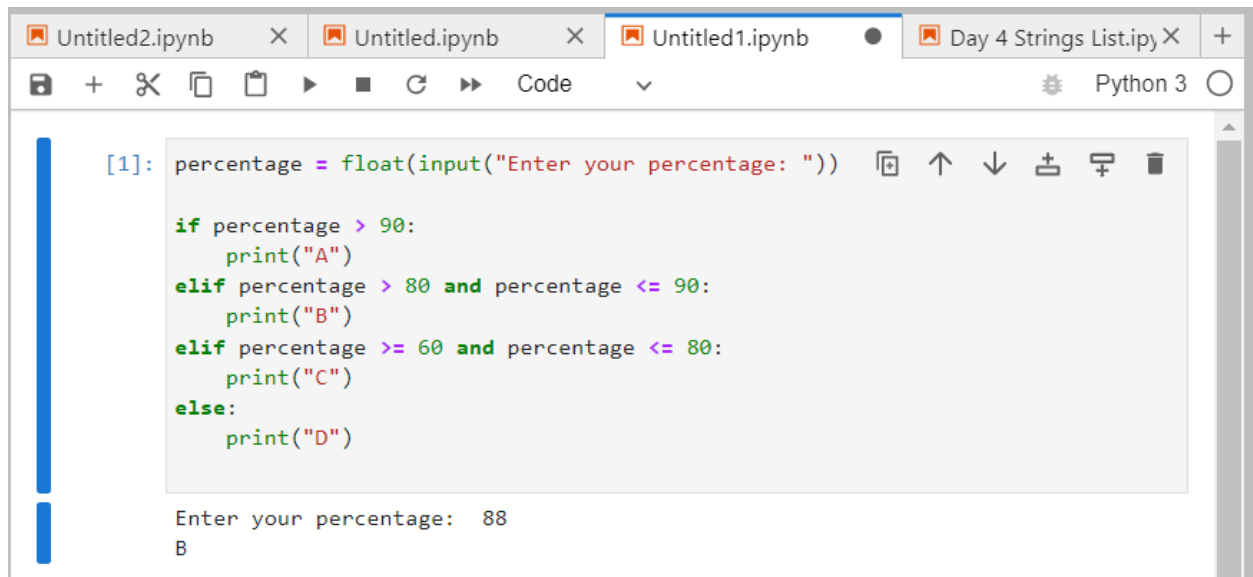# 30th Jan Python Assignment

1. write a program to accept percentage from user and display the grade according >90 A, >80 and <=90 B, >=60 and <=80 C and below 60 D in python

Ans :-

```python
percentage = float(input("Enter your percentage: "))
if percentage > 90:
    print("A")
elif percentage > 80 and percentage <= 90:
    print("B")
elif percentage >= 60 and percentage <= 80:
    print("C")
else:
    print("D")
```

2. write a python program to accept the cost price of a bike and display the road tax to be paid according to the following 15% >100000, 10% >50000 and <= 100000, 5% <=50000

Ans :-

```
cost_price = float(input("Enter the cost price of the bike: "))
if cost_price > 100000:
    road_tax = cost_price * 0.15
elif cost_price > 50000 and cost_price <= 100000:
    road_tax = cost_price * 0.10
else:
    road_tax = cost_price * 0.05

print("The road tax to be paid is: ", road_tax)
```

```
[2]: cost_price = float(input("Enter the cost price of the bike: "))

if cost_price > 100000:
    road_tax = cost_price * 0.15
elif cost_price > 50000 and cost_price <= 100000:
    road_tax = cost_price * 0.10
else:
    road_tax = cost_price * 0.05

print("The road tax to be paid is: ", road_tax)

Enter the cost price of the bike:  50000
The road tax to be paid is:  2500.0
```

3. Write a python to accept the city from user and display the monuments of that city delhi red fort, Agra Taj Mahal, Jaipur Jai Mahal

Ans:-

```
city = input("Enter the name of the city: ")
if city == "Delhi":
    print("Monument: Red Fort")
elif city == "Agra":
    print("Monument: Taj Mahal")
elif city == "Jaipur":
    print("Monument: Jai Mahal")
else:
    print("No monument found for the given city.")
```

