30th Jan Assignment

February 4, 2023

1 Assignment 2

Q1.Write a program to accept percentage from user and display the grade according to following criteria:

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

```python
[2]: marks=int(input('Enter the marks'))

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

```
Enter the marks 90

B
```

Q2.Write a program to accept cost price of a bike and display the road tax to be paid according to following criteria:

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

```python
[3]: cost_price=int(input('Enter the cost price in Rs.'))
```

```python
if cost_price>100000:
    print(0.15*cost_price)
elif cost_price>50000 and cost_price<=100000:
    print(0.1*cost_price)
else:
    print(0.05*cost_price)
```

Enter the cost price in Rs. 50000

2500.0

Q3.Write a program to accept any city from user and display monuments of that city:

City	Monument
Delhi	Red Fort
Agra	Taj Mahal
Jaipur	Hawa Mahal

```python
[4]: city=input('Enter the city')

     if city=='Delhi':
         print('Red Fort')
     if city=='Agra':
         print('Taj Mahal')
     if city=='Jaipur':
         print('Hawa Mahal')
```

Enter the city Jaipur

Hawa Mahal

Q4.Check how many time a given number can be divided by 3 before it is less than or equal to 10.

```python
[5]: number=int(input('Enter the number'))
     times=0
     while number>10:
         if number%3==0:
             times=times+1
             number=number/3
     print(times)
```

Enter the number 36

2

Q5.Why and when to use while loop in python give a detailed description with example?

Ans.We use while loop when we not know about number of iterations. It runs until and unless condition is true

```
[6]:  #example of while loop
      #print the number from 1 to 10
      i=1
      while i<11:
          print(i)
          i=i+1
```

```
1
2
3
4
5
6
7
8
9
10
```

Q6.Use nested while loop to print 3 different pattern.

Ans.The three patterns are

```
[13]:  #Pattern 1 - Rectangle pattern
       rows=3
       cols=5
       i=0
       while i<rows:
           j=0
           while j<cols:
               print('*',end=" ")
               j=j+1
           i=i+1
           print()
```

```
* * * * *
* * * * *
* * * * *
```

```
[15]:  #Pattern 2 - Square pattern
       sides=4
       i=0
       while i<sides:
           j=0
           while j<sides:
               print('*',end=" ")
               j=j+1
```

```
        i=i+1
    print()
```

```
* * * *
* * * *
* * * *
* * * *
```

[17]:
```
#Pattern 3 - Rectangular number pattern
rows=3
cols=5
i=1
while i<=rows:
    j=1
    while j<=cols:
        print(j,end=" ")
        j=j+1
    i=i+1
    print()
```

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

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

[19]:
```
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.

[20]:
```
i=10
while i>0:
    print(i)
    i=i-1
```

10
9
8
7
6
5
4
3
2
1