



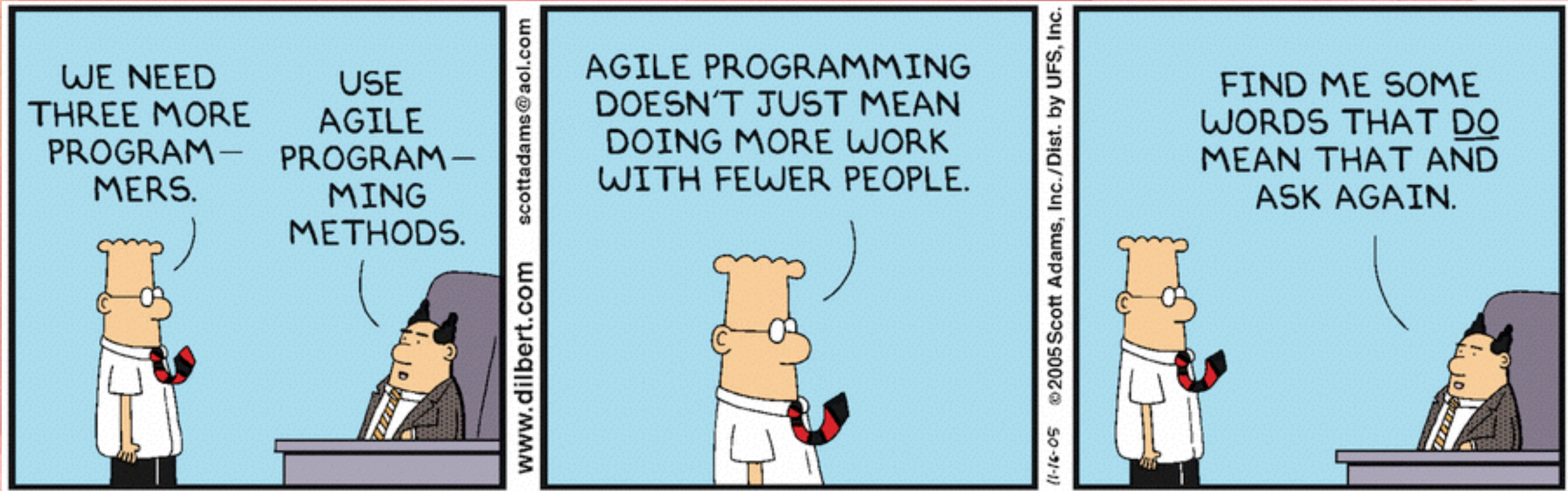
AGILE & MVC

Code 301

AGENDA

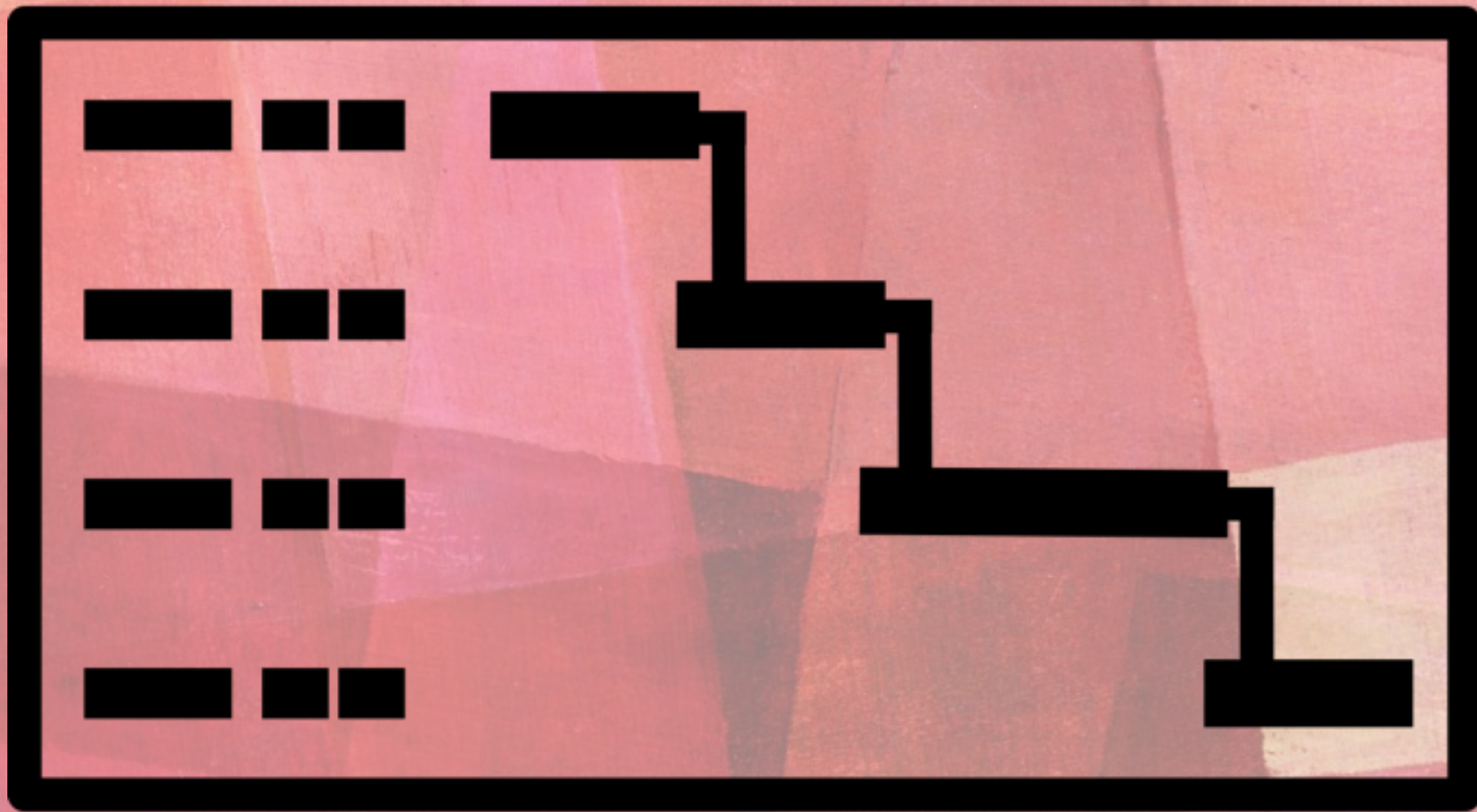
- Agile Web Development
- The Model-View-Controller Pattern
- The DOM
- jQuery

AGILE WEB DEVELOPMENT



AGILE WEB DEVELOPMENT

What is it?



WATERFALL PROCESS

The “Dark Ages” of software development

A LIGHT IN THE DARKNESS

- While corporations plodded along with Waterfall...
- New “lightweight” methodologies were explored:
