Server-side Development with NodeJS, Express and MongoDB
Course Overview

Jogesh K. Muppala

THE DEPARTMENT OF
COMPUTER SCIENCE & ENGINEERING
計算機科學及工程學系

香港科技大學
THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

Expected Background

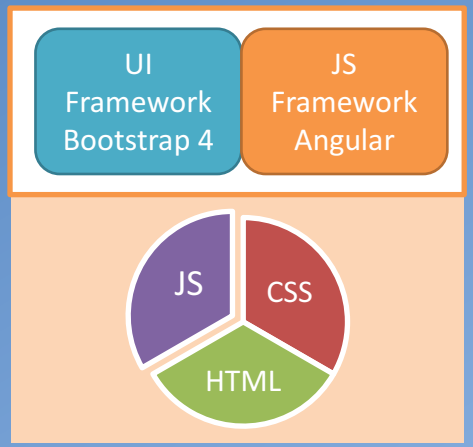
- You should have good working knowledge of:
  - JavaScript
    - Good knowledge of ES 5 is necessary
    - ES 2015+ preferred (at least arrow functions)
- Preferrably completed at least the Angular course in the specialization
  - To understand the Front-end side of the story

Web Design and Development

- Design
  - User Interface (UI)/ User Experience (UX) Design
  - Visual Design
  - Prototyping
  - Colors, Graphics and Animation

- Development, Building and Deployment
  - Web UI Frameworks: Bootstrap 4
  - JavaScript Frameworks: Angular
  - Hybrid Mobile Frameworks: Ionic, Cordova and NativeScript
  - Server-side Development: Node + Express + MongoDB

Full Stack Web Development



BaaS

NodeJS Modules

NodeJS

MongoDB

Presentation layer

Business Logic layer

Data Access layer

Course Outline

- Node.js and Node modules
- Express Framework
- MongoDB
- Backend as a Service (BaaS)

Module 1: Introduction to Server-side Development

- Full Stack Web Development: The Big Picture
- Setting up your Development Environment: Git
- Introduction to Node.js and NPM
- Node Modules
- Node and HTTP
- Introduction to Express
- Assignment 1

Module 2: Data, Data, Where art Thou Data?

- Express Generator
- Introduction to MongoDB
- Node and MongoDB
- Mongoose ODM
- REST API with Express, MongoDB and Mongoose
- Assignment 2

Module 3: Halt! Who goes there?

- Basic Authentication
- Cookies, Tea and err ... Express Sessions
- User Authentication with Passport
- Mongoose Population
- Assignment 3

Module 4: Backend as a Service (BaaS)

- HTTPS and Secure Communication
- Uploading Files
- Cross—Origin Resource Sharing
- OAuth and User Authentication
- Backend as a Service (BaaS)
- Assignment 4