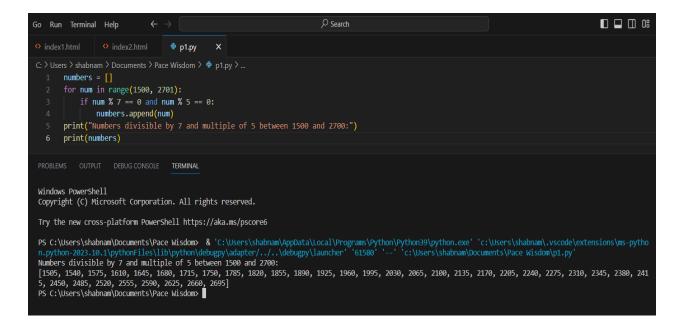
**1.** Write a Python program to find those numbers which are divisible by 7 and multiple of 5, between 1500 and 2700 (both included)

```
numbers = []
```

#### ANS:

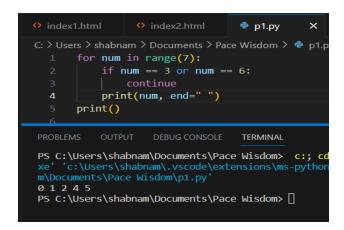
```
for num in range(1500, 2701)
if num % 7 == 0 and num % 5 == 0:
    numbers.append(num)
print("Numbers divisible by 7 and multiple of 5 between 1500 and 2700:")
print(numbers)
```



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
ANS:
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)
```

```
Go Run Terminal Help
                                  p1.py
   index1.html
                                              ×
     PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
    m\Documents\Pace Wisdom\p1.py'
    Fizz
    Buzz
    11
Fizz
    13
14
    FizzBuzz
    16
17
Fizz
    Buzz
    Fizz
    22
23
    Fizz
Buzz
    26
Fizz
nnection
    FizzBuzz
    31
32
Fizz
    38
    Fizz
    Buzz
    41
Fizz
    43
    44
    FizzBuzz
    47
Fizz
    49
    PS C:\Users\shabnam\Documents\Pace Wisdom> [
nnection
```

**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

ANS:
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")

print("Isosceles triangle")

else:

```
p1.py
C: > Users > shabnam > Documents > Pace Wisdom > ♥ p1.py > Ø x
       1 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): "))
                                 print("Equilateral triangle")
                            print("Scalene triangle")
                                print("Isosceles triangle")
                                                                                                              TERMINAL
  PS C:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Users\shabnam\D
               c:\Users\shabnam\.vscode\extensions\ms-python.python-2023.10.1\py
 m\Documents\Pace Wisdom\p1.py
  Input length of the first side (x): 6
 Input length of the second side (y): 6
Input length of the third side (z): 6
  Equilateral triangle
  PS C:\Users\shabnam\Documents\Pace Wisdom>
 PS C:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Users\shabnam\Documents\
  m\Documents\Pace Wisdom\p1.py
 Input length of the first side (x): 6
Input length of the second side (y): 5
Input length of the third side (z): 6
  Isosceles triangle
  PS C:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Users\shabnam\D
  m\Documents\Pace Wisdom\p1.py
 Input length of the first side (x): 4
Input length of the second side (y): 5
Input length of the third side (z): 6
  Scalene triangle
  PS C:\Users\shabnam\Documents\Pace Wisdom>
```

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

```
ANS:
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)
```

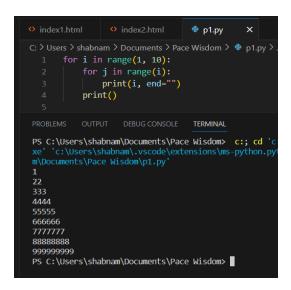
print("Average:", average)

```
C: > Users > shabnam > Documents > Pace Wisdom > ♥ p1.py > ...
        sum = 0
        count = 0
              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)
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
PS C:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Users\shabnam\Documents\Pac
      'c:\Users\shabnam\.vscode\extensions\ms-python.python-2023.10.1\pythonFiles\l:
Enter an integer number (enter 0 to finish): 4
Enter an integer number (enter 0 to finish): 5
Enter an integer number (enter 0 to finish): 6
Enter an integer number (enter 0 to finish): 3
Enter an integer number (enter 0 to finish): 0
Average: 4.5
PS C:\Users\shabnam\Documents\Pace Wisdom>
```

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

