



# AGILE & MVC

*Code 301*

# AGENDA

---

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

# AGILE WEB DEVELOPMENT

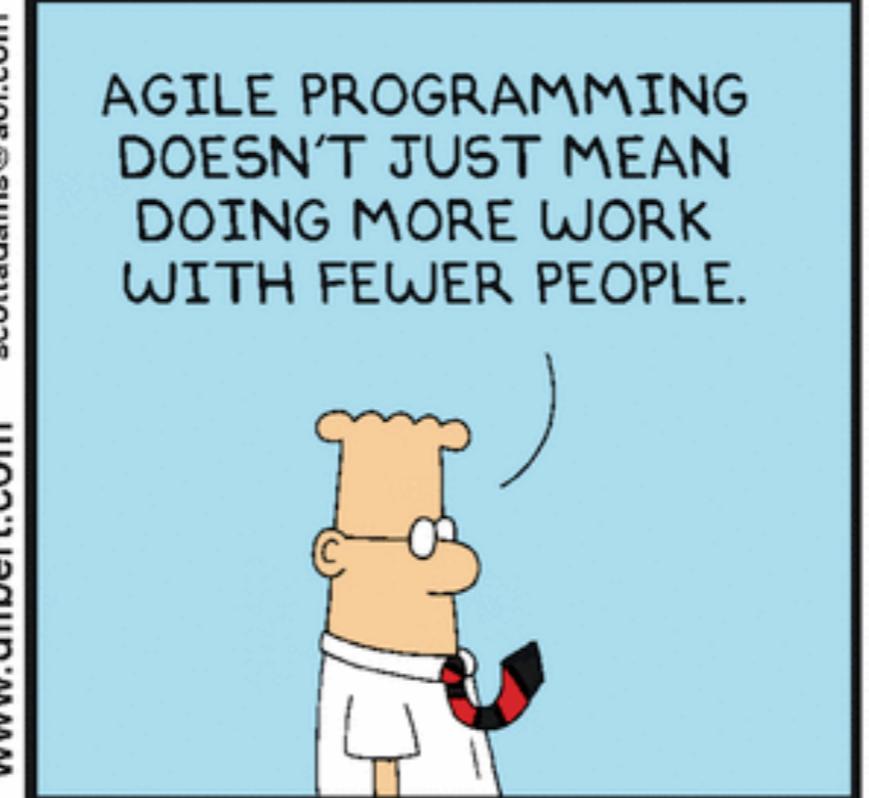
WE NEED  
THREE MORE  
PROGRAM-  
MERS.

USE  
AGILE  
PROGRAM-  
MING  
METHODS.



[www.dilbert.com](http://www.dilbert.com) scottadams@aol.com

AGILE PROGRAMMING  
DOESN'T JUST MEAN  
DOING MORE WORK  
WITH FEWER PEOPLE.



11-16-05 © 2005 Scott Adams, Inc./Dist. by UFS, Inc.

