

TECH TALK TOPICS

CIS 440

CRITICAL TOPICS – THESE TALKS ARE PROBABLY RELEVANT TO ALMOST EVERY TEAM

Category: (Web) App Frameworks

Modern web development is moving away from the use of PHP/ASP/JSP code embedded in HTML files, and toward the use of MVC frameworks (and variations on that theme) that separate the front-end from the data and the business logic. There are frameworks for every programming language, but any of them could be used to introduce the concepts to your classmates.

Choose any of these or pick another:

Ruby on Rails	Django
ASP.NET MVC	Flask
Angular.js	Ember.js
CakePHP	Grails
Phalcon PHP	Node.js
Java Spring	(many others!)

Category: Front-End

Whether you are building a web site or mobile app, there are a huge range of technologies out there to make your lives easier. HTML5 has some new features that allow you to do more in the browser. Numerous Javascript libraries exist to build dynamic front-ends without having to write all the code yourself. Various “front-end frameworks” enable you to build stylish web sites and CSS that works on a variety of formats (e.g. one page that works for mobile, tablet, and PC browsers).

Choose any of these or pick another:

Bootstrap	Wordpress (in depth)
{less}, Sass, or stylus	HTML5 (in depth)
jQuery	CSS (in depth)
CoffeeScript	Dreamweaver, etc.
Haml	D3.js

Category: Data/Backend

I am interested here in discovering some of the back-end technologies that underpin your applications. You may want to introduce a particular database you’ve found useful, perhaps in the non-relational or NoSQL domain, or you may wish to talk about the technologies you use to connect to data, such as object-relational mapping (ORM) tools. Alternatively this could be a talk about other back-end technologies such as cloud computing services. Pick topics that are applicable to your projects.

Choose any of these or pick another:

MongoDB	Heroku
CouchDB	Node.js
Neo4J	SQLAlchemy
Redis	Amazon Web Services
PostgreSQL	Windows Azure
Firebase	Rackspace Cloud

Category: Testing

Testing is an important part of software development, and one that is rarely taught. A variety of tools exist for developing and running tests, and for automating them. It might also be interesting to talk about how you can set up automated regression testing to trigger when new features are integrated into your code repository. Related topics could include debugging and automated code analysis.

Choose any of these or pick another:

unit testing (in general)	Cucumber/Gherkin
jUnit, PyUnit, etc.	Fiddler
database testing	Selenium
Visual Studio	

OPTIONAL TOPICS – THESE TALKS MAY BE OF INTEREST TO SOME TEAMS

Category: Architecture and Design Patterns

Software architecture is defined as “the set of structures needed to reason about the software system,” including “the software elements, the relations between them, and the properties of both” (Wikipedia). For those who are interested in taking a higher-level view, and in helping their teams stitch the various parts of a solution together, there are a number of interesting things that could be explored, particularly relating to APIs and to deployment on the cloud.

Choose any of these or pick another:

REST APIs
Web Services
SOAP/XML

UML
Cloud architecture patterns
AJAX/Asynchronicity
Design patterns

Category: Mobile Applications

Most of your projects will have to consider mobile and tablet platforms. Even if you are developing web sites primarily for desktop computer users, you need to know enough about mobile web design that the sites won't break on mobile phones. Going further, you may consider building special functionality for mobile users that takes advantage of touch interfaces, GPS or other affordances of the technology. Some of you may even decide to develop native apps for one or more platforms. Choose a topic that multiple project teams can use.

Choose any of these or pick another:

iOS programming
Android programming
Windows Phone programming
Blackberry programming
Location-aware services / GPS
Touch-screen interfaces

xCode, ObjectiveC
LiveCode
Parse
Cordova
Ionic Framework

Category: TBD

(No target date)

Some other categories I've thought of:

- Digital marketing or SEO tools/techniques
- Data visualization tools/techniques
- New programming languages