Typical Methods in a Java Class Definition

CSC 120

What are the typical contents of a Java class definition?

- Properties (Data)
  - values that each object will store that describe something about the object

- Constructor method
  - used when asked to make a "new" object from this class

- Other methods
  - public void draw (Graphics g) -- this is only for visual objects

  - often, objects are used to represent data that are not visual or graphical; the methods for these classes provide access to the properties to retrieve them and change them

Example: a PetDog class definition

- Properties:
  - name -- a text String
  - age -- an Integer value (whole years only)
  - breed -- a text String
  - weight – an Integer value (whole pounds only)

- What might we want to do with a PetDog object?
  - we might want to ask the object for the current value of one of its properties

  - we could also ask the object to change one of its properties to a new value

  - we also might want to obtain a text String with all of the property values, formatted for easy readability

Typical methods we will have in almost all of our class definitions:

- "getter" methods
  - purpose is to retrieve, or get, the current value of one of the properties
  - method name will start with "get", followed by the name of the property

- "setter" methods
  - purpose is to set the current value of one of the properties to a new value
  - method name will start with "set", followed by the name of the property

- toString method
  - purpose is to form a text String from some or all of the properties of the object

The PetDog class definition (page 1 of 4)

```java
public class PetDog {

    private String name;
    private Integer age;
    private String breed;
    private Integer weight;

    // constructor method
    public PetDog(String n, Integer a, String b, Integer wt) {
        name = n;
        age = a;
        breed = b;
        weight = wt;
    } // end of constructor
```

The PetDog class definition (page 2 of 4)

```
// "getter" methods
public String getName() {
    return name;
}


public Integer getAge() {
    return age;
}


public String getBreed() {
    return breed;
}


public Integer getWeight() {
    return weight;
}
```

The PetDog class definition (page 3 of 4)

```
// "setter" methods
public void setName( String newName ) {
    name = newName;
}


public void setAge( Integer a ) {
    age = a;
}


public void setBreed( String b ) {
    breed = b;
}


public void setWeight( Integer wt ) {
    weight = wt;
}
```

The PetDog class definition (page 4 of 4)

```
    // toString method

    public String toString( ) {
        String answer;

        answer = name + " is a " + breed + " that weighs "
                    + weight + " lbs. and is " + age
                    + " years old.";

        return answer;
    }

} // end of class PetDog
```

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