**Module 6. Loops**

**TRUE/FALSE**

1. The for loop is used to iterate over a sequence such as a list or a string.

Answer: T

1. The while loop repeats a block of code as long as a specified condition is true.

Answer: T

1. Using a loop structure can reduce code readability.

Answer: F

1. The break statement allows you to exit a loop immediately.

Answer: T

1. The continue statement skips the rest of the code inside the current iteration of the loop.

Answer: T

1. In Python, the range function can be used in while loops to generate a sequence of numbers.

Answer: F

1. Nested loops allow you to have a loop inside another loop.

Answer: T

1. The else block in a for loop executes only if the loop is terminated by a break statement.

Answer: F

1. A while loop must always contain a break statement.

Answer: F

1. The condition for a while loop is checked before executing the loop body.

Answer: T

1. In a for loop, the else block executes after the loop completes all iterations.

Answer: T

1. Infinite loops are generally unintended and can cause a program to become unresponsive.

Answer: T

1. A for loop can iterate over elements of a list without needing an index variable.

Answer: T

1. The continue statement in a loop allows the loop to continue from the top, skipping the current iteration.

Answer: T

1. The break statement can only be used in while loops.

Answer: F

1. You can customize the range function by specifying start, stop, and step values.

Answer: T

1. The else block in a while loop executes when the loop condition becomes false without a break.

Answer: T

1. The for loop in Python abstracts away the need for a counter variable.

Answer: T

1. An infinite loop can be created using the condition while True:.

Answer: T

1. A for loop can iterate over characters in a string.

Answer: T

1. The break statement, when executed, will prevent the else block from executing in a for loop.

Answer: T

1. The continue statement can be used to skip certain iterations based on a condition.

Answer: T

1. A while loop's condition is checked after executing the loop body.

Answer: F

1. A for loop can iterate over keys in a dictionary.

Answer: T

1. The while loop will stop executing once the condition becomes false.

Answer: T

**MULTIPLE CHOICE**

1. What type of loop structure repeats the code based on the value of a Boolean expression?

a. Condition-controlled loop

b. Number-controlled loop

c. Count-controlled loop

d. Boolean-controlled loop

Answer: A

1. Which statement can be used to terminate a loop immediately?

a. Exit

b. Stop

c. Break

d. Continue

Answer: C

1. Which of the following is the correct syntax for a for loop in Python?

a. for (item in sequence):

b. for item in sequence

c. for item: in sequence

d. for item in sequence:

Answer: D

1. What does the range(3, 12, 3) function return?

a. [3, 4, 5, 6, 7, 8, 9, 10, 11]

b. [3, 6, 9]

c. [3, 6, 9, 12]

d. [3, 12, 3]

Answer: B

1. Which statement skips the rest of the code in the current iteration and moves to the next iteration?

a. Break

b. Continue

c. Skip

d. Pass

Answer: B

1. What will be the output of the following code?

*for x in range(2, 6):*

*print(x)*

a. 2, 3, 4, 5

b. 2, 3, 4, 5, 6

c. 1, 2, 3, 4, 5

d. 2, 3, 4, 5, 6, 7

Answer: A

1. What will the following code print?

*fruits = ["apple", "banana", "cherry"]*

*for fruit in fruits:*

*print(fruit)*

a. apple banana cherry

b. apple, banana, cherry

c. ['apple', 'banana', 'cherry']

d. ("apple", "banana", "cherry")

Answer: A

1. What type of loop will continue indefinitely until interrupted?

a. Endless loop

b. Infinite loop

c. Forever loop

d. Continuous loop

Answer: B

1. In which scenario would you use a while loop instead of a for loop?

a. When you know the number of iterations

b. When iterating over a sequence

c. When the number of iterations is not known beforehand

d. When using the range function

Answer: C

1. What does the following for loop do?

*for letter in "Python":*

*if letter == "h":*

*continue*

*print(letter)*

a. Prints each letter in "Python"

b. Skips printing "h"

c. Stops the loop at "h"

d. Prints only "h"

Answer: B

1. Which of the following is a feature of for loops in Python?

a. They require a counter variable.

b. They can only iterate over lists.

c. They can iterate over any iterable object.

d. They cannot be nested.

Answer: C

1. How many times will the following while loop execute?

*i = 0*

*while i < 5:*

*i += 1*

a. 4

b. 5

c. 6

d. Indefinitely

Answer: B

1. What will be the output of the following code?

*x = 1*

*while x < 10:*

*print(x)*

*x += 2*

a. 1, 2, 3, 4, 5, 6, 7, 8, 9

b. 1, 3, 5, 7, 9

c. 2, 4, 6, 8, 10

d. 1, 3, 5, 7, 9, 11

Answer: B

1. What will the following code print?

*for x in range(3):*

*for y in range(2):*

*print(x, y)*

a. (0, 0), (0, 1), (1, 0), (1, 1), (2, 0), (2, 1)

b. (0, 0), (1, 1), (2, 2)

c. (0, 0), (1, 0), (2, 0)

d. (0, 1), (1, 2), (2, 3)

Answer: A

1. In the following code, what will print(x) output?

*x = 10*

*while x > 0:*

*x -= 2*

*print(x)*

a. 0

b. 2

c. -2

d. 1

Answer: C

1. What keyword can be used to define an else block in a loop that executes after the loop completes all iterations?

a. End

b. Done

c. Else

d. Final

Answer: C

1. Which of the following best describes a for loop?

a. A loop that continues indefinitely.

b. A loop that iterates over a sequence.

c. A loop that always executes at least once.

d. A loop that only works with numbers.

Answer: B

1. What will the following code output?

*count = 0*

*while count < 3:*

*print("Hello")*

*count += 1*

a. "Hello"

b. "Hello" "Hello" "Hello"

c. "Hello" "Hello"

d. No output

Answer: B

1. What does the break statement do in a loop?

a. Skips to the next iteration

b. Exits the loop entirely

c. Ends the program

d. Pauses the loop

Answer: B

1. What will be printed by the following code?

*x = 0*

*while x < 5:*

*x += 1*

*if x == 3:*

*break*

*print(x)*

a. 1 2

b. 1 2 3

c. 1 2 3 4 5

d. No output

Answer: A

1. Which of the following is true about the range function?

a. It can only generate sequences starting from 0.

b. It cannot have a negative step value.

c. It can generate sequences with custom start, stop, and step values.

d. It generates floating-point sequences.

Answer: C

1. How many times will the loop execute in the following code?

*for i in range(4):*

*for j in range(2):*

*print(i, j)*

a. 2

b. 4

c. 8

d. 6

Answer: C

1. What does the else block do in a while loop?

a. Executes when the loop is interrupted

b. Executes only when the loop completes without a break

c. Runs before the loop starts

d. Repeats the loop

Answer: B

1. What will the following code print?

*for x in range(5):*

*if x == 3:*

*continue*

*print(x)*

a. 0 1 2 3 4

b. 0 1 2 4

c. 0 1 2 3 4 5

d. 1 2 3 4

Answer: B

1. What is the output of the following code?

*n = 2*

*while n < 6:*

*n += 1*

*print(n)*

a. 3 4 5 6

b. 2 3 4 5 6

c. 3 4 5

d. 3 4 5 6 7

Answer: A