 - Extreme Programming
 - SCRUM
 - DSDM
 - Adaptive Software Development
 - Crystal
 - Feature-Driven Development
 - Pragmatic Programming,

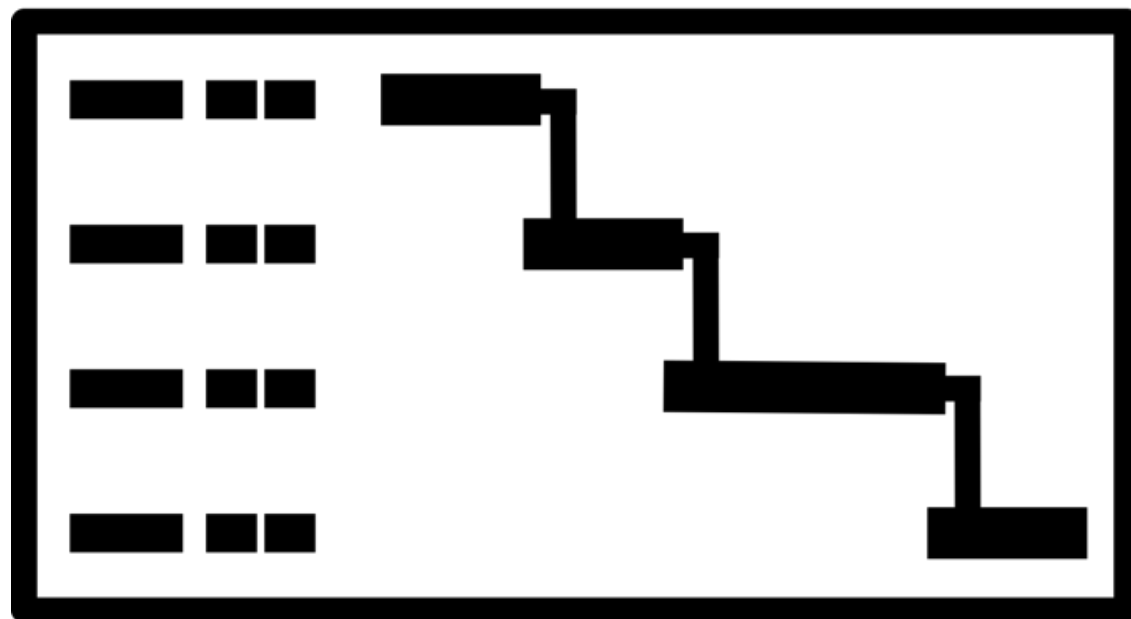


We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

- . **Individuals and interactions** over processes and tools
- . **Working software** over comprehensive documentation
- . **Customer collaboration** over contract negotiation
- . **Responding to change** over following a plan

