

1. Write a program to accept percentage from the user and display the grade according to the following

Marks

Grade

>90

A

>80 and <=90

B

>=60 and <=80

C

below 60

D

```
In [4]: # program
marks=int(input("enter your marks (marks <=100) \n"))
if marks > 90:
    print("A grade")
elif marks > 80 and marks <=90:
    print("B grade")
elif marks >=60 and marks <=80:
    print("C grade")
else:
    print("D grade")
```

enter your marks (marks <=100)
78
C grade

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

15%

10%

5%

Cost Price(in Rs)

>100000

50000 and <= 100000

<= 50000

```
In [15]: # program

price_of_bike=int(input("enter the price of bike (upto 10000)="))
if price_of_bike > 100000:
    GST=price_of_bike*15/100
    total_gst=price_of_bike+GST
    print(total_gst,"with 15% gst")
elif price_of_bike > 50000:
    GST=price_of_bike*10/100
    total_gst=price_of_bike+GST
    print(total_gst,"with 10% gst")
else :
    price_of_bike<=50000
    GST=price_of_bike*5/100
    total_gst=price_of_bike+GST
    print(total_gst,"with 5% gst")
```

enter the price of bike (upto 10000)=55000
66500.0 with 10% gst

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

City

Monument

Delhi

Red Fort

Taj Mahal

Agra

Jaipur

Jal Mahal

```
In [23]: # programs
city=str(input("enter city name and view your momument=\n"))
if city=="Delhi":
    print("Red Fort")
elif city=="Agra":
    print("Taj Mahal")
else:
    city=="Jaipur"
    print("Jal Mahal")
```

enter city name and view your momument=
Jaipur
Jal Mahal

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

```
In [39]: # program
num=int(input("a number "))
if num%3==0 and num<=9 :
    print("divided")
else:
    print("not a valid number")
```

a number 9
divided

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

```
In [40]: # 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 [41]: # example
# program to display numbers from 1 to 5

# initialize the variable
i = 1
n = 5

# while loop from i = 1 to 5
while i <= n:
    print(i)
    i = i + 1
```

1
2
3
4
5

6. Use nested while loop to print 3 different pattern

```
In [45]: # example 1
rows = 6
# if you want user to enter a number, uncomment the below line
# rows = int(input('Enter the number of rows'))
# outer loop
for i in range(rows):
    # nested loop
    for j in range(i):
        # display number
        print(i, end=' ')
    # new line after each row
    print('\n')
```

1
2 2
3 3 3
4 4 4 4
5 5 5 5 5

```
In [46]: # example 2
i=1
while i<=5:
    j=1
    while j<=i:
        print(j,end=" ")
        j=j+1
    print("")
    i=i+1
```

1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

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

```
In [48]: i = 10
while 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 10 to 1.

```
In [49]: i = 10
while i > 0:
    print(i)
    i = i - 1
```

10
9
8
7
6
5
4
3
2
1

In []: