

Exceptions

- I/O can lead to a range of exceptions and errors.
 - *..let's come back to this soon, so that we can get into details...*
 - For now, we'll put everything in a **try/catch**..

File I/O & Exceptions

```
try {  
  
    // all code that does file i/o  
  
} catch (IOException e) {  
    e.printStackTrace();  
}
```

File I/O & Exceptions

```
// declare Scanner (do not initialize)

try {

    // initialize that Scanner object

    // do something with the Scanner (reading or writing)

} catch(IOException e) {

    e.printStackTrace();

}

// if Scanner object isn't null, close it!
```

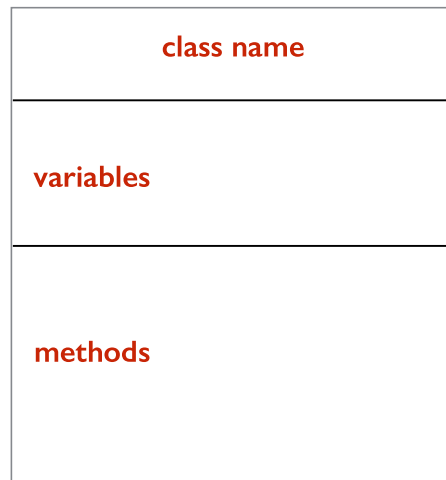
Activity: Payroll System

- A new data structure (**ArrayList**) improved our Company class earlier.
 - *But we still need to manually create employees..*
- Let's add all employees to a **file** instead...
 - *.csv files are “comma-separated” files, which can be opened as text or as a spreadsheet.*

UML

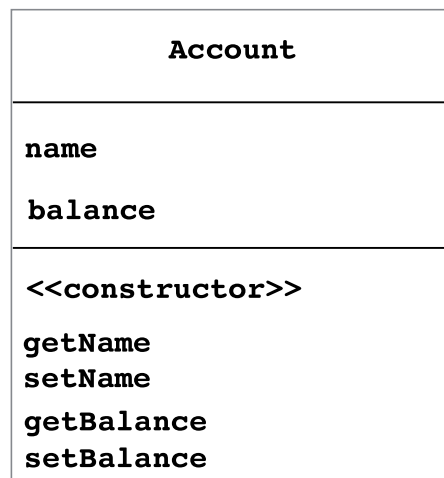
UML

- UML = United Modeling Language
 - Graphical models of object-oriented software.



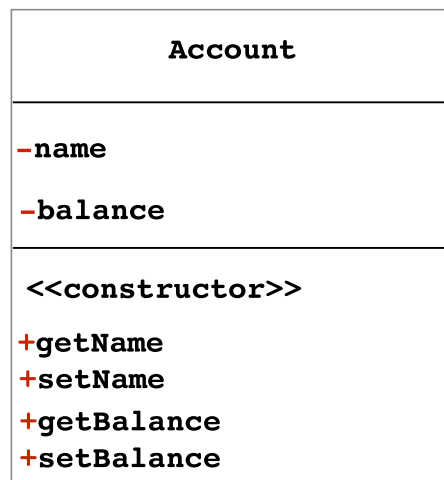
UML

- Let's look at the Account.java example from the previous class.
- This is a good start, but it needs more information to be useful..



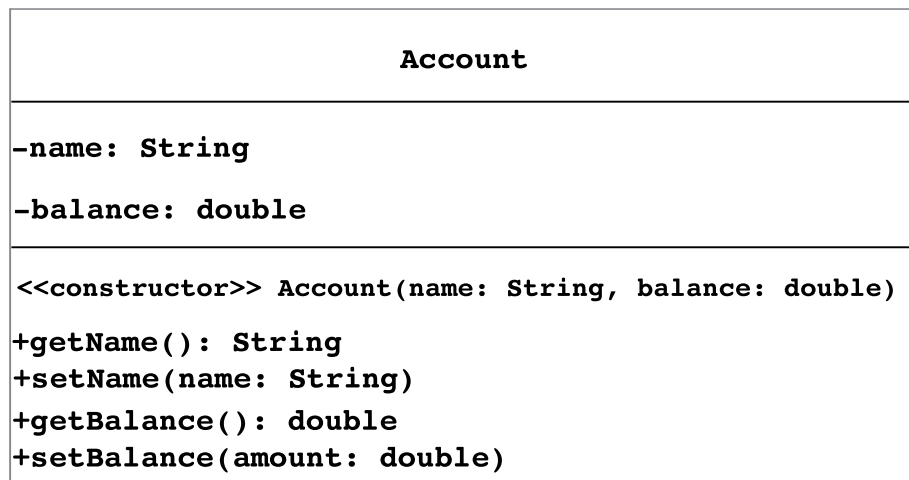
UML

- The **-** symbol indicates private, and **+** indicates public.



UML

- Since it is also important to know the **types** of variables and **parameters** of methods, we add more information..

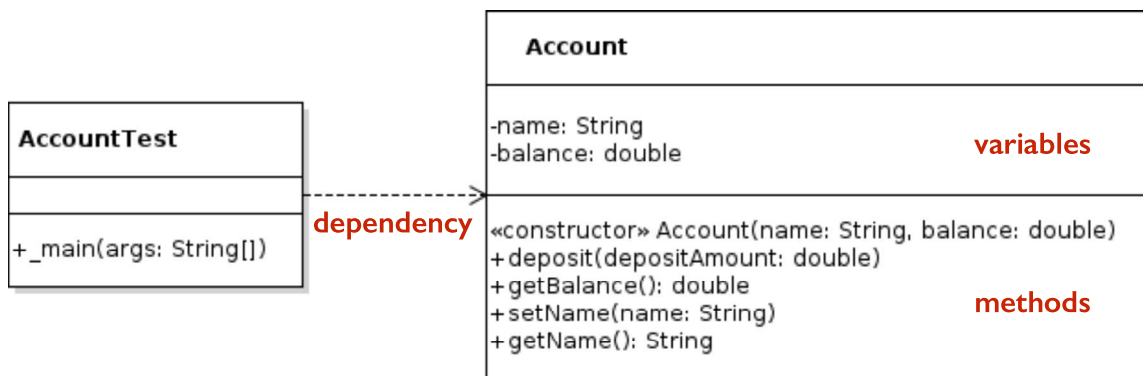


UML

- In this course, we'll use **Violet UML Editor**.
 - Download & directions for installation:
 - *On Blackboard > Content > this week!*
- It's free, cross-platform and easy to use!**
- Let's do a demo!

UML

- **Dependencies** between classes visually show the interaction between these classes.



DEPENDENCY RELATIONSHIP

ClassA> ClassB

- The dependency relationship is a generalized connection between two classes.
 - *Do not overuse! Check to see if other relationships are more meaningful.*
- ClassA **depends on** ClassB.
 - *This implies one or more of the following:*
 - At least one ClassB object is referenced in ClassA.
 - There is an import statement in ClassA for ClassB.
 - At least one class method in ClassB is called by ClassA.