**Discussion Question:**

An infinite loop is one that iterates nonstop. Research the internet for common causes to the problem and some of the ways you can write code that tries to prevent them. Post two examples, one example with an infinite loop and a second example that shows how to correct the problem.

**Assignment Requirements and Grading:**

1. An initial post of approximately 250 words is due by **Thursday, 11:59 p.m., CST**.

An infinite loop is iteration of a loop that never ends unless the system crashes. In another word, an infinite loop is a code that never stops. It continues running until the program fails. There are many causes to infinite loop. First, if the condition in a while loop is always true, the code will continue running because there is no change in the condition. Infinite loop can happen if the variable that we are testing or evaluating in the loop is not changed or updated. For example, if we have a variable

int count = 2; //and we write a code

while( count <= 10) {System.out.println( “Hello”);}

Here is the infinite loop code

public class Infinite\_loop {

  public static void main(String[] args) {

    int count = 2;  //and we write a code

    while( count <= 10)

    {System.out.println("Hello");}

  }

}

This code will run nonstop because a variable count remains 2 that is inferior to 10; and the condition is always true.

Another cause of infinite loop is when there is not a sentinel value to end the program. Here is the definition of a sentinel value according to geeks for geeks website, “a special value called sentinel value is used to change the loop control expression from true to false in order to determine whether to execute the loop body.”

I found some helpful tips to keep in mind to avoid infinite loop in dummies.com article:

* “in while() and do…while() loops, make sure you have at least one statement within the loop that changes the value of the comparison”
* “in while() and do…while() loops, never rely on the user to enter a specific value to end the loop. She might cancel the prompt box or do something else that prevents the loop from terminating.”
* “insert one or more debugger and/or console.log() statements within the loop statement block to display the current value of the counter or comparison variable. This enables you to see what happens to the variable with each pass through the loop”.

Here is the correct loop

public class Welcome {

  public static void main(String[] args) {

    //System.out.println("Hello World");

    int count = 2;  //and we write a code

    while( count <= 10)

    {System.out.println("Hello");

    count = count +2;}  //increment or decrease the value.

  }

}

<https://www.geeksforgeeks.org/difference-between-sentinel-and-counter-controlled-loop-in-c/>

<https://www.dummies.com/article/technology/programming-web-design/general-programming-web-design/avoid-infinite-loops-javascript-254131/>

**Assignment:**

Write a program that uses a while loop to display the following math operations both in the smaller to larger order and then the larger to smaller order with the denominator being 3 through 99.  Ensure your application displays the mathematical results.

1/3.0 + 1/5.0 + 1/7.0 + ··· + 1/95.0 + 1/97.0 + 1/99.0

1/99.0 + 1/97.0 + 1/95.0 + ··· + 1/7.0 + 1/5.0 + 1/3.0

**Assignment Requirements and Grading:**