Java API: `java.text.DecimalFormat`

- The **DecimalFormat** class provides a way to control the appearance of numbers that are stored as String's.

- You create an instance of **DecimalFormat** for each format you want to use.

- Note: Have to import the **DecimalFormat** class from the *java.text* package:

  ```
  import java.text.DecimalFormat;
  ```

- Example:

  - Want to print integers with the commas, as in: 27,387,982 or 37,298.

```
int oneNum = 27387982;

int nextNum = 37298;

DecimalFormat commaFormat;

commaFormat = new DecimalFormat("#,###");

System.out.println("oneNum  = " + commaFormat.format(oneNum));

System.out.println("nextNum = " + commaFormat.format(nextNum));
```

  - The **#** symbol means to print a digit, but to not print leading zeroes.

  - The **,** in the format indicates where to put the commas in the final number.

- The **DecimalFormat** class can specify floating-point (**float** and **double**) values as well as integer values.
- The format string: **#,###.##** indicates the answer is to have no more than two decimal places.
  - The value will be correctly rounded automatically when printed.
- Example:

```
import java.text.DecimalFormat;


public class FormatExample2 {
   public static void main(String[] args) {
      float oneNum = 3.14159F;
      double nextNum = 3827967.2983659826398764982639580938475 6;

      DecimalFormat commaFormat;
      commaFormat = new DecimalFormat("#,###.##");
      String myPi = commaFormat.format(oneNum);

      System.out.println("oneNum  = " + commaFormat.format(oneNum));
      System.out.println("nextNum = " + commaFormat.format(nextNum));
   }
}
```

The output:
```
oneNumber  = 3.14
nextNumber = 3,827,967.3
```

Why only one decimal place?

- If you need two (or more) different formats in a program, you can declare multiple *instances* of **DecimalFormat**.

```java
import java.text.DecimalFormat;

public class Pennies {
   public static void main(String[] args) {
      float myBalance = 3426.07F;
      float myInterest;

      DecimalFormat dollarFormat = new DecimalFormat("$ #,##0.00");
      DecimalFormat pennyFormat = new DecimalFormat("#,###");

      myInterest = myBalance * 3.5F / 100;   // 3.5% interest rate

      System.out.print("Interest earned = ");
      System.out.println(dollarFormat.format(myInterest));

      System.out.print("Pennies earned = ");
      System.out.println(pennyFormat.format(myInterest * 100));

   }
}
```