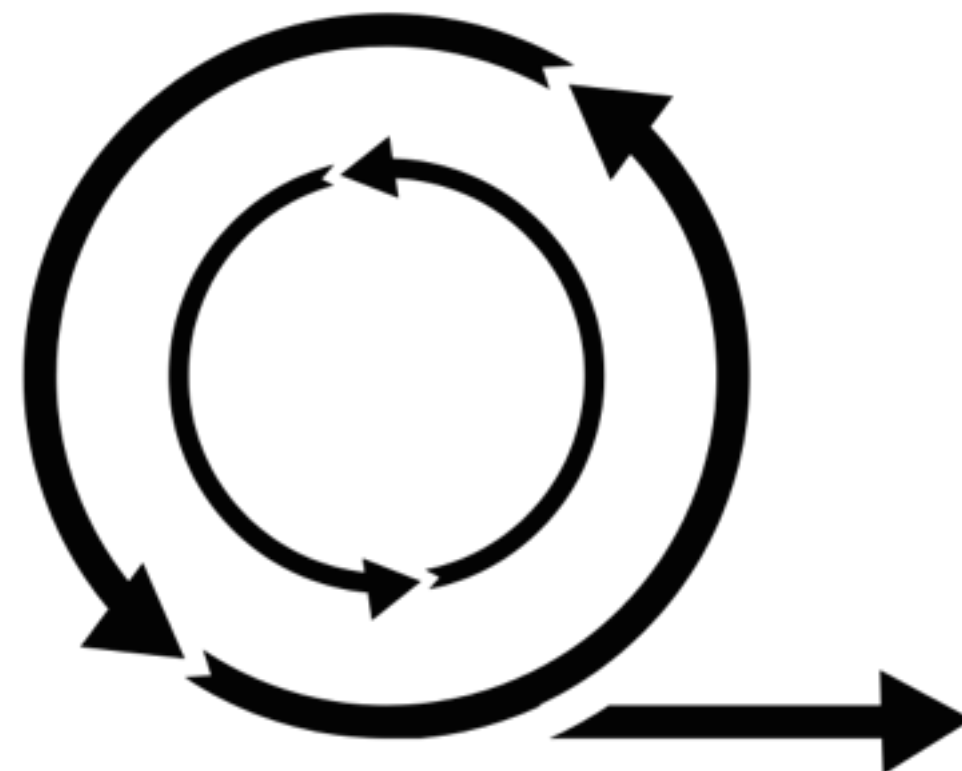
That is, while there is value in the items on the right, we value the **items on the left** more.

— *agilemanifesto.org*



WATERFALL PROCESS

VS



AGILE DEVELOPMENT

AGILE WEB DEVELOPMENT

- Most of what you see and touch of the modern web is produced with some flavor of Agile methodologies
- Our flavor will include:
 - Pair Programming
 - Standup Meetings
 - User Stories grouped into daily Sprints
 - Investigation efforts (“Spikes” in Scrum)
- More Agile terminology, explained visually:
 - <https://www.youtube.com/watch?v=OJflDE6OaSc>
 - <https://www.youtube.com/watch?v=XU0l1RltyFM>

AGILE WEB DEVELOPMENT: PAIR PROGRAMMING

- Pair Programming:
 - Driver:
 - hands on the keyboard
 - makes commits to the repo
 - Navigator:
 - verbalizes process
 - researches questions
 - guides driver in where to go
- Switch off!

AGILE WEB DEVELOPMENT: STANDUP

- In a Standup Meeting, each person answers 3 questions:
 - What did you do **Yesterday**?
 - What is your plan for **Today**?
 - What's **Blocking** you?
(Do *not* solve problems during the standup, just state where you are stuck).
. Resource re-allocation to address blockers: Do it on-the-spot quickly, else mark as offline task.

AGILE WEB DEVELOPMENT: STANDUP

➤ Examples:

➤ Yesterday, I added a resume upload feature. Today, I plan to add a quick-preview feature. I'm blocked until the PDF parsing engine is complete.

➤ Y: I setup a basic blog index page.

