Q1

#1 Program to accept percentage from user and display grade

per = float(input("Enter the percentage :"))

if per > 90:

print("Grade A")

elif per > 80 and per <= 90:

print("Grade B")

elif per >= 60 and per <= 80:

print("Grade C")

else:

print("Grade D")

Output:

Enter the percentage :89.5

Grade B

Q2

#2 Accept cost price and display road tax to be paid

cost\_price = int(input("Enter the cost price of the bike :"))

if cost\_price > 100000:

print("Road Tax is ",cost\_price\*0.15)

elif cost\_price > 50000 and cost\_price <= 100000:

print("Road Tax is ",cost\_price\*0.1)

else:

print("Road Tax is ",cost\_price\*0.05)

Output:

Enter the cost price of the bike :97000

Road Tax is 9700.0

Q3

#3 Accept any city from user and display monuments of that city

city = input("Enter a city from the given list:\n1.Delhi 2.Agra 3.Jaipur :")

if city == 'Delhi':

print("Monument : Red Fort")

elif city == 'Agra':

print("Monument : Taj Mahal")

elif city == 'Jaipur':

print("Monument : Jal Mahal")

else:

print("Sorry! No information available for the entered city.")

Output:

Enter a city from the given list:

1.Delhi 2.Agra 3.Jaipur :Jaipur

Monument : Jal Mahal

Q4

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

n = 2541

c = 0

while n > 10:

n = n // 3

c = c + 1

#print(n)

print("Count :",c)

Output:

Count : 5

Q5

i) while loop is used when the number of iterations are not fixed.The while loop runs until the given condition is met.

ii) Syntax for while loop:

while condition:

# body of while loop

1. A while loop evaluates the condition.
2. If the condition is True, it executes the block of code inside it.
3. Again evaluates the condition
4. The process continues until the condition is False
5. When the condition is evaluated to False, it stops.

iii) We can also use an else block after the while loop is executed.

iv) while loop can be stated as entry control loop as condition is checked before the control enters the loop.

v) while loop can run infinite times if the condition never gets False.

vi) Example of a while loop

a = 1

while a != 10:

print(a,end=” ”)

a = a + 1

Q6

n = 5

print("Pattern 1")

while n >= 1:

i = 1

while i <= 5:

print("\*",end=" ")

i = i + 1

n = n - 1

print()

Output:

Pattern 1

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

n = 5

print("Pattern 2")

while n >= 1:

i = 1

while i <= n:

print("\*",end=" ")

i = i + 1

n = n - 1

print()

Output:

Pattern 2

\* \* \* \* \*

\* \* \* \*

\* \* \*

\* \*

\*

ch = 5

n = 1

print("Pattern 3")

while n <= ch:

i = 1

while i <= n:

print(i,end=" ")

i = i + 1

n = n + 1

print()

Output:

Pattern 3

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

Q7,Q8

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

a = 10

while a>0:

print(a,end=" ")

a = a - 1

Output:

10 9 8 7 6 5 4 3 2 1