**Question 1: Write a program to accept percentage from the user and display the grade according to the following criterion:**

Ans:

marks = int(input('Enter the percentage obtained')) ## taking input for percentage

if marks>90:

print('Grade: A')

elif marks<=90 and marks>80:

print('Grade: B')

elif marks<=80 and marks>=60:

print('Grade: C')

else:

print('Grade D')

**Question 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.**

Ans:

Bike\_price = int(input('Enter the cost of the bike')) ## Input for the cost of the bike

if Bike\_price>100000:

tax\_paid = Bike\_price\*15/100

elif Bike\_price>50000 and Bike\_price<=100000:

tax\_paid = Bike\_price\*10/100

else:

tax\_paid = Bike\_price\*5/100

print('The Tax to be paid for the Bike is: ', tax\_paid)

**Question 3: Accept any city from the user and display monuments of that city.**

Ans

city = input('Please enter the name of the city')

if city.lower()=='Delhi'.lower():

print(f'The monument in {city} is: Red Fort')

if city.lower()=='Agra'.lower():

print(f'The monuments in {city} is: Taj Mehal')

if city.lower()=='Jaipur'.lower():

print(f'The monuments in {city} is: Jal Mehal')

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

Ans**:**

number = int(input('Please enter the number'))

count = 0

num = number

while (number>10):

number = number/3

count = count+1

print(f'The number of times {num} can be divided by 3 before it is less than or equal \

to 10 The number is', count)

**Question 5: Why and When to use while loop in python give a detailed description with example.**

**Ans:**

While loop is used to execute block of codes again and again until a given condition is met. when the condition becomes false, the line just after the loop in the program is executed

While loop is used when the number of times the loop will be executed is not specified in advance.

Example: Like in question 4, we have to find, how many times the number can be divided by 3 before it is less than or equal to 10.

if number is more, loop will be executed more times and if number is smaller, loop will be executed lesser times.

like if the number is 1000, loop will be executed for 5 times. If the number is 100, the loop will be executed 3 times.

In advance, how many times the loop will be executed is specified.

**Question 6: Use a nested loop to print 3 different patterns.**

**Ans:**

## 1st Pattern

n = int(input('Enter the height of the pyramid'))

i=1

j=0

while(i<=n):

while(j<=i-1):

print("\* ",end="")

j+=1

# printing next line for each row

print("\r")

j=0;i+=1

Run :

Enter the height of the pyramid 5

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

## 2nd Pattern

n = int(input('Enter the height of the pyramid'))

i = n

while i >= 1:

j = n

while j > i:

# display space

print(' ', end=' ')

j -= 1

k = 1

while k <= i:

print('\*', end=' ')

k += 1

print()

i -= 1

Run:

Enter the height of the pyramid 5

\* \* \* \* \*

\* \* \* \*

\* \* \*

\* \*

\*

## 3rd Pattern

n = int(input('Enter the height of the pyramid'))\*2

print("\*" \* n, end="\n")

i = (n // 2) - 1

j = 2

while i != 0:

while j <= (n - 2):

print("\*" \* i, end="")

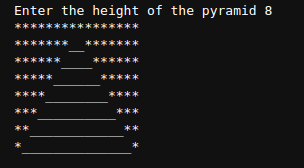
print("\_" \* j, end="")

print("\*" \* i, end="\n")

i = i - 1

j = j + 2

Run:



**Question 7. Reverse a while loop to display numbers from 10 to 1.**

Ans:

i = 10

while i > 0:

print(i)

i = i - 1

**Question 8. Reverse a while loop to display numbers from 10 to 1.**

Ans:

i = 10

while i > 0:

print(i)

i = i - 1