1) Write a program to accept percentage from user and display the grade according to the following criteia:

Marks	Grade
>90	A
>80 and <=90	B
>=60 and <=80	C
below 60	D

In [1]:
```python
percentage = int(input("Enter your percentage = " ))

if percentage > 90:
    print("Grade A")
elif percentage > 80 and percentage <= 90:
    print("Grade B")
elif percentage >= 60 and percentage <= 80:
    print("Grade C")
else:
    print("Grade D")
```

```
Enter your percentage = 80
Grade C
```

2) write a program to accept the cost price of a bike and display the road tax to be paid according to the following criteria:

Tax	Cost Price(in Rs)
15%	>100000
10%	>50000 and <= 100000
5%	< = 50000

In [4]:
```python
bike_cost = int(input("Enter cost of bike = "))

if bike_cost > 100000:
    print("Tax you have to pay ")
    print((15/100)*bike_cost)

elif bike_cost > 50000 and bike_cost <= 100000:
    print("Tax you have to pay ")
    print((10/100)*bike_cost)

else:
    print("Tax you have to pay ")
    print((5/100)*bike_cost)
```

```
Enter cost of bike = 60000
Tax you have to pay
6000.0
```

3) Accept any city from user and display monuments of that city.

City	Monument
Delhi	Red Fort
Agra	Taj Mahal
Jaipur	Jal Mahal

```
In [6]:  city = input("Enter your city = ")

         if city == 'Delhi':
             print("Red Fort")

         if city == 'Agra':
             print("Taj Mahal")

         if city == 'Jaipur':
             print("Jai Mahal")
```

```
Enter your city = Delhi
Red Fort
```

4) Check how many times a given number can be divided by 3 before it is less than or equal to 10.

```
In [11]:  num = int(input("Enter number ="))

          if num <= 10:
              count = 0
              while num != 0:
                  if num % 3 == 0:
                      count = count+1
                  num = num-1
          print(f"{count} Times")
```

```
Enter number =3
1 Times
```

### 5) Why and When to Use while Loop in Python give a detailed description with example.

Answer :-

Python while loop is used to run a block code until a certain condition is met.

The syntax of while loop is:

while condition: # body of while loop

Here,

1)A while loop evaluates the condition

2)If the condition evaluates to True, the code inside the 3)while loop is executed.

4)condition is evaluated again.

5)This process continues until the condition is False.

6)When condition evaluates to False, the loop stops.
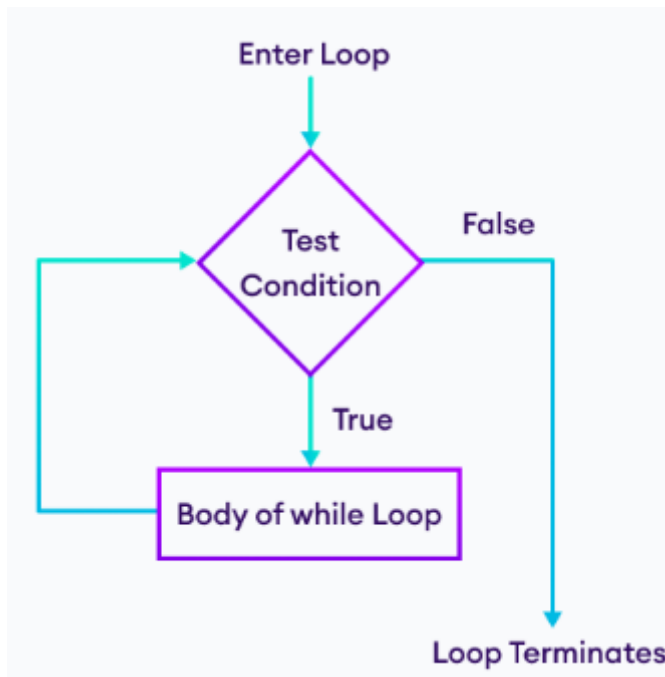
6) Use nested while loop to print 3 different pattern.

```
In [23]: #pattern 1

p1=5
i = 0
while i<=p1:
    j=1
    pattern ='*'
    while j<=i:
        print(pattern,end=" ")
        j=j+1
    print("")
    i=i+1
```

```
*
* *
* * *
* * * *
* * * * *
```

```
In [24]: #pattern 2

i = 5
while i>=1:
    j=i
    pattern ='*'
    while j>=1:
        print(pattern,end=" ")
        j=j-1
```

```
    print("")
    i=i-1
```

```
* * * * *
* * * *
* * *
* *
*
```

In [25]: `#pattern 3`

```
p1=5
i = 0
while i<=p1:
    j=1
    pattern ='*'
    while j<=i:
        print(pattern,end=" ")
        j=j+1
    print("")
    i=i+1
while i>=1:
    j=i
    pattern ='*'
    while j>=1:
        print(pattern,end=" ")
        j=j-1
    print("")
    i=i-1
```

```
*
* *
* * *
* * * *
* * * * *
* * * * * *
* * * * *
* * * *
* * *
* *
*
```

7) Reverse a while loop to display numbers from 10 to 1

In [29]:
```
i = 10

while i <= 10 and i !=0:
    print(i)
    i=i-1
```

```
10
9
8
7
6
5
4
3
2
1
```

8) Reverse a while loop to display numbers from 1 to 10

```
In [33]:  i = 1

          while i <= 10:
              print(i)
              i=i+1
```

```
1
2
3
4
5
6
7
8
9
10
```

In [ ]: