Peer Response Weekly Writing Assignment

- Today: Please re-upload the emails you wrote for last week to the new “Workshop” link on this week in Moodle.

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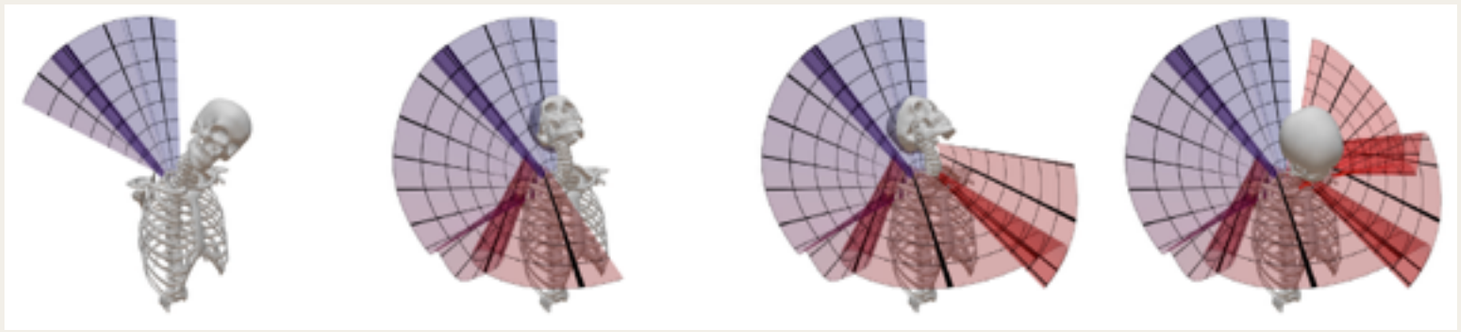
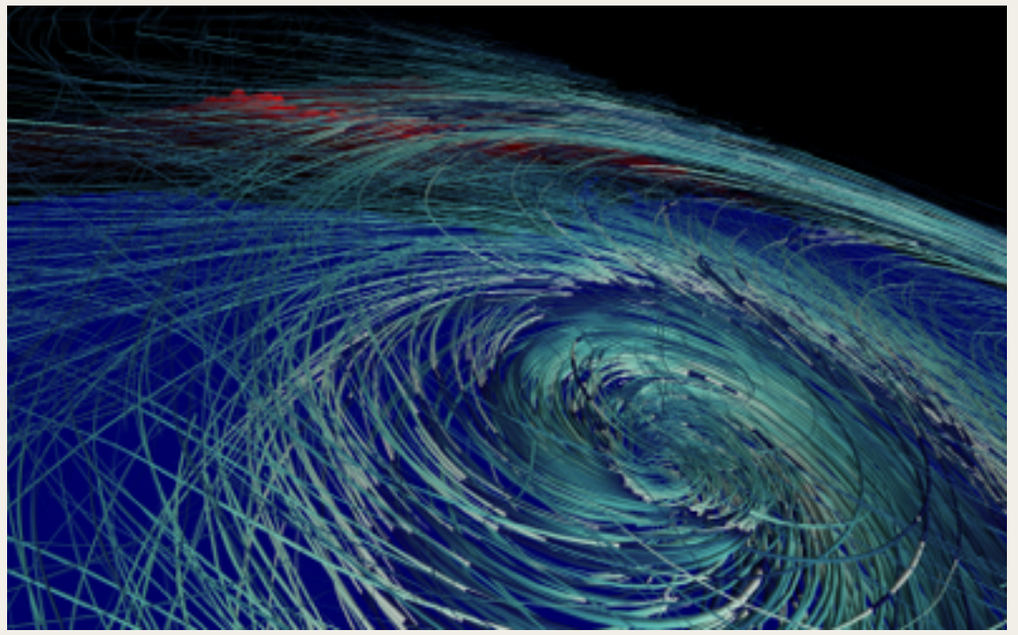
Project F.A.Q.

