Introduction to Backend Development and Deployment

Via NodeJS and Azure

Session 3 on 14/04/20

Microsoft Student Partners

About this Session

Topic to be covered

- MongoDB
  - Introduction
  - GUI Tools
- MongoDB with NodeJS
  - Connecting to MongoDB Server Hosted Locally
  - Model Creation
  - CURD Operation
- MVC Architecture
  - Introduction
  - Converting current app to MVC
- Restful APIs
  - Introduction

MongoDB

NoSQL

- A NoSQL database provides a mechanism for storage and retrieval of data that is modeled in means other than the tabular relations used in relational databases.

- NoSQL databases are increasingly used in big data and real-time web applications.

- NoSQL may support SQL-like query languages or sit alongside SQL databases in polyglot persistent architectures.

MongoDB

- **MongoDB** is a cross-platform document-oriented database program.
- Classified as a NoSQL database program.
- It uses JSON-like documents with schema.

GUI Tools:

- Robo3T
- MongoDB Compas

Demo: MongoDB Robo3T

Mongod

- The official MongoDB driver for Node.js.
- Provides a high-level API on top of mongodb-core that is meant for end users.
- Installation Command: npm i mongodb | npm i mongoose

Demo

MVC

- The **Model-View-Controller (MVC)** is an architectural pattern that separates an application into three main logical components:
  - •the model
  - •the view
  - •the controller

- Each of these components are built to handle specific development aspects of an application.

- MVC is one of the most frequently used industry-standard web development framework to create **scalable** and **extensible projects**.

RESTFull API

- Also referred to as a RESTful web service or REST API -- is based on representational state transfer (REST).
- An architectural style and approach to communications often used in web services development.
- The REST used by browsers can be thought of as the language of the internet.
- REST is a logical choice for building APIs that allow users to connect to, manage and interact with cloud services flexibly in a distributed environment.
- RESTful APIs are used by such sites as Amazon, Google, LinkedIn and Twitter.

Working

- IT breaks down a transaction to create a series of small modules.

- Each module addresses a particular underlying part of the transaction.

- This modularity provides developers with a lot of flexibility.

- A RESTful API uses existing HTTP methodologies defined by the RFC 2616 protocol. Example: Consider an object, file or block on which we can perform operation:
  - •GET to retrieve a resource
  - •PUT to change the state of or update a resource
  - POST to create that resource
  - DELETE to remove it.
  - which can be

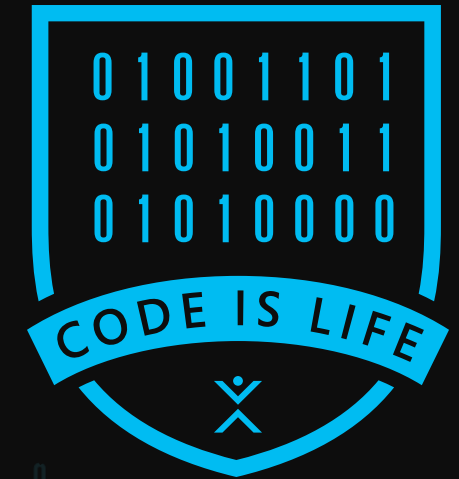# Demo: Change developed service to MVC with REST API

Assignment

Registration Form

Develop a webservice which follows the development guidelines of MVC and Restful Architecture with following feature:

- A Form used with accessible at the root of the service. Eg: example.com/

- Form should generate a registration request without need of page reload. (Hint: use JS to send request).

- The registration data should be stored in a database.

- Details of registered people should be available in via only with authentication with apikey.

Thank You

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