```
1
22
333
4444
55555
666666
777777
88888888
999999999

ANS:
for i in range(1, 10):
    for j in range(i):
        print(i, end="")
    print()
```



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

```
ANS:

my_list = [15, 27, 35, 48, 22, 39, 40, 10, 50]

count = 0

for num in my_list:
    if num > 30:
        count += 1

print("Number of elements greater than 30:", count)
```

```
C: > Users > shabnam > Documents > Pace Wisdom > Pace Pl.py > Pace Pl.
```

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

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)
```

```
p1.py
 🖰 > Users > shabnam > Documents > Pace Wisdom > 🍖 p1.py > ...
  unit_cost = 100
  2 discount_threshold = 1000
  3 discount rate = 0.1
  4 quantity = int(input("Enter the quantity: "))
 5 total_cost = quantity * unit_cost
 6  if total_cost > discount_threshold:
          discount = total cost * discount rate
          total_cost -= discount
      print("Total cost: Rupees", total_cost)
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
PS C:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Users\s
m\Documents\Pace Wisdom\p1.py'
Enter the quantity: 5
Total cost: Rupees 500
PS C:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Users\s
m\Documents\Pace Wisdom\p1.py
Enter the quantity: 12
Total cost: Rupees 1080.0
PS C:\Users\shabnam\Documents\Pace Wisdom>
```

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 your salary: "))
years_of_service = int(input("Enter your years of service: "))
bonus_rate = 0.05
if years_of_service > 5:
    bonus_amount = salary * bonus_rate
else:
    bonus_amount = 0
print("Net bonus amount: Rupees", bonus_amount)
```

```
C: > Users > shabnam > Documents > Pace Wisdom > ₱ p1.py > ...
  salary = float(input("Enter your salary: "))
  2 years_of_service = int(input("Enter your years of service: "))
      bonus_rate = 0.05
     if years_of_service > 5:
          bonus_amount = salary * bonus_rate
         bonus_amount = 0
     print("Net bonus amount: Rupees", bonus_amount)
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
PS C:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Users\shabnam\Documen
Enter your salary: 9000
Enter your years of service: 1
Net bonus amount: Rupees 0
PS C:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Users\shabnam\Documen
Enter your salary: 9000
Enter your years of service: 6
Net bonus amount: Rupees 450.0
PS C:\Users\shabnam\Documents\Pace Wisdom> [
```

- 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 = float(input("Enter the 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)</pre>
```

```
p1.py
C: > Users > shabnam > Documents > Pace Wisdom > ♥ p1.py > ...
  1 marks = float(input("Enter the 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"
      grade = "A"
      print("Grade: ", grade)
                                  TERMINAL
m\Documents\Pace Wisdom\p1.py'
Enter the marks: 90
Grade: A
PS C:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Use
m\Documents\Pace Wisdom\p1.py'
Enter the marks: 76
Grade: B
PS C:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Use
    'c:\Users\shabnam\.vscode\extensions\ms-python.python-
Enter the marks: 5
PS C:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Use
xe' 'c:\Users\shabnam\.vscode\extensions\ms-python.python-
m\Documents\Pace Wisdom\p1.py
Enter the marks: 59
PS C:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Use
m\Documents\Pace Wisdom\p1.py
Enter the marks: 44
PS C:\Users\shabnam\Documents\Pace Wisdom>
```

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.

### ANS:

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.")
```

```
p1.py
C: > Users > shabnam > Documents > Pace Wisdom > ♥ p1.py > ...
   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.")
             print("The student is not allowed to sit in the exam.")
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
PS C:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Users\shabnam\Documents\Pace Wisdom\p1.python.python.python-2023.10.1\pythonFiles\lib\pythom\Documents\Pace Wisdom\p1.py'
Enter the number of classes held: 100
Enter the number of classes attended: 60
Percentage of classes attended: 60.0
The student is not allowed to sit in the exam.
PS C:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Users\shabnam\Documents\Pace Wisdom>
Enter the number of classes held: 100
Enter the number of classes attended: 79
Percentage of classes attended: 79.0
The student is allowed to sit in the exam.
PS C:\Users\shabnam\Documents\Pace Wisdom>
```

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

```
total = 0
for i in range(10):
    num = int(input("Enter an integer: "))
    total += num
average = total / 10
print("Average value: ", average)
```

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

```
p1.py
C: > Users > shabnam > Documents > Pace Wisdom > 🍖 p1.py >
    3 for num in numbers:
  print("Multiplication table of", num)
print("----")
for i in range(1, 11):
             result = num * i
print(num, "x", i, "=", result)
          print()
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
24 x 1 = 24
24 x 2 = 48
24 x 3 = 72
24 x 3 = 72

24 x 4 = 96

24 x 5 = 120

24 x 6 = 144

24 x 7 = 168

24 x 8 = 192

24 x 9 = 216

24 x 10 = 240
Multiplication table of 50
50 x 2 = 100
50 x 3 = 150
50 x 4 = 200
50 x 5 = 250
50 x 6 = 300
50 x 7 = 350
50 x 8 = 400
 50 \times 9 = 450
 50 \times 10 = 500
Multiplication table of 29
29 \times 1 = 29
29 x 2 = 58
29 x 3 = 87
 29 \times 4 = 116
```

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.

ANS:

```
p1.py
C: > Users > shabnam > Documents > Pace Wisdom > 🍖 p1.py > ...
                                                user_input = input("Enter an integer (press 'q' to quit): ")
                                                if user_input == 'q':
                                               number = int(user input)
                                               numbers.append(number)
                             if numbers:
                                              average = sum(numbers) / len(numbers)
                                                product = 1
                                               for number in numbers:
                                                        product *= number
                                              print("Average: ", average)
print("Product: ", product)
                                               print("No numbers were entered.")
  PS C:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Users\shabnam\Documents\Pace Visers\shabnam\Documents\Pace Viser\N\Documents\Pace Viser\N\Documents\Pace Viser\N\Documents\Pace Vise
  m\Documents\Pace Wisdom\p1.py
Enter an integer (press 'q' to quit): 4
Enter an integer (press 'q' to quit): 5
Enter an integer (press 'q' to quit): 6
Enter an integer (press 'q' to quit): 6
Enter an integer (press 'q' to quit): 7
Enter an integer (press 'q' to quit): 7
Enter an integer (press 'q' to quit): 9

Avenage: 5-6
 Average: 5.6
Product: 5040
  PS C:\Users\shabnam\Documents\Pace Wisdom> c:; cd 'c:\Users\shabnam\Documents\Pac
 Enter an integer (press 'q' to quit): 45
Enter an integer (press 'q' to quit): 67
Enter an integer (press 'q' to quit): 5
Enter an integer (press 'q' to quit): q
 Average: 39.0
Product: 15075
   PS C:\Users\shabnam\Documents\Pace Wisdom>
```

- 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.
- 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..
- 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.

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

```
index1.html
                                              p1.py
C: > Users > shabnam > Documents > Pace Wisdom > ♥ p1.py > ...
         mixed_list = [1, 'apple', 3.14, 'banana', 5, 7.8, 'carrot']
         int_list = []
         float_list = []
         str_list = []
         for item in mixed_list:
              if isinstance(item, int):
                  int_list.append(item)
               elif isinstance(item, float):
               float_list.append(item)
              elif isinstance(item, str):
                    str list.append(item)
        print("Integers:", int_list)
print("Floats:", float_list)
print("Strings:", str_list)
  18
 PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
 PS C: Open folder in new window (ctrl + click) om> c:; cd 'c:\Users\shabnam\Docum
xe' 'c:\Users\shabnam\.vscode\extensions\ms-python.python-2023.10.1\pythorm\Documents\Pace Wisdom\p1.py'
Integers: [1, 5]
Floats: [3.14, 7.8]
Strings: ['apple', 'banana', 'carrot']
PS C:\Users\shabnam\Documents\Pace Wisdom> []
```

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

