



Accelerating Information Technology Innovation

<http://aiti.mit.edu>

Kenya Summer 2011
Lecture 11 – Web Application Frameworks



The Big Picture

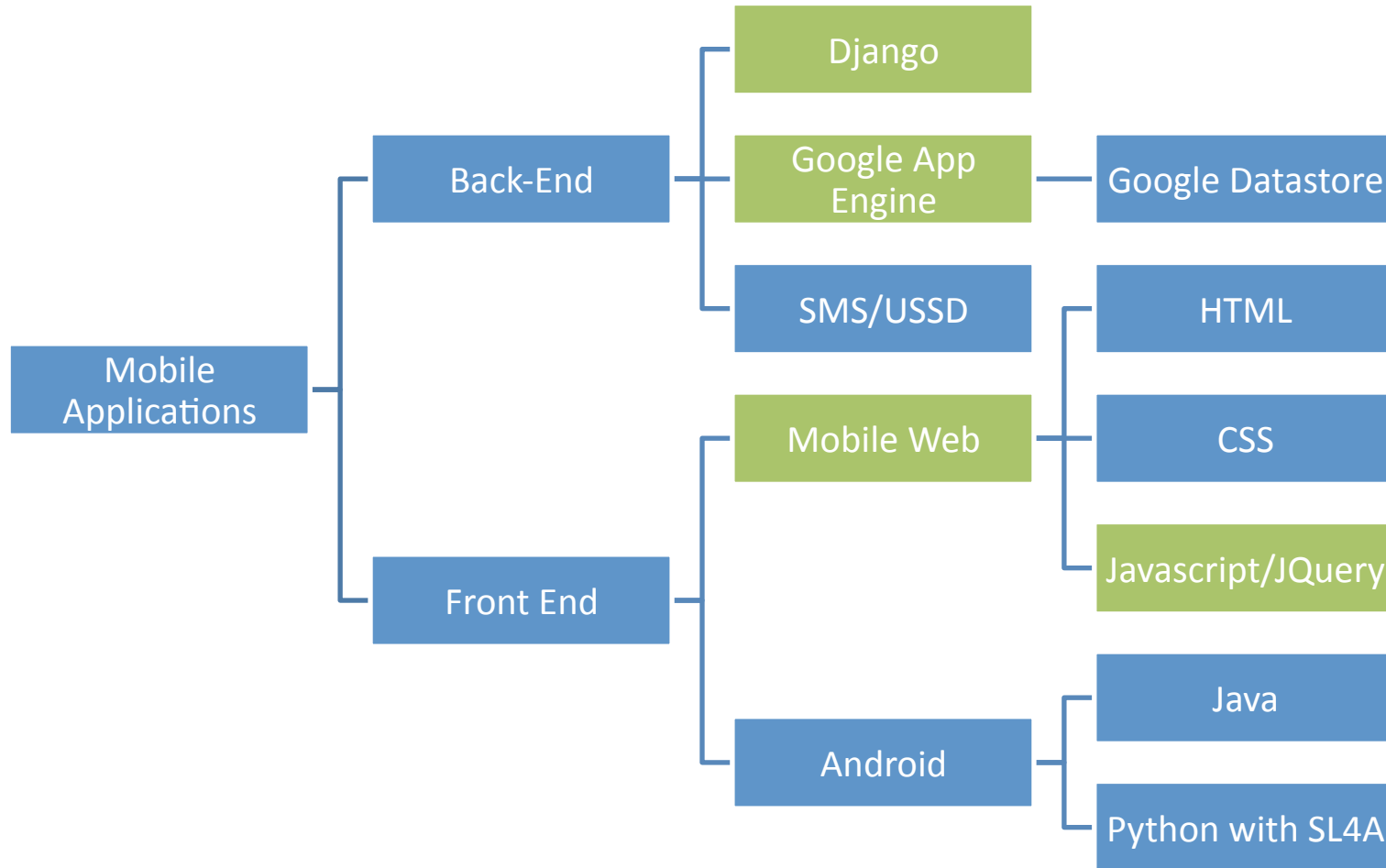


Google App Engine

Your Django app

Mobile Web Browser/
Mobile Web App

Mobile App Development Course Roadmap



Development Tools

- Operating system
 - Linux (Ubuntu)
- Integrated Development Environment
 - Eclipse (Pydev)
- Version Control
 - git (GitHub)
 - mercurial (Bitbucket or Google project hosting)
 - subversion (Google project hosting)

