Software Development

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Course Outline

Unit 1: Django
- Install and setup Django
- Views (methods)
- Template
- Request and response objects
- Cookies Handling
- Forms (simple)

Unit 2: Basic front-end
- Html
- CSS
- Javascript
- Bootstrap
- AJAX

Unit 3: Database
- Relation Database: structure, tables, columns, keys (primary, foreign), indexes (unique or for performance)
- DB design
- SQL syntax
- SQLite
- NOSQL (JSON column)
- Django models

Unit 4:
- Class-based views
- Using API (client)
- Roles in a team (project manager, analyst, back-end, front-end, engineer, UX/graphic designer, developers)
- Design Document

Unit 5: Advanced Django
- REST API
- Create API server (with Django)
- Middleware
- Advanced forms

Unit 6: Async
- Asyncio
- Async views
- Django channels

Unit 7: Front-end JS framework
- VueJS
- Embedded to HTML (call the library from the HTML code and write VueJS code directly in the HTML page)
- Compile a VueJS project into a js file (and use webpack to see live changes while developing along Django)
- Syntax, computed properties, conditional and list rendering, event handling, watchers
- Use API (API server built on the Django side)

Unit 8: Reports and Plots
- Matplotlib
- Interactive JS plot
- LaTeX