ICS 141 Programming with Objects

Jessica Maistrovich

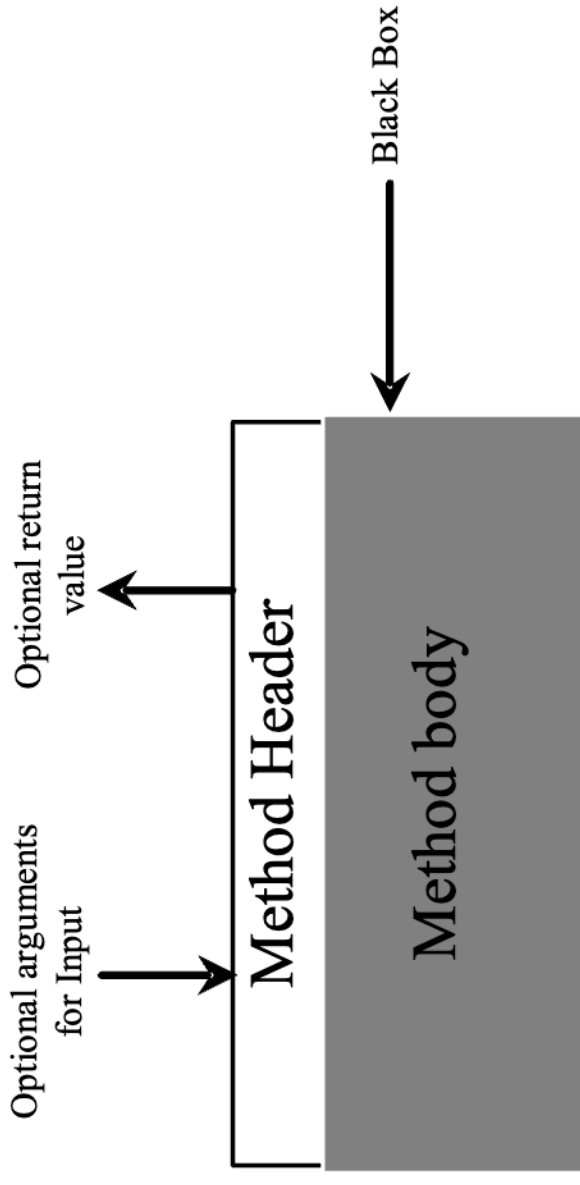Metropolitan State University

Method Abstraction

What can the object do?

What is a Method?

- Method = Function = Procedure

- A method is an agent you hire to do a job for you:
  - You give the agent some information (inputs)
  - Agent goes somewhere, does whatever calculations he needs
  - Agent comes back to you with the result (output)

- Notes:
  - We don't know (and we don't care about) what calculations are done by the agent
  - We are only interested in:
    - Information that is initially given to the agent (inputs)
    - Result that the agent will give back to us (output)

Method Abstraction

You can think of a method as a black box that contains the detailed implementation for a specific task.

Optional arguments for Input →

Optional return value ←

Black Box →

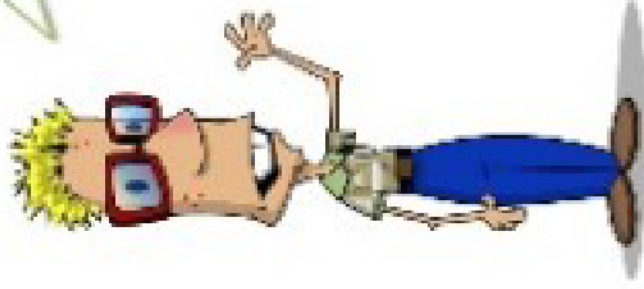Method Header

Method body

Real Life Example

I really want to buy christmas gifts for my children. The doll costs 5 euros and the toy car costs 6 euros. I have 12 euros, is that enough? Why didn't I listen to the math teacher at school? Why didn't I learn sum – calculations? Why oh why?
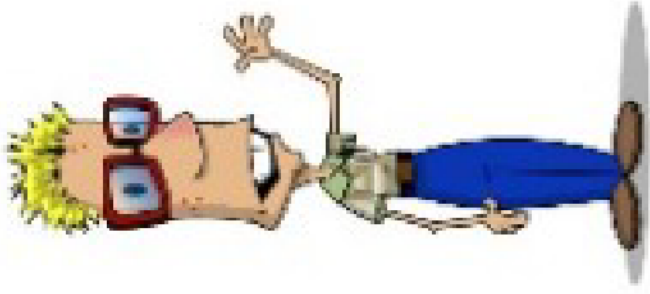
Real Life Example

Hello Hello! My name is Mr. Sum and I can sum everything! Please use my knowledge!
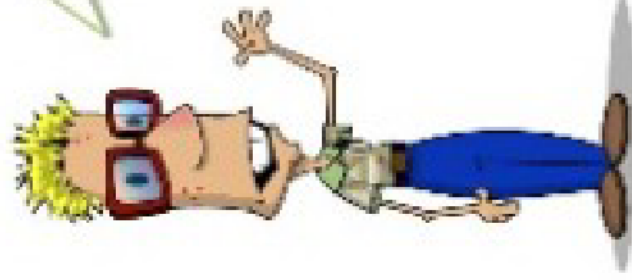
Real Life Example