The road tax to be paid is: 2500.0

```
[3]: city = input("Enter the name of the city: ")

if city == "Delhi":
    print("Monument: Red Fort")
elif city == "Agra":
    print("Monument: Taj Mahal")
elif city == "Jaipur":
    print("Monument: Jai Mahal")
else:
    print("No monument found for the given city.")
```

Enter the name of the city: Delhi
Monument: Red Fort
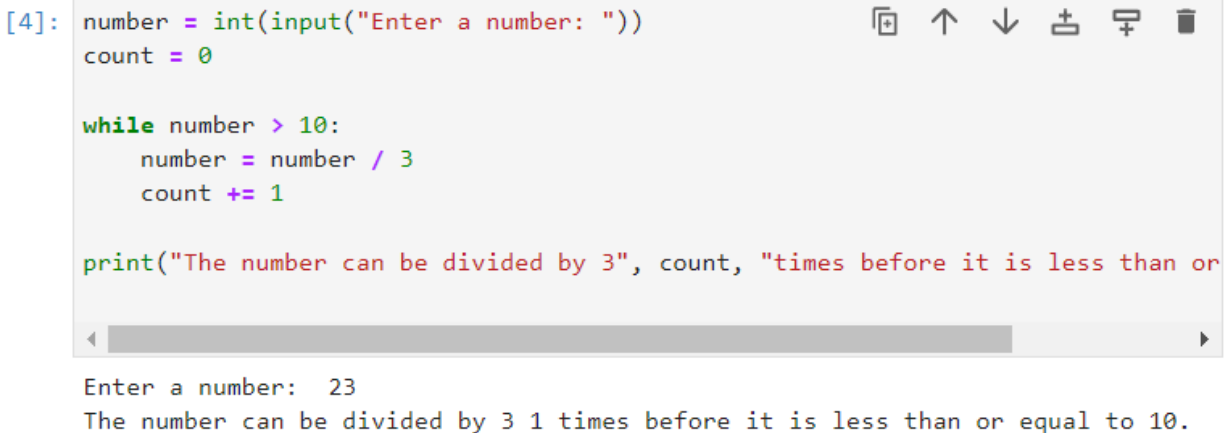
4. Write python program to check how many times a given number can be divided by 3 before it is less than or equal to 10

Ans:-

```python
number = int(input("Enter a number: "))
count = 0

while number > 10:
    number = number / 3
    count += 1

print("The number can be divided by 3", count, "times before it is less than or equal to 10.")
```

```python
[4]: number = int(input("Enter a number: "))
     count = 0

     while number > 10:
         number = number / 3
         count += 1

     print("The number can be divided by 3", count, "times before it is less than or
```

```
Enter a number:  23
The number can be divided by 3 1 times before it is less than or equal to 10.
```

5. when and why to use loops in python give detailed Description with example
Ans:-
Loops are used in Python when you need to repeat a block of code multiple times. They are an essential tool for automating repetitive tasks and for processing large amounts of data.

There are two main types of loops in Python: for loops and while loops.

for loops are used when you have a definite number of iterations to perform, such as when iterating over a list or range of value

6. use nested while loop to print 3 different patterns

Ans:-

```
# Pattern 1
i = 1
while i <= 5:
    j = 1
    while j <= i:
        print("*", end="")
        j = j + 1
    print("")
    i = i + 1

# Pattern 2
i = 5
while i >= 1:
    j = 1
    while j <= i:
        print("*", end="")
        j = j + 1
    print("")
    i = i - 1

# Pattern 3
i = 1
while i <= 5:
    j = 1
    while j <= 5:
        if j < 6 - i:
            print(" ", end="")
        else:
            print("*", end="")
        j = j + 1
    print("")
    i = i + 1
```

Output:-Pattern 1
*
**
***
****
*****
Pattern 2
*****
****
***
**
*
Pattern 3
   *
  **
 ***
****
*****

7. Reverse a while loop to display numbers 10 to 1
Ans:
```
i = 10
while i >= 1:
    print(i)
    i = i - 1
```
Output:-
10
9
8
7
6
5
4
3
2
1