Today

• Binary scanner
• Method-level and inline documentation
• Exam preparation
• Method/loop examples
Brief Questions
Binary Scanner: Characters and Typewriters

On typewriters, the *carriage* moved the paper so that the correct spot was under the “hammer”

- **Carriage return**: move the paper all the way to the right (so that the next glyph is placed on the leftmost point of the paper)
- **New line**: move the paper up one line

These are independent!
Binary Scanner: Characters and Typewriters

In modern computers, we maintain these independent concepts

- Carriage return: '\r'
- New line: '\n'

But: this level of detail can be hidden from us
Binary Scanner: Characters and Typewriters

Depending on a variety of factors, hitting the ENTER key can result in Java seeing different things:

- \n
  - This is my case & the case we designed our code for

- \r\n
  - Some of you are experiencing this
  - Solution: terminate on \r (or on either)
Documentation example: checkForwardMotion()
Exam

• Details on D2L news page
• Open book, open notes
• Closed electronic device
• Assigned seating
• Have your university ID handy
• Multiple choice (with bubble sheet) + coding
• Bring pencil or pen
Methods

Key programming tool:

- Cut code into manageable chunks
  - Easier to read, test, debug and maintain
- Enable re-use of code
  - Only have to implement once & then can use it many times
- First step in abstraction:
  - We can use a method without knowing the details of how it is implemented!
Method Example II

Problem: design a method that takes as input a score between 0 and 100 and returns a letter grade

• What are the parameters (the inputs?)
• What is returned?
Problem: design a method that indicate whether a number is odd or even

- What are the parameters (the inputs?)
- What is returned?
Method Example IV

Write a method that computes the return on an investment:

- **Inputs:**
  - An amount as a starting investment
  - An annual return rate
  - Compounding monthly
  - A number of months

- **Output:**
  - The total account balance
Wrap Up

Coming up:
- Exam 1: Sept 15
- Project 1: Due Monday, Sept 22nd

Next times:
- Exam
- Objects

Next week: I will not have office hours