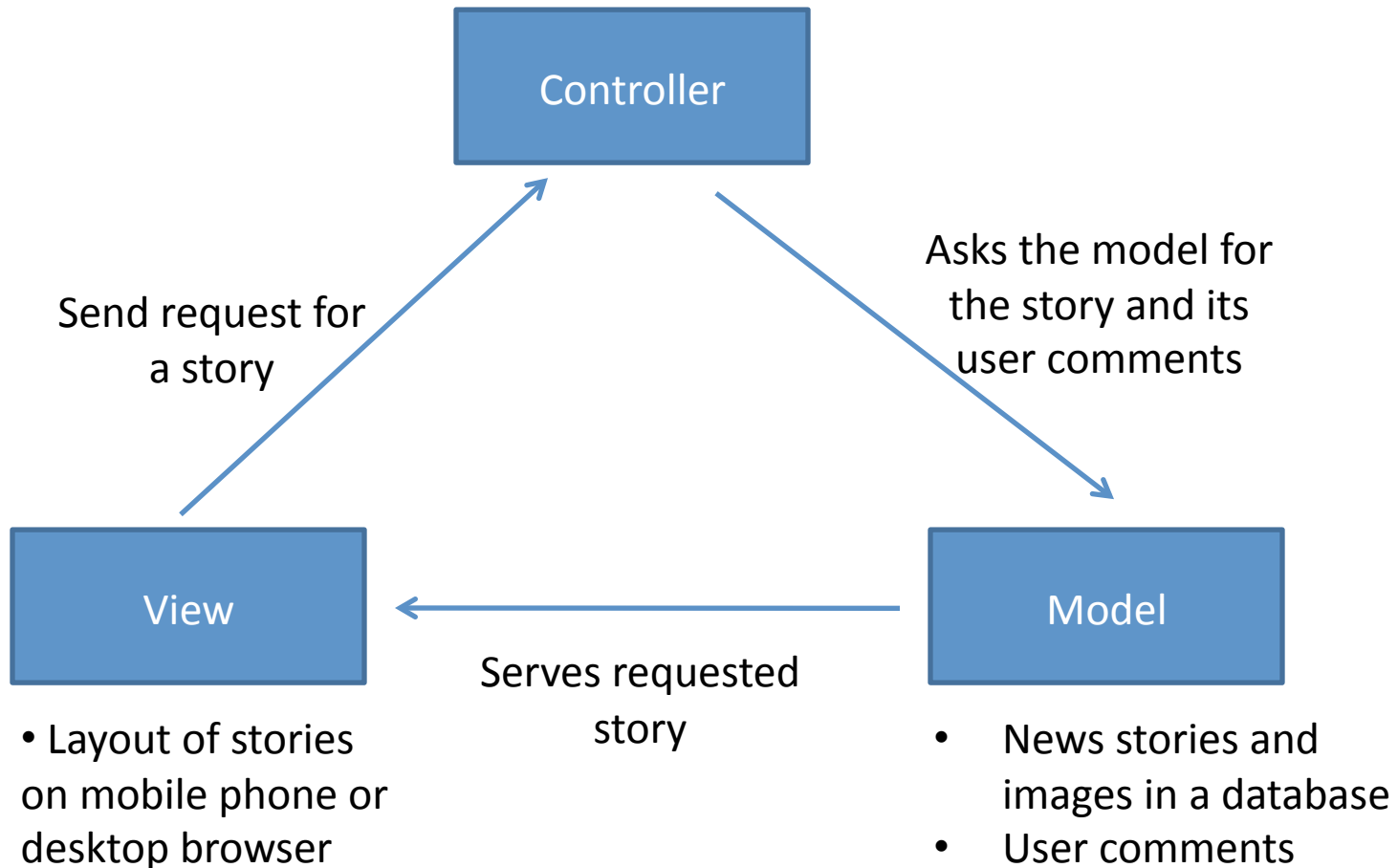
Web Application Framework

- 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:
 - Separate the storage and manipulation of data (the model) and the presentation of data (view)
 - 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
- Exact roles of model, view, and controller depend on who you ask!

Model-View-Controller (MVC) (news site example)



Python Web Application Frameworks for Backend



Django

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



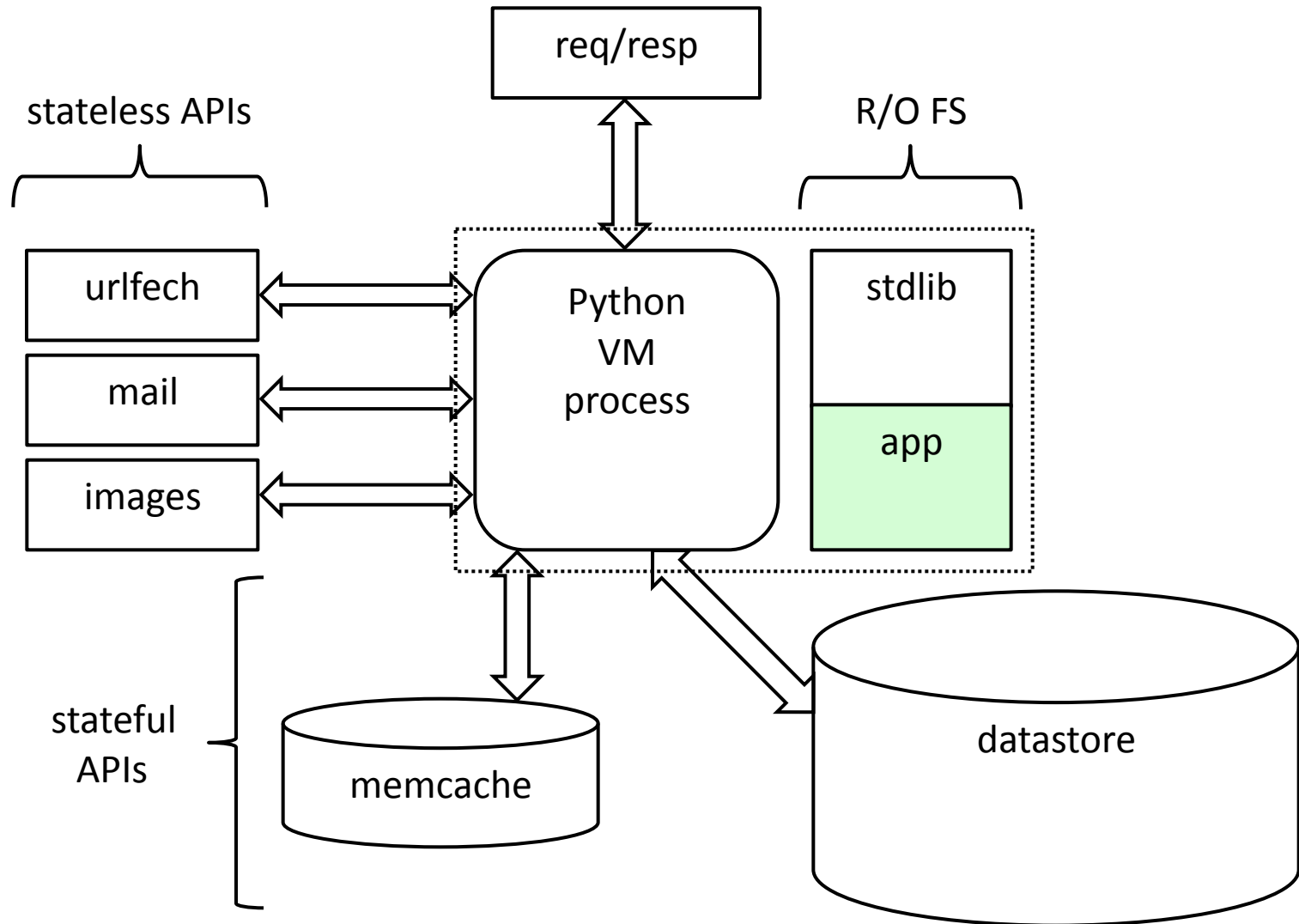
Why Django?

- Fast and easy development of web applications
 - Modular and re-useable. Don't Repeat Yourself (DRY) principle
 - Hides database details
- Active development and wide community support
- Successful Django sites <http://djangosites.org/>
- Supported by Google App Engine

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

App Engine Architecture



Questions?