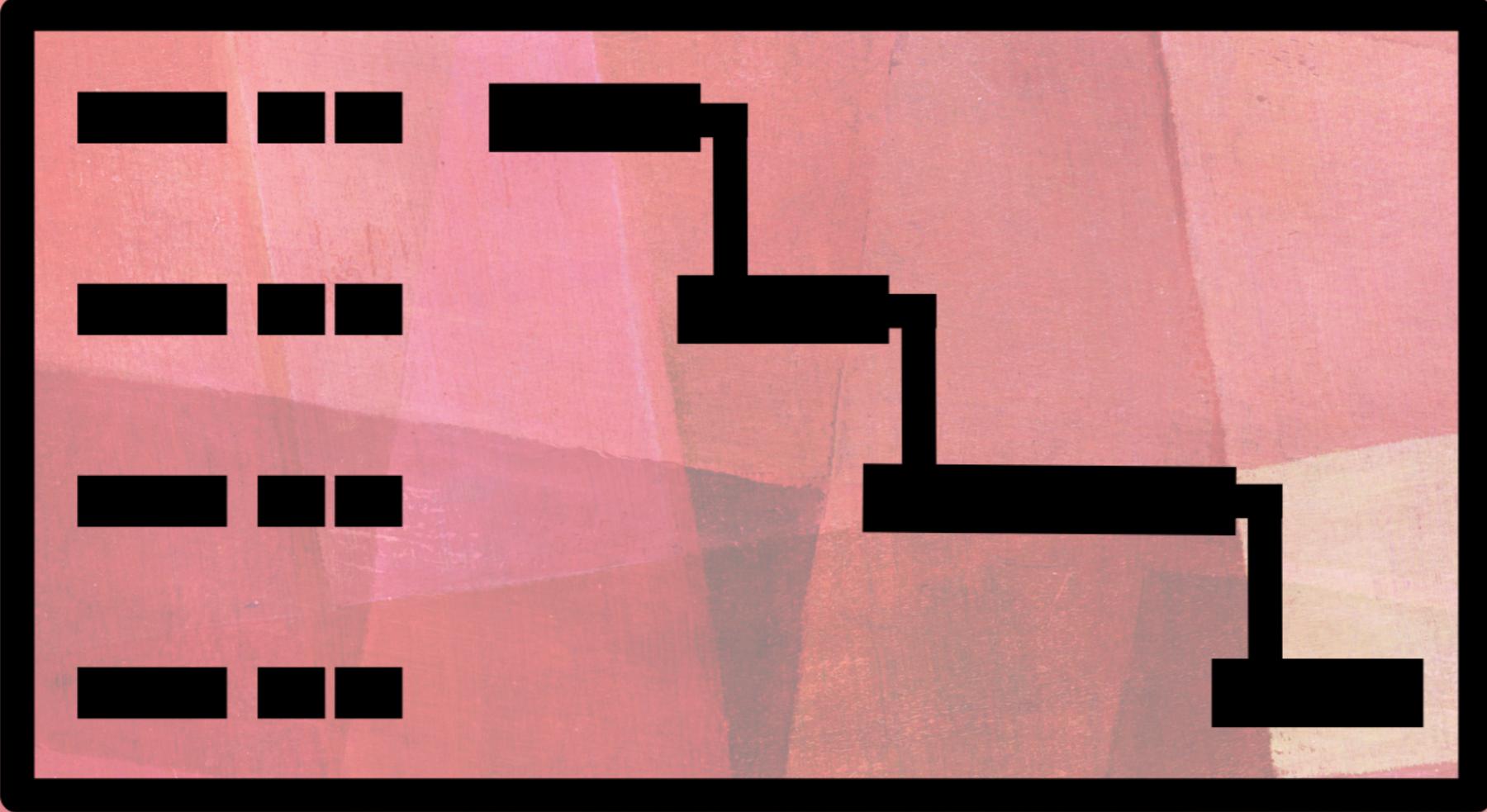
FIND ME SOME  
WORDS THAT DO  
MEAN THAT AND  
ASK AGAIN.



# 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,

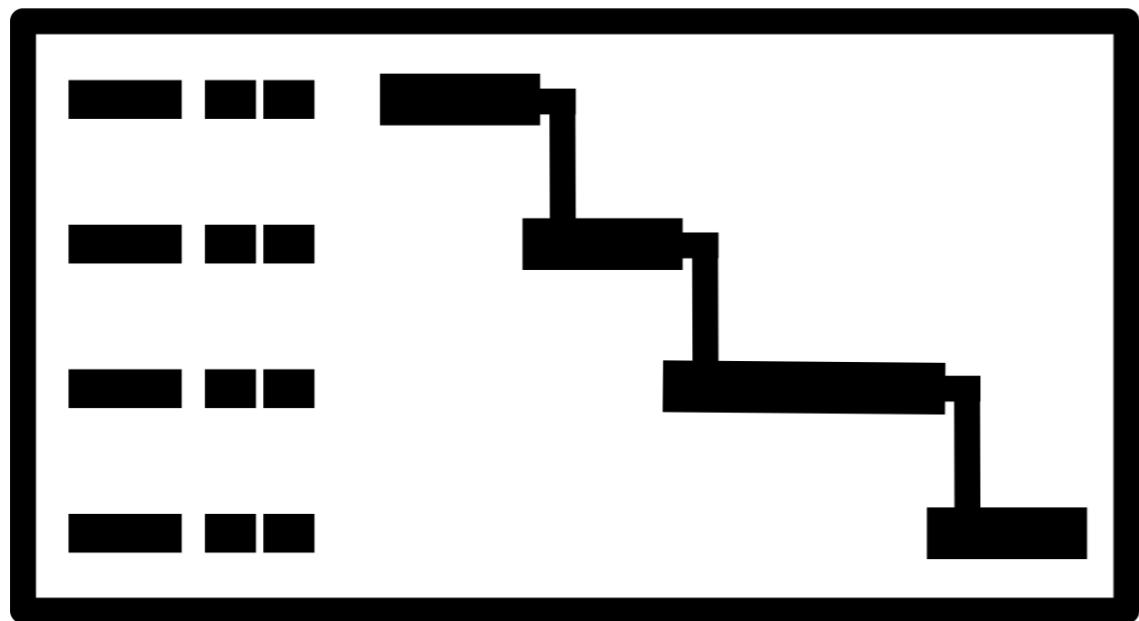
“

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

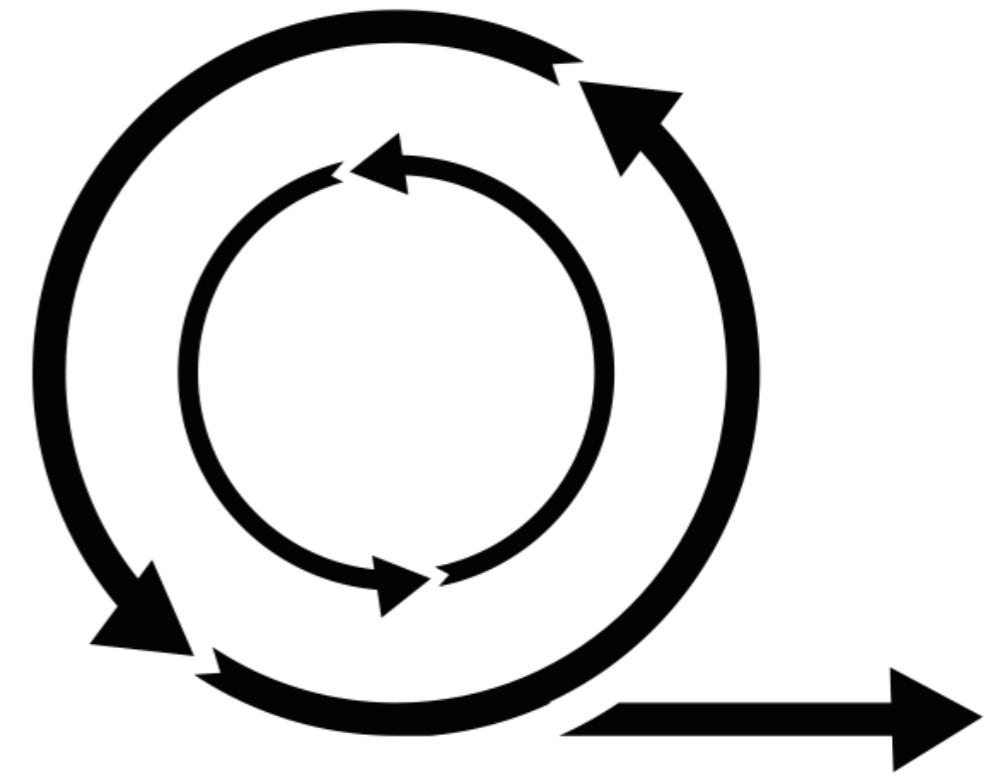
That is, while there is value in the items on the right, we value the items on the left more.

— *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
- More Agile terminology, explained visually:
  - <https://www.youtube.com/watch?v=OJflDE6OaSc>
  - <https://www.youtube.com/watch?v=XU0llRltyFM>

# 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?  
(Don't solve problems, just state where you are stuck)

# 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.
  - Yesterday, I setup a basic blog index page. Today, I'll add some event handling. No blockers.
  - Y: I modified the search feature to sort by last name.  
T: I'll include phone number in the display.  
B: I'm unsure how to handle accounts with no phone number.

