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

>260 and <=80 c

below 60 D

**Solution:**

percentageValue=float(input("Please input valid percentage value"))  
if percentageValue >90:  
 print("You are in Grade A")  
elif percentageValue > 80 and percentageValue <= 90:  
 print("You are in Grade B")  
elif percentageValue >= 60 and percentageValue <= 80:  
 print("You are in Grade C")  
else:  
 print("You are in Grade D")

**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 Rupees** |
| **15%** | **> 100000** |
| **10%** | **>50000 and <=100000** |
| **5%** | **<=50000** |
|  |  |

**Solution:**

CP=float(input("Please input valid Costprice value of the bike"))  
if CP >100000:  
 print("Tax to be paid is ",0.15\*CP)  
elif CP > 50000 and CP <= 100000:  
 print("Tax to be paid is ",0.10\*CP)  
else:  
 print("Tax to be paid is ",0.05\*CP)

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

|  |  |
| --- | --- |
| **City** | **Monument** |
| **Delhi** | **Red Fort** |
| **Agra** | **Taj Mahal** |
| **Jaipur** | **Jal Mahal** |

**Solution:**

City = input("Please input valid City name to know the Monument")  
if City == "Delhi":  
 print("Monument in "+ City + " is Red Fort")  
elif City == "Agra":  
 print("Monument in " + City + " is Taj Mahal")  
elif City == "Jaipur":  
 print("Monument in " + City + " is Jal Mahal")  
else:  
 print("Sorry, Monument in " + City + " is not in our list")

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

**Solution:**

for i in range(1,11):  
 print("total times ",i , " is divided by 3 is ",int(i/3))

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

**Solution:**

* **We use while loop when we want to execute a set of statements with the condition as long as the condition is true**
* **We want to perform certain task as long as the condition is positive**

**Example)**

**As long as our file pointer is not in End of File, we want to read the content of text file**

**As long as the timer is less than 30 mins, we will perform Greeting task**

i = 1  
while i <= 20:  
 print(i)  
 i += 1  
else:  
 print("i is no longer less than 20")

1. **Use nested while loop to print 3 different pattern**

**Solution:**

**Right Angle Triangle**

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

**Pattern to print Square:**

rows = int(input())  
i=1  
j=1  
while i<=rows+1:  
 j=1  
 while j<=rows+1:  
 if j <= i:  
 print("\*", end=' ')  
 else:  
 print("\*", end=' ')  
 j=j+1  
 i = i + 1  
 print(" ")

**Pattern for Equilateral Triangle**

n = int(input())  
k = n - 1  
i=0  
j=0  
while i<=n:  
 j=0  
 while j<=k:  
 print(end = " ")  
 j=j+1  
 k -= 1  
  
 while j<=i+1:  
  
 print("\* ", end='')  
 j=j+1  
  
 print("\n")  
 i=i+1

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

**Solution:**

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