T: I'll add some "click" and hover event handling.

B: No swipe API; need it to handle swipe events on mobile.

➤ Mnemonic: "Y.T.B = You're The Best!". Or —>



AGILE WEB DEVELOPMENT: USER STORIES

- All User Stories must follow a template:
 - As a _____ [who]
 - I want _____ [what]
 - so that _____ [why]

AGILE WEB DEVELOPMENT: USER STORIES

.....



AGILE WEB DEVELOPMENT: USER STORIES

- A good User Story is:
 - Independent
 - Estimable
 - Small (1-2 hours is our guide)
- User Stories solve real problems:
 - “What do I work on next?”
 - “How do I get started?”
 - “How do I know when this feature is done?”

AGILE WEB DEVELOPMENT: USER STORIES

- Examples:
 - As a customer, I want the restaurant address displayed prominently on the home page, so that I can quickly find it if I look it up on my phone while parked during my commute.
 - As a Teller, I want to look up clients by last name, so that I can find them in the system faster.
 - As a player, I want to toggle help/instructions during play, so that _____.
 - As a hiring manager, I want to give resumes 1-3 stars, so that _____.

AGILE WEB DEVELOPMENT: USER STORIES

- Your user stories for today's coding assignment:
 - As a developer, I want my site to use valid and semantic markup, so that employers will love me.
 - As a reader, I want the blog to show most recent articles on top so that I can easily read the latest.
 - As a reader, I want relative timestamps to give me a idea of how many days ago something was written.
 - As an author, I want my name linked to my social feed, so that readers can follow me, and I can build my audience.
 - As a reader, I want the site to look reasonable, so that I can read it on any device.

AGILE WEB DEVELOPMENT: SUMMARY

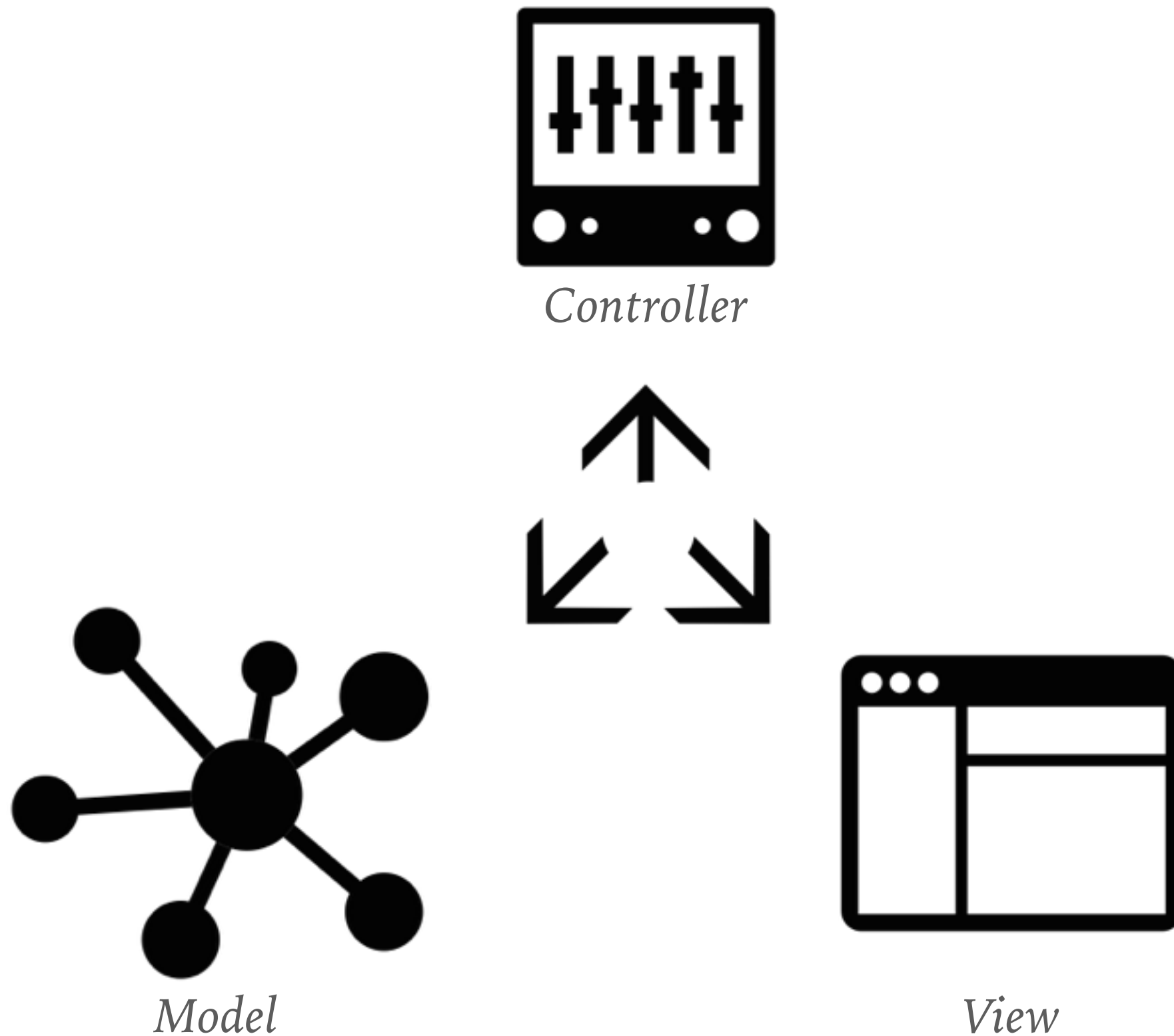
- We'll leverage a few key pieces of Agile in Code 301:
 - User Stories
 - Pair/team coding
 - Standup meetings

