

Q1 write a program accept percentage from user and display the grade according following criteria

In [1]:

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

if marks > 90:
    print("your grade is A")
elif marks > 80 and marks <= 90:
    print("your grade is B")
elif marks >= 60 and marks <= 80:
    print("your grade is C")
else:
    print("your grade is D")
```

Enter your marks : 89
your grade is B

Q2 write a program to accept the cost price a bike and display the road tax to paid according to the following criteria.

In [2]:

```
cost_price = int(input("Enter the cost price of the bike: "))

if cost_price > 100000:
    road_tax = cost_price * 0.15
    print("the road tax to paid is ", road_tax)
elif cost_price > 50000 and cost_price <= 100000:
    road_tax = cost_price * 0.1
    print("the road tax to paid is ", road_tax)
elif cost_price <= 50000:
    road_tax = cost_price * 0.05
    print("the road tax to paid is ", road_tax)
```

Enter the cost price of the bike: 75000
the road tax to paid is 7500.0

Q3 Accept any city from the user and display menu of that city

In [3]:

```
city = input("enter city name : ")

if city == "delhi":
    print(city,"monument is Red Fort")

elif city == "Agra":
    print(city,"monument is Taj Mahal")

elif city == "Jaipur":
    print(city,"monument is Jal Mahal")
```

enter city name : Agra
Agra monument is Taj Mahal

Q4 check how many times a given number can be divided by 3 before it is less than equal to 10

In [4]:

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

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

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

Enter a number: 60
The number can be divided by 3 2 times before it is less than or equal to 10.

Q5 why and when to use while loop in python give a detailed description with example

ANS : A While loop in Python allows a part of the code to be executed repeatedly as long as a given condition is true. The While loop in Python is also called a pre-tested loop. It is typically used when the number of iterations is not known.

In [5]:

```
#example
i = 1
while i < 6:
    print(i)
    i += 1
```

1
2
3
4
5

Q6 use neasted while loop to print 3 different pattern.

In [6]:

#pattern 1

```

i = 1
while i <= 4 :
    j = 1
    while j <= i:
        print("*", end = " ")
        j += 1
    print()
    i += 1

```

```

*
* *
* * *
* * * *

```

In [8]:

#pattern 2

```

i = 1
while i <= 4 :
    j = 4
    while j >= i:
        print("*", end = " ")
        j -= 1
    print()
    i += 1

```

```

* * * *
* * *
* *
*

```

In [9]:

#pattern 3

```

i = 1
while i <= 3:
    j = 1
    while j <= 3 - i:
        print(' ', end='')
        j += 1
    k = 1
    while k <= i:
        print(k, end='')
        k += 1
    print('\n')
    i += 1

```

```

1
12
123

```

Q7 Reverse a while loop to display numbers from 10 to 1

In [10]:

```
i = 10
while i > 0:
    print(i)
    i = i - 1
```

10
9
8
7
6
5
4
3
2
1

Q8 Reverse a while loop to display numbers from 10 to 1

In [11]:

```
i = 10
while i > 0:
    print(i)
    i = i - 1
```

10
9
8
7
6
5
4
3
2
1