RECITATION 2: FULL-STACK DEVELOPMENT

FEBRUARY 9, 2021

2 THE LEVELS OF THE STACK

- Backend ← Today's Focus

- Frontend

- Deployment

- Testing

- Database

And more

NODE.JS

3

4 WHAT IS NODE?

- JavaScript runtime built on the open source V8 JavaScript engine, which also powers Chrome

- JavaScript that runs on server

- Used to build powerful, fast, scalable web applications

- Uses event-driven, non-blocking I/O model --- built to handle async Javascript via a callback system (classically)

5 NON-BLOCKING I/O

- Single threaded

- Asynchronous function calls

- Concurrency (in Node) refers to the Event Loop's capacity to execute Javascript "callback" functions after completing other work

- Dangers of mixing blocking and non-blocking code

6   ASYNC OPTIONS?

- Callbacks: functions passed to another functions ~ CALLBACK HELL!

- Promises (and promise chains): structured callbacks

- Generators: functions which can be exited/paused and later re-entered

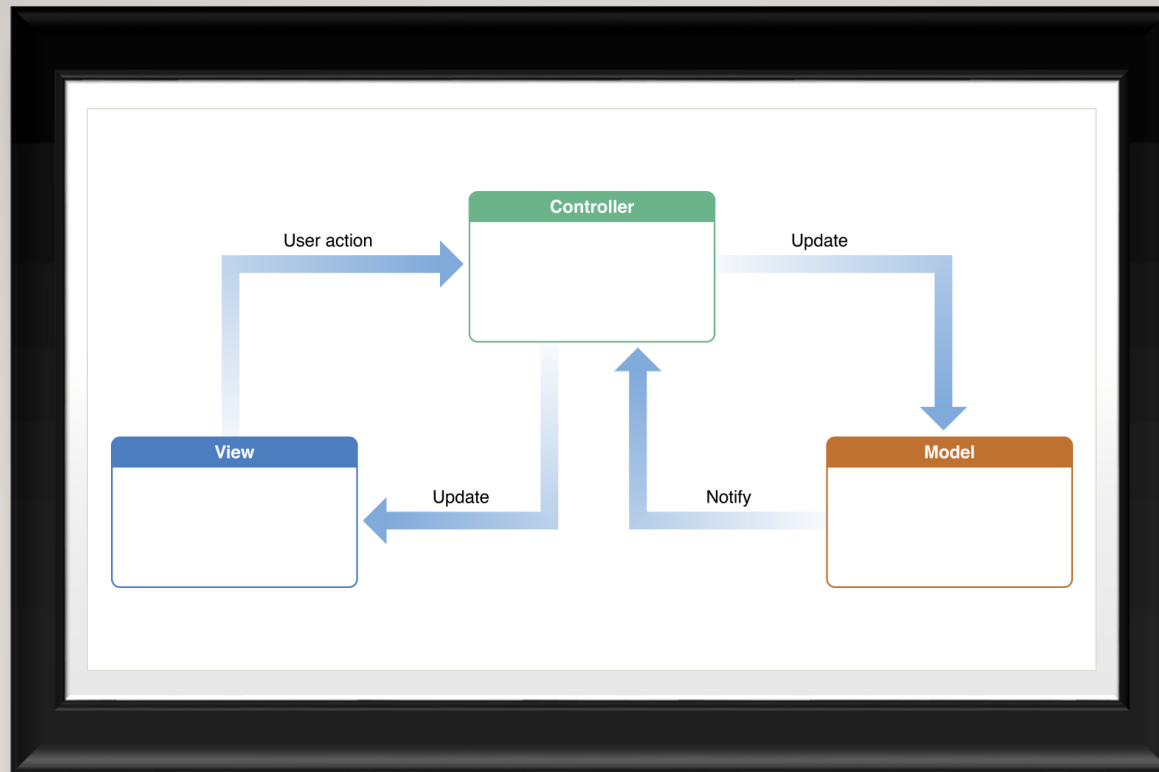- Async/Await: combining generators and promises ~ *async code "made" imperative*

7 NPM

Node Package Manager

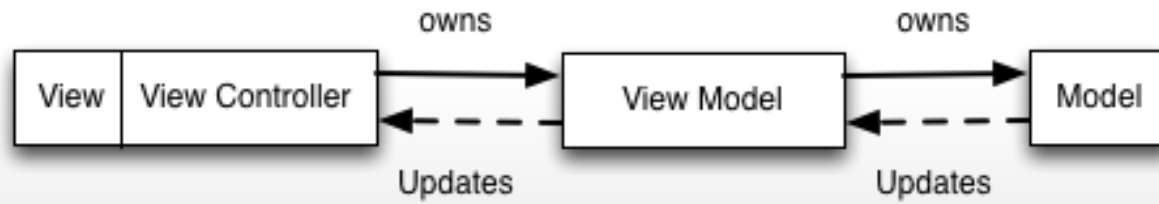The largest ecosystem of open-source libraries in the world

MVC AND MVVM

8

MVC

17-356: Software for Startups

MVVM

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A CODING EXAMPLE

A SIMPLE TO-DO APP