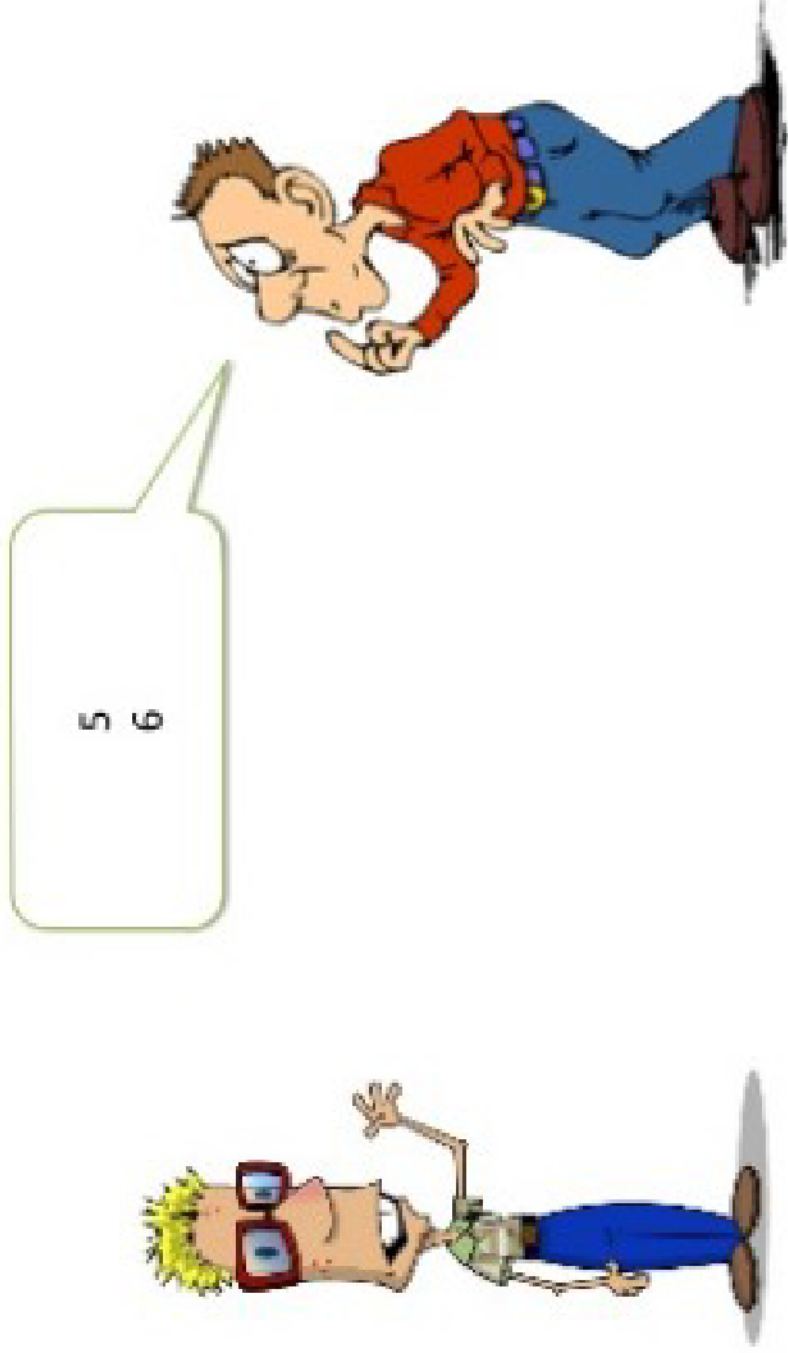Well Mr Sum. I have a problem I don't know what is 5 plus 6.

Real Life Example

Don't understand your problem. I only do simple calculations, I really need to have two integer values to be able to do the sum. Please just give my two numbers!
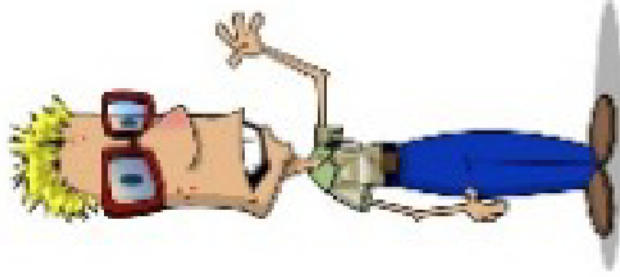
Parameters!

5
6

Return!

11

Real Life Example

Well thanks, at least I know my numbers and 11 is less than 12, so great! My children will be very happy!

Mr. Sum?

parameter

5

6

Mr. Sum

return

11

Method Syntax

How do you write a method in Java?

Method Headers

_____ _____ (parameters) {

modifier(s)   return type   name

}

public Cookie * makeCookies(Ingredient ingredient1, Ingredient ingredient2){

    ....do work to make a cookie...........

    return cookie;

}

*If there is no return value the return type is void

public
_____
privacy

Cookie
_____
return type

makeCookies
_____
name

(ingredient1 , ingredient2)
_____ _____
parameters

return