AGILE WEB DEVELOPMENT: RESOURCES

- Check out these videos:
 - <https://www.youtube.com/watch?v=OJflDE6OaSc>
 - <https://www.youtube.com/watch?v=XU0lRltyFM>
- Read more how the movement started:
 - <http://agilemanifesto.org/>

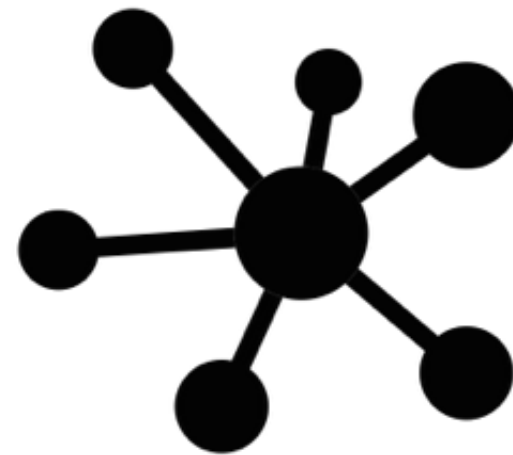
MVC

MVC FLOW



MVC

- “Design pattern” for organizing your code
- **Model**: Source material or data
- **View**: Presentation scheme
- **Controller***: Behavior management



Model



Controller



View

- * the pattern has other incarnations: MVP, MVVM, MVT, etc...

MVC

- MVC is everywhere
- The modern web follows an MVC-like pattern:
 - Model: Source material or data
 - HTML
 - View: Presentation scheme
 - CSS
 - Controller: Behavior management
 - JavaScript

MVC

- MVC is everywhere
- At the theater:
 - Model: Source material or data
 - Characters
 - Story: ideas, relationships, objects, properties, ordering, etc.
 - View: Presentation scheme
 - Venue
 - Rehearsed dramatic retelling of the story
 - Controller: Behavior management
 - Ticket booth, ushers, post-play Q&A

MVC














- MVC is everywhere
- What examples can you think of?

MVC

- Benefits
 - Code at a higher level of abstraction
 - Organize your code base (What code is in each file? Folders contain files of similar function, etc.)
 - Leverage best practices
- Challenges
 - Learning curve
 - Inter-file spaghetti code
 - Hard to extend when the metaphor fails

MVC: FRONT-END FRAMEWORKS

Comparing features

	UI Binding 	Reusable Components 	Routing 
Ember.js			
Angular.js			
Backbone.js			
React			

MVC DEMO

Basic web page code structure

MVC

- Follow web page MVC patterns to get started
- Create a standard file structure for your files
- We'll dig deeper into the View this week, starting right now, with jQuery

RECAP

RECAP

- Agile
 - Power of fast iteration makes better software
 - Vocab words:
 - Standup, User Stories, Backlog, Sprint
- MVC
 - Structure your code for fun and profit
 - Follow best practices for greater interoperability
 - Every MVC is a little different

RESOURCES AND ATTRIBUTIONS

- Vectors from Noun Project:
 - <https://thenounproject.com/search/?q=agile&i=204943>
 - <https://thenounproject.com/search/?q=gantt&i=6299>
- <http://dilbert.com/strip/2005-11-16>
- <http://dilbert.com/strip/2003-01-10>
- <http://www.developereconomics.com/feature-comparison-of-4-popular-js-mv-frameworks/>