Accessor, Mutator, and Static Methods

CSC 116 – Section 002

March 23, 2005

Accessor Methods

- Accessor Methods: “return the property of an object” [Wu]
  - Without altering the contents
  - Getter methods
- Serially reusable – multiple methods calls will return the same result
  - Since info is retrieved with no change to the object

Accessor Methods (2)

- Accessor methods return the property they are accessing as the return value
- Immutable (unchangeable) classes only have accessor methods
- Example:

```
public double getBalance() {
    return balance;
}
```


Mutator Methods

- Mutator Methods: “changes the property of an object” [Wu]
  - Setter methods
- Mutator methods are not serially reusable since they change the property of an object each time they are called.
- The set mutator method tends to take the new value as a parameter to the method

Mutator Methods (2)

- Example:

```
public void setBalance(double newBal) {
    balance = newBal;
}
```


Static Methods

- Class methods
  - Belong to the class not the object just like static variables
- Have no implicit parameter (no object)
- Use the form Class.method to call
  - Instead of object.method
- Cannot access non-static instance variables of the class
  - Can access class variables and constants
- Main method is a static method

Static Methods (2)

- Used to represent classes that it doesn't make since to have an object of
- Class is an abstract concept of a set of actions
- Example:
  - Library of general math functions like add(int x, int y), subtract(int x, int y)
  - You don't need multiple MathLibrary objects
  - It just makes more sense to reference the methods you need from the MathLibrary

Static Methods (3)

- We've already covered several static methods
  - Integer.parseInt()
  - Double.parseDouble()
  - Math.pow(double a , double b)
  - Math.sqrt(double a)

Static Methods (4)

- Example:

```
public class MathLibrary {
    public static int add(int x, int y) {
        return x + y;
    }
}
```

- You would call this method as MathLibrary.add(3,5);
- A specific object of MathLibrary is not referenced

References

- Jason Schwarz's Lecture 18 slides: http://courses.ncsu.edu/csc116/
- Wu – Chapter 4.5