

Assignment 02: 30 Jan 2023

1. Write a program to accept percentage from the user & display the grade according to the following criteria:

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

2. Write a program to accept the cost price of a bike and display the read tax to be paid according to the following criteria:

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

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

City	Monument
Delhi	Red Fort
Agra	Taj Mahal
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.

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

6. Use a nested while loop to print 3 different patterns.

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

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

1. Write a program to accept percentage from the user & display the grade according to the following criteria:

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

Ans:

```
per = int(input("Enter percentage: "))
```

```
print ("Grade is ")
```

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```

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

```

2. Write a program to accept the cost price of a bike and display the read tax to be paid according to the following criteria:

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

Ans:

```

cp = int(input("Enter cost price of bike: "))
print ("Payable tax is ")
if cp > 100000 :
    print("15")
elif cp > 50000 and cp <= 100000 :
    print("10%")
else:
    print ("5%")

```

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

City	Monument
Delhi	Red Fort
Agra	Taj Mahal
Jaipur	Jai Mahal

Ans:

```

city = input("Enter city name: ")
print ("Monument is ")
if city == 'Delhi' or city == 'delhi' :
    print("Red Fort")
elif city == 'Agra' or city == 'agra':
    print("Taj Mahal")
elif city == "Jaipur" or city == "jaipur" :
    print("Jai Mahal")
else:
    print ("Invalid Choice! please select from given table.")

```

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

Ans:

```
n= int(input("Enter Number: "))
if n>0 :
    if n%3 ==0 :
        count=0
        while n>10 :
            quo = n / 3
            n = quo
            count=count + 1
        print(count)
    else :
        print("Number is not divisible by 3")
        print("i.e count=0")
else :
    print("Please select positive number")
```

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

Ans: **Python While Loop** is used to execute a block of statements repeatedly until a given condition is satisfied. And when the condition becomes false, the line immediately after the loop in the program is executed.

Syntax:

```
while expression:
    statement(s)
```

Eg:

```
i = 1
n = 5
while i <= n:
    print(i)
    i = i + 1
```

6. Use a nested while loop to print 3 different patterns.

Ans:

```
*
```

```
**
```

```
***
```

```
****
```

```
n = int(input("Enter number of rows : "))
```

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

```
print()
i += 1
Enter number of rows : 4
1
2 3
4 5 6
7 8 9 10
n = int(input("Enter number of rows : "))
k = 1
i = 1
while i <= n :
    j = 1
    while j <= i:
        print("{:3d}".format(k), end = " ")
        j += 1
        k += 1
    print()
    i += 1
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
n = int(input("Enter number of rows : "))
i=1
while i<=n:
    j=1
    while j<=i:
        print(j,end=" ")
        j=j+1
    print("")
    i=i+1
```

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

Ans:

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

8. Reverse a for loop to display numbers from 10 to 1

Ans:

```
n=10
i= -1
for i in range (n, 0, i) :
    print(i)
```