- PNG images with transparency (alpha != 1.0).
  - alpha = 1 — completely opaque
  - alpha = 0 — completely transparent (ignore R,G,B)
  - alpha = 0.5 — semi-transparent
  - stamp tool: take alpha into account, and modify the blending math you use to apply the stamp to the canvas using alpha. alpha in the PixelBuffer can always = 1.
  - loading a png with alpha: do whatever you think makes the most sense… you could blend the loaded image with the default background color for PixelBuffer…
- Moving between lab machines and the need to clean and rebuild (even the image libraries).
  - The image libraries use the popular “configure” script utility to build themselves and to **completely** clean even all the configuration data for these libraries you need to run the command “make distclean”.
- For the PNG library there is example code inside the library in the examples/ folder.
- Note: Image R,G,B,A values are 0-255. PixelBuffer is 0.0-1.0. So make sure you convert.

Research Opportunity





- National Science Foundation - Research Experiences for Undergraduates Program
- Topic: Visualizing scientific “motion” data (e.g., biomechanics)
- Paid summer research experience in my lab
- Must be a US citizen (requirement of the funding)
- Must be an active undergraduate student
- Must be doing well in this course
- Women and other minorities in CS especially encouraged to apply

Design Patterns Continued…
The Adapter and Facade Patterns

CSCI-3081: Program Design and Development

(Slides adapted from Head First Design Patterns)

At this point you have some experience working with external libraries of C++ code…

- **Major Pros:** You don't have to rewrite the functionality you are after. Also if many people are using the library then it has probably been more thoroughly used/tested than what you could accomplish on your own in a short period of time.
- **Major Cons:** The library may not perfectly fit into your code. It may contain more functionality than you need or really complicate your code base.

To get around this, we adapt.

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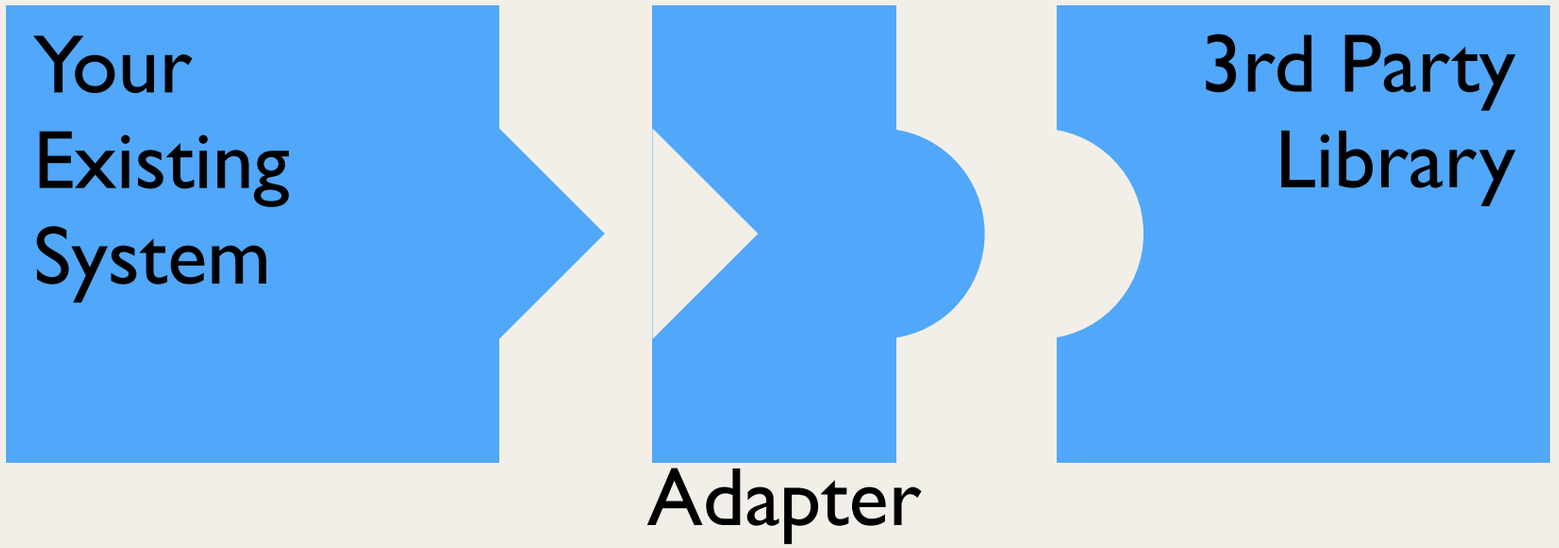
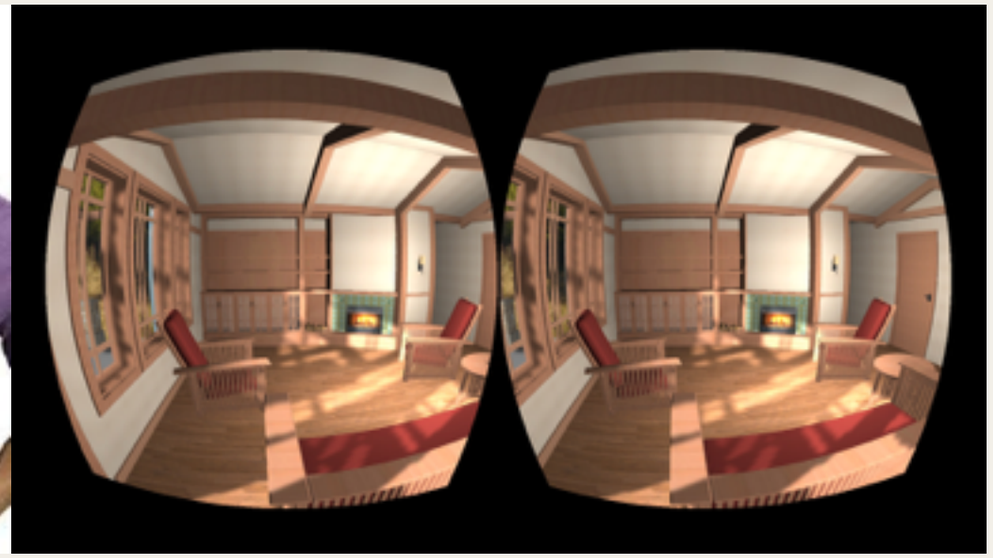
Object-Oriented Adapters

