In [1]:
```
for i in range(5):
    print(i)
```

```
0
1
2
3
4
```

In [2]:
```
count = 0
while count < 5:
    print(count)
    count += 1
```

```
0
1
2
3
4
```

In [3]:
```
# Using for loop
sum_for = 0
product_for = 1

for num in range(1, 11):
    sum_for += num
    product_for *= num

# Using while loop
n = 1
sum_while = 0
product_while = 1

while n <= 10:
    sum_while += n
    product_while *= n
    n += 1

print("Using for loop:")
print("Sum:", sum_for)
print("Product:", product_for)

print("\nUsing while loop:")
print("Sum:", sum_while)
print("Product:", product_while)
```

```
Using for loop:
Sum: 55
Product: 3628800

Using while loop:
Sum: 55
Product: 3628800
```

In [4]:
```
units_consumed = float(input("Enter the units of electricity consumed: "))

if units_consumed <= 100:
    bill = units_consumed * 4.5
elif units_consumed <= 200:
    bill = 100 * 4.5 + (units_consumed - 100) * 6
elif units_consumed <= 300:
    bill = 100 * 4.5 + 100 * 6 + (units_consumed - 200) * 10
else:
    bill = 100 * 4.5 + 100 * 6 + 100 * 10 + (units_consumed - 300) * 20

print("Electricity Bill:", bill)
```

```
Enter the units of electricity consumed: 10
Electricity Bill: 45.0
```

In [5]:
```
# Using for loop
cubes_for = []
for num in range(1, 101):
    cube = num ** 3
    if cube % 4 == 0 or cube % 5 == 0:
        cubes_for.append(cube)

# Using while loop
num = 1
cubes_while = []
while num <= 100:
    cube = num ** 3
    if cube % 4 == 0 or cube % 5 == 0:
        cubes_while.append(cube)
    num += 1

print("Cubes divisible by 4 or 5 using for loop:", cubes_for)
print("Cubes divisible by 4 or 5 using while loop:", cubes_while)
```

```
Cubes divisible by 4 or 5 using for loop: [8, 64, 125, 216, 512, 1000, 17
28, 2744, 3375, 4096, 5832, 8000, 10648, 13824, 15625, 17576, 21952, 2700
0, 32768, 39304, 42875, 46656, 54872, 64000, 74088, 85184, 91125, 97336,
110592, 125000, 140608, 157464, 166375, 175616, 195112, 216000, 238328, 2
62144, 274625, 287496, 314432, 343000, 373248, 405224, 421875, 438976, 47
4552, 512000, 551368, 592704, 614125, 636056, 681472, 729000, 778688, 830
584, 857375, 884736, 941192, 1000000]
Cubes divisible by 4 or 5 using while loop: [8, 64, 125, 216, 512, 1000,
1728, 2744, 3375, 4096, 5832, 8000, 10648, 13824, 15625, 17576, 21952, 27
000, 32768, 39304, 42875, 46656, 54872, 64000, 74088, 85184, 91125, 9733
6, 110592, 125000, 140608, 157464, 166375, 175616, 195112, 216000, 23832
8, 262144, 274625, 287496, 314432, 343000, 373248, 405224, 421875, 43897
6, 474552, 512000, 551368, 592704, 614125, 636056, 681472, 729000, 77868
8, 830584, 857375, 884736, 941192, 1000000]
```

In [6]:
```
string = "I want to become a data scientist"
vowels = "aeiouAEIOU"
vowel_count = 0

for char in string:
    if char in vowels:
        vowel_count += 1

print("Number of vowels in the string:", vowel_count)
```

```
Number of vowels in the string: 12
```

In [ ]:
```

```