# 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 driving.
  - 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:
  - 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:
  - Pairing
  - Standup Meetings
  - User Stories

# AGILE WEB DEVELOPMENT: RESOURCES

---

- Check out these videos:
  - <https://www.youtube.com/watch?v=OJflDE6OaSc>
  - <https://www.youtube.com/watch?v=XU0llRltyFM>
- Read more how the movement started:
  - <http://agilemanifesto.org/>

# MVC

# MVC

---

- “Design pattern” for organizing your code
  - **Model:** Source material or data
  - **View:** Presentation scheme
  - **Controller\***: Behavior management
- 
- \* 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
    - Actresses and actors
    - The story
  - View: Presentation scheme
    - 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
  - Leverage best practices
- Challenges
  - Learning curve
  - Inter-file spaghetti code
  - Hard to extend when the metaphor fails

# MVC: FRONT-END FRAMEWORKS

---

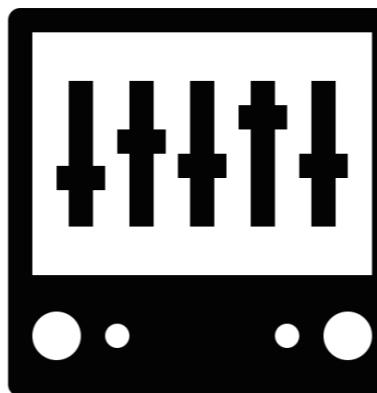
## Comparing features

---

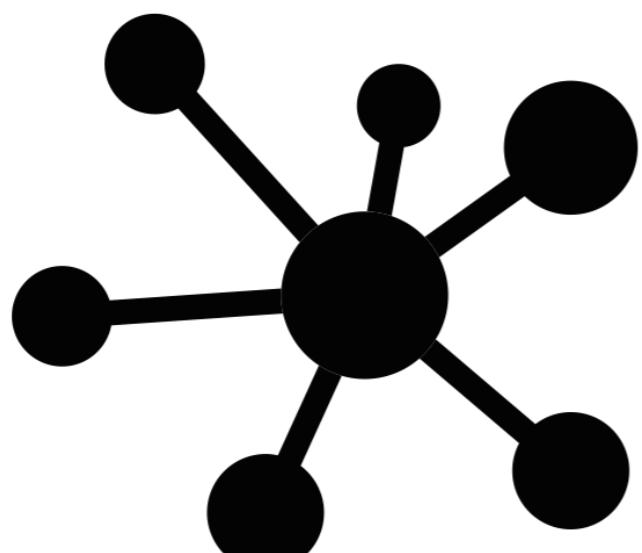
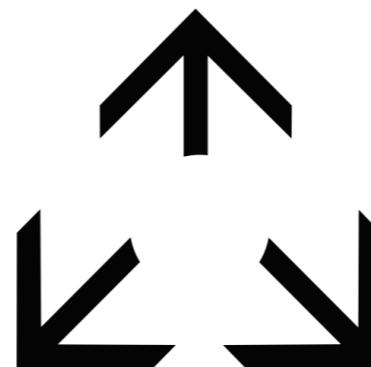
	UI Binding	Reusable Components	Routing
Ember.js	●	●	●
Angular.js	●	●	●
Backbone.js		●	●
React	●	●	

# MVC FLOW

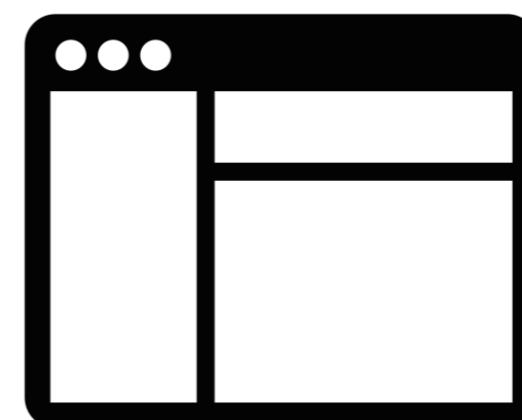
---



*Controller*



*Model*



*View*

# 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/>