 1 to 100
odd_numbers = list(range(1, 101, 2))

# generate a list of all prime numbers from 1 to 100
prime_numbers = [i for i in range(2, 101) if is_prime(i)]

# print the three lists
print("List of even numbers from 1 to 100:", even_numbers)
print("List of odd numbers from 1 to 100:", odd_numbers)
print("List of prime numbers from 1 to 100:", prime_numbers)
```

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

```
original_list = [1, "hello", 3.14, 42, "world", 2.718]
```

```
int_list = []
str_list = []
float_list = []

for element in original_list:
    if type(element) == int:
        int_list.append(element)
    elif type(element) == str:
        str_list.append(element)
    elif type(element) == float:
        float_list.append(element)

print("Integers:", int_list)
print("Strings:", str_list)
print("Floats:", float_list)
```

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

squared_list = []

for element in original_list:
    squared_element = element ** 2
    squared_list.append(squared_element)
```

```
print("Original List:", original_list)
print("Squared List:", squared_list)
```