

Static Variables and Methods

Class - Defines the data and behavior for a class of objects. A cookie cutter. A type. A form.

Object -- an instance of a class. A cookie. A variable.

Static -- data or method associated with a class, not an instance.

Static methods are generally used when you want to collect some functionality but there is no data associated with that functionality.

- Math functions, e.g., `Math.sqrt(x)`
- Character class functions
- `public static void main (String args[])`

Static data-- Data associated with a class, not each instance

In java, often use 'static' to define constants. Constants are values that never change. It is good programming practice to use a symbolic constant instead of referring to literal values in your program.

What literal values did you refer to in Mastermind?
What literal values did you refer to in ParkingLot?

The keyword 'final' is used along with static to define a constant:

```
static final int LOTSIZE = 20; // define a constant for parking lot size
```

Since the variable is a static (class) variable, you refer to it with:

ClassName.VarName e.g.,

ParkingLot.LOTSIZE

Instance methods -- a method associated with an instance (this is the norm):

```
car.move()  
person.older()  
student.getGPA()
```

Instance data -- Data associated with an instance.

name, age in Person

init, current, final in Car

Instructor Sample: create a class and define statics/instances.

In-Class Problems

1. Create a new project with a class Char. Write a static method 'isLetter' that accepts a char and returns a boolean.
2. Modify your intArray or ArrList class so that it uses a static constant 'BLOCKSIZE' instead of 10 to create the initial array.