import java.util.Scanner;
public class Factorial {
    public static int factorial(int n) {
        int result = 1;
        while( n-- > 0 ) {
            result *= n;
        }
        return result;
    }
    public static void main( String []args) {
        Scanner scnr = new Scanner( System.in);
        System.out.print("Find factorial of what number? ");
        int num = scnr.nextInt();
        int factorial = factorial( num);                     
        System.out.println("The factorial of " + num + " is " + factorial);
        scnr.close();
    }
}
Office Hours this Week

Tuesday:  9am to noon,  3pm to 5pm

Wednesday: none (dept mtg)

Thursday: 1pm to 4pm
Getting Started on P2

Where to start?
Classes and Objects

class, instance, object

constructor, no-arg, default

field, attribute, instance variable

toString() instance method, overriding

this, super

printing object
Craig Larman: Applying UML and Patterns
Classes and Objects

public, private, protected, <package>

accessors (getters), mutators (setters)

state of an object

attributes

ArrayList

multiple argument constructors, initializing

equals
Please form groups of 2 or 3

Creating classes and instances today
Create a Person class

1. Provide a name attribute.
2. All attributes in all classes should be private.
3. Provide a constructor that sets the name attribute.
4. Provide an accessor for the name.
5. Provide a toString() method that returns the name attribute.
Create a Car class

1. Include attributes: year, make, model, color, mileage. Write a constructor to initialize.
2. The attributes should be set when a car is created (instantiated).
3. Provide methods to access all attributes.
4. Provide a method to change color.
5. Provide a method that only increases mileage.
Test class

1. In the main method of a Test class, write the code to create 3 instances of Person with different names.

2. Print out the names by passing the instance references to the System.out.println method.
Passenger List

1. Add a passenger list attribute to Car.
2. Provide a method to add a passenger at a time to the car.
3. Provide a method to remove a passenger by name.
Modify Test Class

1. Create an instance of a Car.
2. Add 4 passengers to the car.
3. Show which passengers are in the car.
4. Remove one of the passengers from the car, by name.