

# 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?

# Method Example III

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