

Part 6: Exercising Loops

Solution Code

This appears tricky - but it's not tricky once you know how loops work and can kind of 'think' in those terms (i.e. setting up initial variables, increasing the counter variable and have correct conditional in place to keep the loop running).

Most people will not get this right - but if you did, you're a star! If not, don't worry - just review the section on loops and try again. It will make more sense the second time around. And at least now with this exercise, it's forced you to think and really understand about how the mechanics of loops really work. So it's more about solidifying your understanding than actually being able to complete the code at this point.

For the part where we said 'ensure the program output is the same' - that's just passing the new current amount worked out from the loop instead of the year 5 amount in the number formatting part (by the way, there's an easier way of formatting numbers as we'll see in the next challenge!)

Code Listings

App.java

```

package com.javaeasily.demos;

public class App {
    public static void main(String[] args) {
        System.out.println("Loan Calculator".toUpperCase());
        System.out.println();

        int amount = 100;
        int years = 5;
        double interestRate = 10;

        if (amount > 0 && years > 0 && interestRate > 0.0) {
            System.out.println("Calculating loan based on:");
            System.out.println("Principal:      " + amount);
            System.out.println("Loan Term:      " + years + " year" + ((years > 0
) ? "s" : ""));
            System.out.println("Interest Rate:  " + interestRate + "%");

            double interestRateMultiplier = 1 + interestRate / 100;

            double currentAmountPayable = amount;
            int currentYear = 1;
            while (currentYear <= years) {
                currentAmountPayable = currentAmountPayable * interestRateMultipli
er;

                currentYear++;
            }

            String totalAmountDue = Double.toString(currentAmountPayable);
            int indexOfDecimalPoint = totalAmountDue.indexOf(".");
            String totalAmountDueFormatted = totalAmountDue.substring(0, indexOfDe
cimalPoint+3);
            System.out.println("Total Amount Due: " + totalAmountDueFormatted);
        } else {
            System.out.println("Invalid values - cannot calculate repayment amount
.");
        }
    }
}

```