

CS1092 : Inheritance in Java

(#4 of 4)

Gavin Brown

Kilburn Building, rm 2.81

gavin.brown@cs.man.ac.uk

www.cs.man.ac.uk/~gbrown/teaching/java/

First... dry labs next week...

	<i>1.1</i>	<i>LF-15/17</i>
<i>Tues 9am</i>	Z	X
<i>Thu 3pm</i>	C,D,M	Y

Read chapter 16 of the book by your dry lab time !!

Your dry lab exercise involves more reading, which builds on ch16 – and will be available in the resource centre Monday lunchtime at the latest.

Today

1. *Building an investment portfolio system*
2. *Wrapping up and relation to rest of the course*

Investments – interviewing a trader...

“So you want to talk about financial assets? Well in general, I guess there are two types – stocks and bonds.

“.... At the real basic level, every stock has a description (which starts with the letters “ST:” followed by the company name), a share price, plus of course the number of shares you own in that stock. The valuation of a stock is calculated by simply multiplying those two numbers.

...Bonds are little more complicated I guess, every bond has a name (which starts with the letters “BO:” followed by the name of the lending country), a purchase price, and the percentage of interest you’ve accumulated so far. Let’s say just for example the interest might be 10%, then the valuation is then calculated by the price plus 10% of the price, so in this case it would be... $\text{price} = \text{price} + (0.10 \times \text{price})$

...For any type of asset, there must obviously be a way to calculate its valuation – please make sure if I think up any more types of asset then you’ll be able to cope with this!”

Investments – interviewing a trader...

Q1. Design some classes to represent this (5 mins...)

Q2. Write a main method, where you create 4 or 5 instances of your financial asset classes, and store them in an array, called **"portfolio"**.

Q3. Now you are writing a method, called "checkPortfolio". It takes as an argument, an array of the type you defined in Q2. It checks your portfolio, and returns TRUE if it contains mostly bonds, or FALSE if it contains mostly stocks. I.E. if more bonds than stocks, return true otherwise false.

Inheritance: Relation to rest of the course

Exceptions

```
java.lang.Object
|
+--java.lang.Throwable
|
+--java.lang.Exception
|
+--java.lang.RuntimeException
|
+--java.lang.NullPointerException
```

```
public class myExceptionForWhenThingsScrewUp extends Exception
```

```
... 
```

```
if (thingsGoWrong()==true)
    throw new myExceptionForWhenThingsScrewUp();
```

Inheritance: Relation to rest of the course

Swing and building user interfaces

```
java.lang.Object
|
+--java.awt.Component
|
+--java.awt.Container
|
+--java.awt.Window
|
+--java.awt.Frame
|
+--javax.swing.JFrame
```

Remember this? (sec 12.2 of John's book)

```
public class HelloWorld extends JFrame {
    // a customized jframe!
}
```