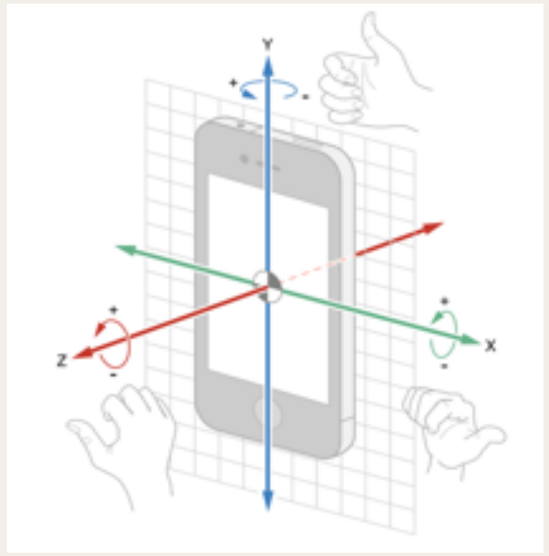


- You write new code for the Adapter.
- But, there should be no code changes for Your Existing System and no code changes for the 3rd Party Library.

Real World Example

Adapter to make the smart phone data "look like" the type of camera specification that our code is used to seeing.



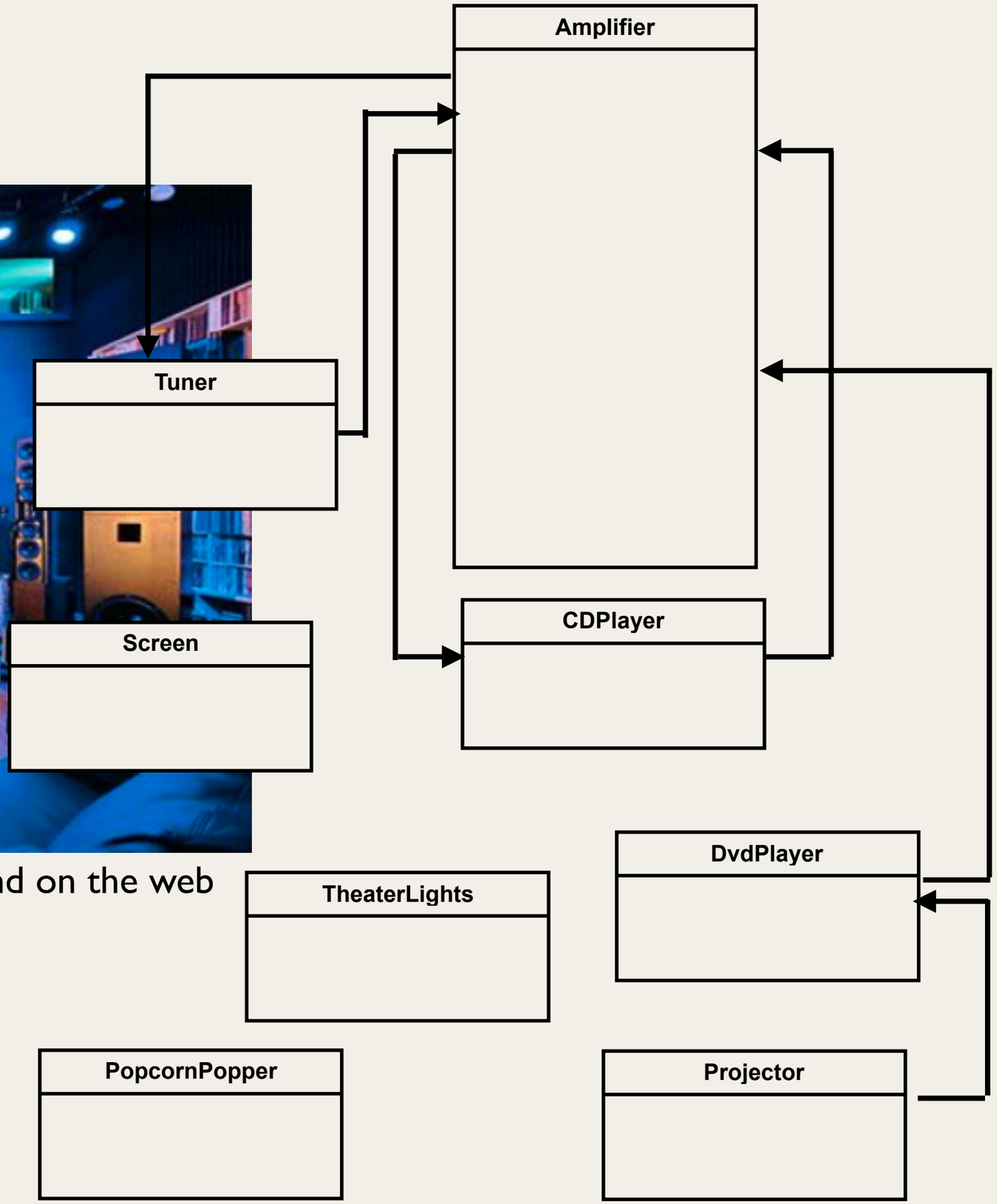


Our existing 3D Game Engine expects the "camera" to be specified in a left-handed coordinate system with view along the +Z axis.

The smart phone reports gyroscope data in a right-handed coordinate system and we look into the screen along the -Z axis.

