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

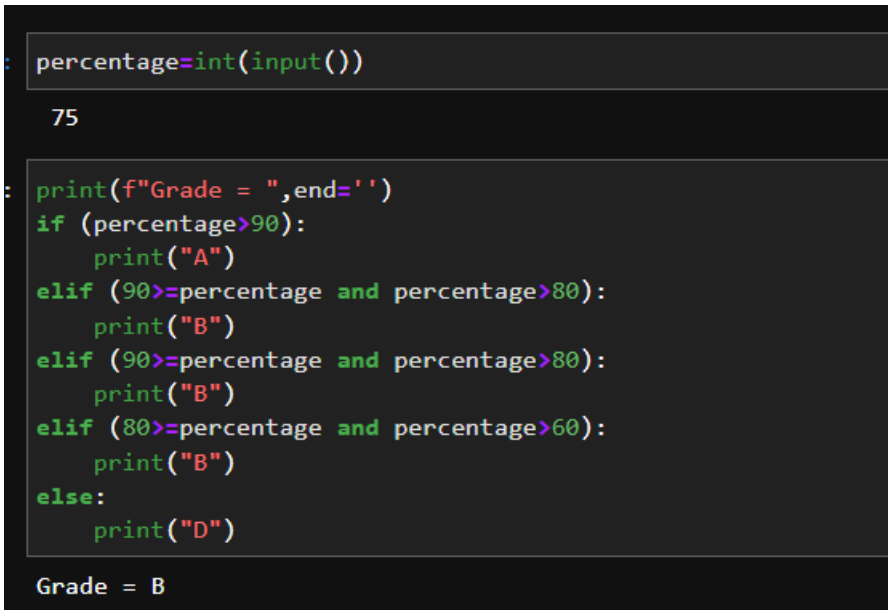
CODE:

```
percentage=int(input())

print(f"Grade = ",end='')

if (percentage>90):
    print("A")
elif (90>=percentage and percentage>80):
    print("B")
elif (90>=percentage and percentage>80):
    print("B")
elif (80>=percentage and percentage>60):
    print("B")
else:
    print("D")
```

OUTPUT:



Q.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:

CODE:

```
cost_price=int(input())
print("Road Tax = ",end='')
if(cost_price>100000):
    print(f"{15*(cost_price)/100}")
elif(100000>=cost_price and cost_price>50000):
    print(f"{10*(cost_price)/100}")
else:
    print(f"{5*(cost_price)/100}")
```

OUTPUT:

```
cost_price=int(input())
print("Road Tax = ",end='')
if(cost_price>100000):
    print(f"{15*(cost_price)/100}")
elif(100000>=cost_price and cost_price>50000):
    print(f"{10*(cost_price)/100}")
else:
    print(f"{5*(cost_price)/100}")
 80000
Road Tax = 8000.0
```

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

CODE:

```
city=input("Enter City : ")
print("Monument = ",end='')
if(city=="Delhi"):
   print("Red Fort")
elif(city=="Agra"):
   print("Taj Mahal")
elif(city=="Jaipur"):
   print("Jai Mahal")
```

OUTPUT:

```
city=input("Enter City : ")
print("Monument = ",end='')
if(city=="Delhi"):
    print("Red Fort")
elif(city=="Agra"):
    print("Taj Mahal")
elif(city=="Jaipur"):
    print("Jai Mahal")
```

```
Enter City :  Agra
Monument = Taj Mahal
```

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

CODE:

```
number=int(input("Enter Number : "))
num=number
count=0
while((number/3)>=10):
    count=count+1
    number=number/3
print(f"{num} can be divided for {count} times")
```

OUTPUT:

```
Enter Number :  256
256 can be divided by 3 for 2 times
```

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

Ans->Usually while Loop is used when we have to increment value to particular target and for each increment we have to see some condition. Until loop is not done it does not come out.

It runs until given condition is proven false.

