

# Part 8: Adding a class

## Solution Code

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This challenge was all about getting comfortable creating a new class, with the bits it might need (fields, constructor, getters) and also to get you used to manipulating code by hand too (the cut and paste of the code between classes). This is because oftentimes we might get it wrong in the beginning, and doing so gives a great opportunity to learn from what the compiler or IDE is telling us so we learn from our mistakes.

If you got it right first off though, great!

Oh, and the 'tightening up' part was just to inline the call to remove the `repaymentAmount` variable. I didn't do it this time though - you see, even the pro's can forget things too!

## 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) {
            printInputs(amount, years, interestRate);

            LoanCalculator calculator = new LoanCalculator(amount, years, interest
Rate);

            double repaymentAmount = calculator.calculateRepaymentAmount(amount, y
ears, interestRate);

            printResult(repaymentAmount);
        } else {
            System.out.println("Invalid values - cannot calculate repayment amount
.");
        }
    }

    private static void printInputs(int amount, int years, double interestRate) {
        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 + "%");
    }

    private static void printResult(double currentAmountPayable) {
        String totalAmountDue = Double.toString(currentAmountPayable);
        int indexOfDecimalPoint = totalAmountDue.indexOf(".");
        String totalAmountDueFormatted = totalAmountDue.substring(0, indexOfDecima
lPoint+3);
        System.out.println("Total Amount Due: " + totalAmountDueFormatted);
    }
}

```

## LoanCalculator.java

```
package com.javaeasily.demos;

public class LoanCalculator {
    private int amount = 100;
    private int years = 5;
    private double interestRate = 10;

    public LoanCalculator(int amount, int years, double interestRate) {
        this.amount = amount;
        this.years = years;
        this.interestRate = interestRate;
    }

    public double calculateRepaymentAmount(int amount, int years, double interestRate) {
        double interestRateMultiplier = 1 + interestRate / 100;

        double currentAmountPayable = amount;
        int currentYear = 1;
        while (currentYear <= years) {
            currentAmountPayable = currentAmountPayable * interestRateMultiplier;
            currentYear++;
        }
        return currentAmountPayable;
    }

    public int getAmount() {
        return amount;
    }

    public int getYears() {
        return years;
    }

    public double getInterestRate() {
        return interestRate;
    }
}
```