Remote Controls

The most impressive home theater I could find on the web

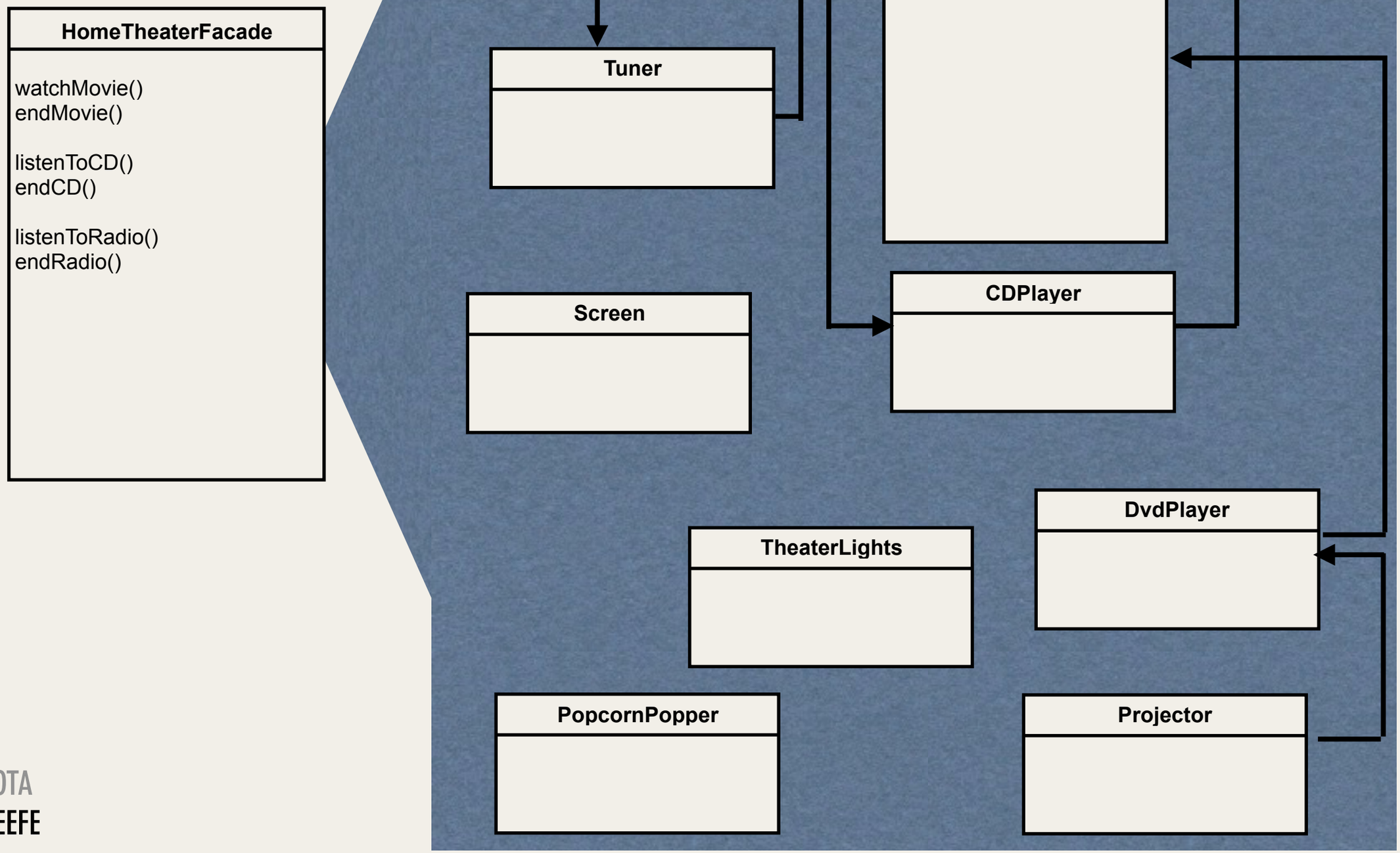


Watching a Movie

- Turn on popcorn popper
- Start the popper popping
- Dim the lights
- Put the screen down
- Turn the projector on
- Set the projector input to DVD
- Put the projector on wide-screen mode
- Turn the sound amplifier on
- Set the amplifier to DVD input
- Set the amplifier to surround sound
- Set the amplifier volume to medium (5)
- Turn the DVD player on
- Start the DVD player playing

- When the movie is over, turn it all off :)

Create a Facade



Adapter and Facade Patterns

- Related in that they help you to overcome the complexity of working with external libraries, complex systems, legacy code, etc.
- These are quite common due to the importance, frequency of working with external libraries in big projects.