Eg:Sum of first 10natural numbers for this while loop will work for first 10 numbers and then it will come out

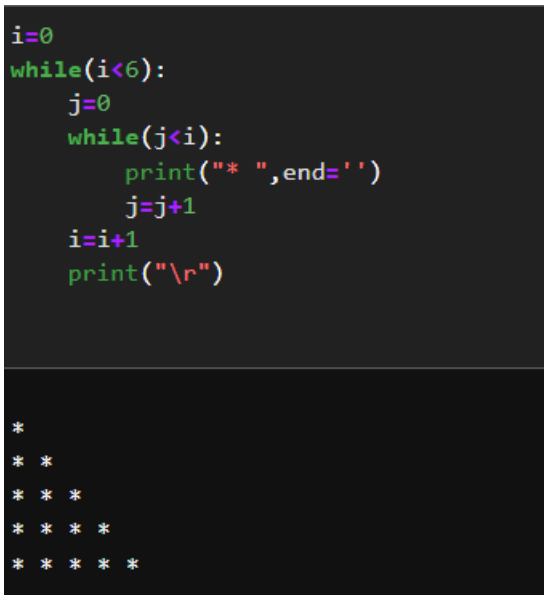
Q.6) Use nested while loop to print 3 different pattern.

i)

CODE:

```
i=0
while(i<6):
    j=0
    while(j<i):
        print("* ",end='')
        j=j+1
    i=i+1
    print("\r")
```

OUTPUT:



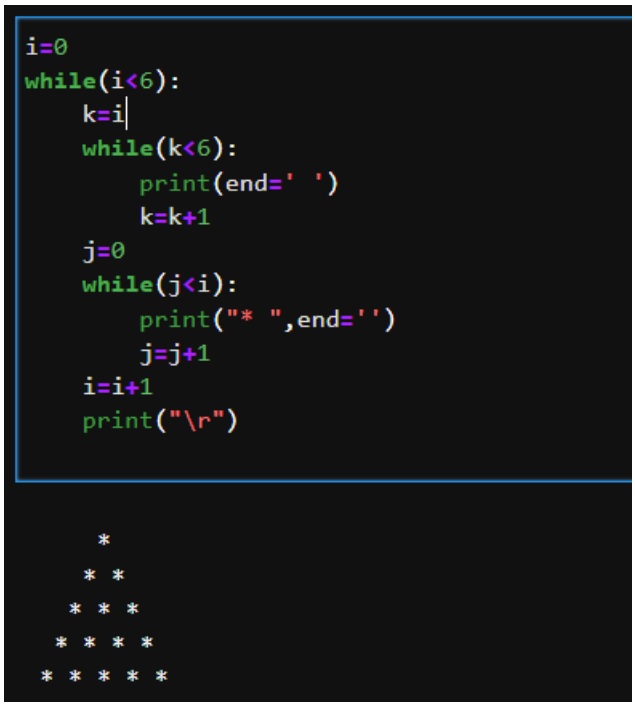
ii)

CODE:

```
i=0
```

```
while(i<6):
    k=i
    while(k<6):
        print(end=' ')
        k=k+1
    j=0
    while(j<i):
        print("* ",end='')
        j=j+1
    i=i+1
    print("\r")
```

OUTPUT:



iii)

CODE:

```
i=0
while(i<6):
    k=i
    while(k<6):
```

```
    print(end=' ')
    k=k+1
  j=0
  while(j<i):
    print("* ",end='')
    j=j+1
  i=i+1
  print("\r")
```

OUTPUT:

```
i=0
while(i<6):
    k=i
    while(k<6):
        print(end=' ')
        k=k+1
    j=0
    while(j<i):
        print("* ",end='')
        j=j+1
    i=i+1
    print("\r")
p=6;
while(p>0):
    k=p
    while(k<6):
        print(end=' ')
        k=k+1
    j=0
    while(j<p):
        print("* ",end='')
        j=j+1
    p=p-1
    print("\r")
```

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

Q.6)Reverse a while loop to display numbers from 10 to 1.

CODE:

```
num=10
while(num>0):
   print(f"{num}")
   num=num-1
```

OUTPUT: