MIT
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Lesson 1 - Django Web Frameworks

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Google

The Big Picture

Google App Engine

Your Django app

Android OS

Your Android app

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Course Roadmap

```
Mobile Applications
├── Back-End
│   ├── Django
│   │   ├── Python
│   │   └── Regular expressions
│   ├── Google App Engine ── Google Datastore
│   └── Algorithms
├── Data Transfer
└── Front End
    ├── Mobile Web
    │   ├── HTML
    │   ├── CSS
    │   └── Javascript/JQuery
    └── Android ── Java
```

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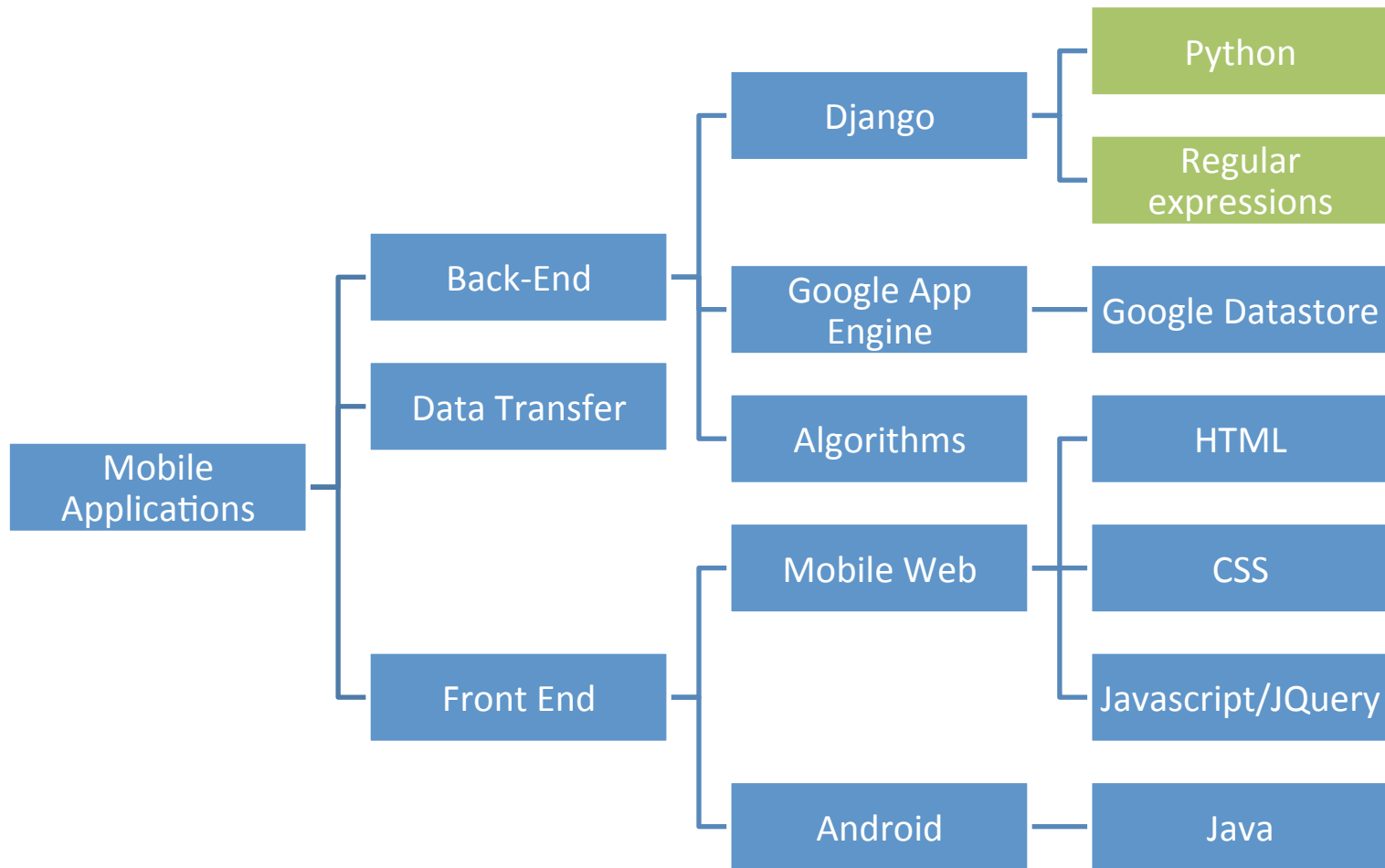
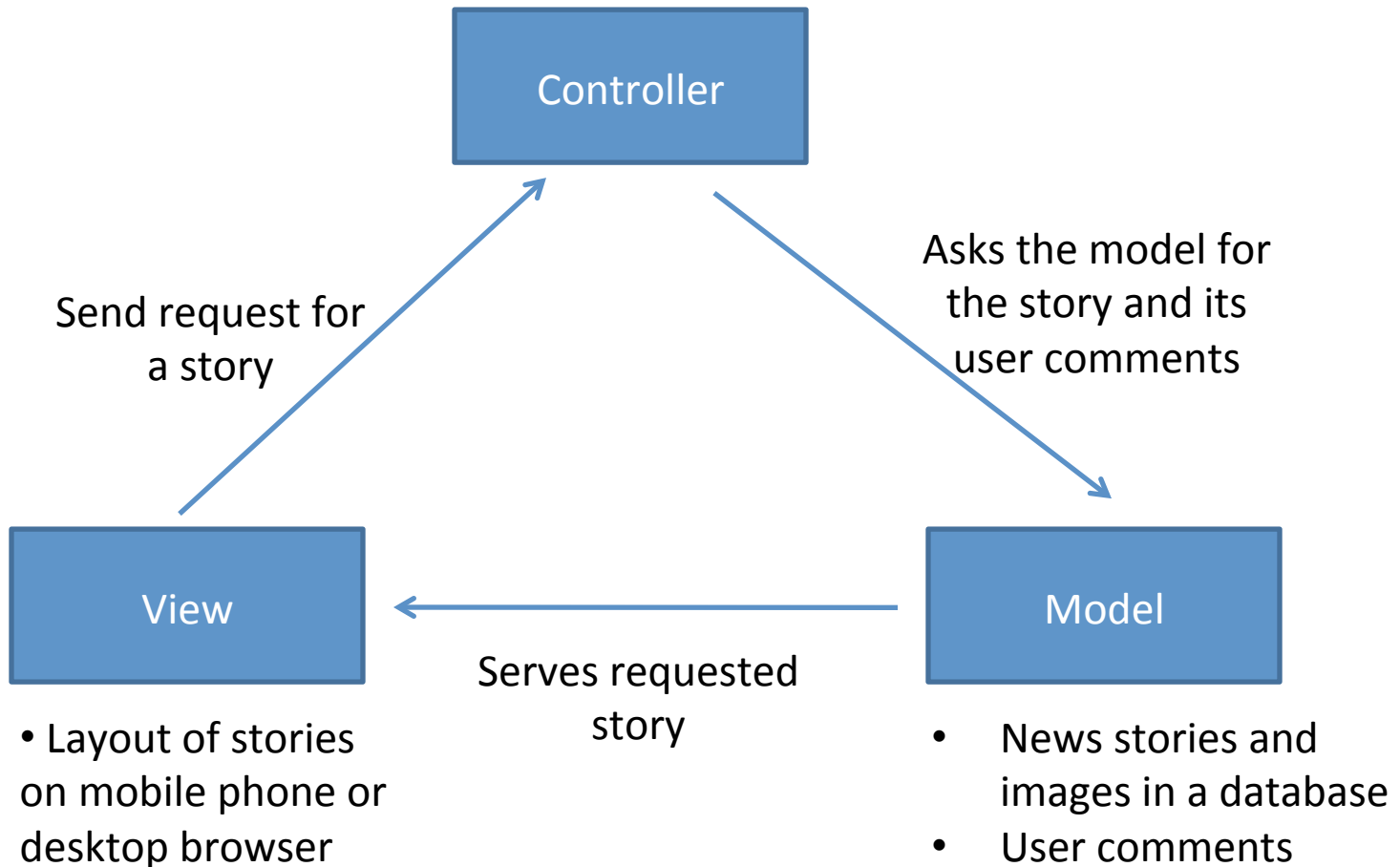# Python Web Application Frameworks for Backend

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.

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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)

Controller

Send request for a story

Asks the model for the story and its user comments

View
- Layout of stories on mobile phone or desktop browser

Serves requested story

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

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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

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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/
- Supported by Google App Engine