Lesson 1 – Django Web Frameworks
The Big Picture

Google App Engine

Your Django app

Android OS

Your Android app
Course Roadmap

Mobile Applications
- Back-End
  - Google App Engine
  - Algorithms
  - Mobile Web
  - Android
- Data Transfer
- Front End
  - Google Datastore
  - HTML
  - CSS
  - Javascript/JQuery
  - Java
- Python
- Regular expressions
Python Web Application Frameworks for Backend

django

ZOPE

heroku

Turbo Gears

web2py

Pykons
Web Application Framework

• A framework (a.k.a. code libraries) that provides functionality for common components in a website, web app, or web service.

• Eases coding for
  – Working with forms
  – Handling HTTP requests
  – Templates for common HTML layouts
  – URL mapping
  – Database communication
  – Session management
  – Site security

• Allows you to focus on design and functionality rather than small details.
Model-View-Controller (MVC)

• A paradigm for organizing code often seen in web app frameworks

• Main idea is
  1. Separate the storage and manipulation of data (the model) and the presentation of data (view)
  2. Use the Controller to communicate between the model and view

• Advantages
  – Easier to develop and test model and view independently
  – Easier for others to understand
Model-View-Controller (MVC) (news site example)

- **Model**
  - News stories and images in a database
  - User comments

- **View**
  - Layout of stories on mobile phone or desktop browser

- **Controller**
  - Sends request for a story
  - Asks the model for the story and its user comments
  - Serves requested story
Google App Engine

- Google’s cloud computing platform to develop and host web applications
- Distributed data storage service (The Datastore)
- Free up to 500 MB of storage and 5 million page views
- Saves the hassle and initial costs of setting up your own server equipment and software
- Supports Java and Python
What is Django?

• Web application framework, written in Python
• Released 2005
• Began with World Online, that needed to rapidly develop applications for news sites.
• Named after gypsie jazz guitarist Django Reinhardt (1910-53)
• Follows the Model-View-Controller paradigm
Why Django?

• Fast and easy development of web applications
  – Modular and re-useable. Don’t Repeat Yourself (DRY) principle
  – Hides database details
  – Builtin SQLite database generation (support for others)
  – Only requirement is Python installation

• Active development and wide community support

• Successful Django sites [http://djangosites.org/](http://djangosites.org/)

• Supported by Google App Engine