Question 3: Converting an Iterator to a List In both Java and Python, demonstrate how to convert an iterator to a list. Include code examples for both languages.

Ans.

In Python:

iterator=iter([1,2,3,4]) { //Create an iterator fro list

list\_from\_iter=list(iterator) //converts iterator into list

print(list\_from\_iter) } // Display List in the output

In Java:

import java.util.ArrayList;{ // Include Array List Class from java.util package

import java.util.Iterator; //Include Iterator interface from java.util package

import java.util.List;//Include List interface from java.util package

public class IteratorToListExample { //Declaration of a java class name

    public static void main(String[] args) {// Entry point of java application

        Iterator<String> iterator = List.of("apple", "banana", "cherry").iterator();// Create an Iterator for a List of String elements

        List<String> list = iteratorToList(iterator); //Convert Iterator to List

        System.out.println(list); // Display the Print message to the Console

    }

    public static <T> List<T> iteratorToList(Iterator<T> iterator) { //Converts an iterator into a List

        List<T> list = new ArrayList<>();//Create new instance of an ArrayList and assign it to a variable of type list

        while (iterator.hasNext()) { //While used to iterate over a collection of elements using an iterator

            list.add(iterator.next());// Add next element from an iterator to a List

        }

        return list;} // Return the list variable from a method

    }

}