



IT 4403 ADVANCED MOBILE AND WEB APPLICATIONS STUDY GUIDE

MODULE 1: OVERVIEW/INTRODUCTION

Prepared by Jack G. Zheng, Fall 2020

OVERVIEW AND LEARNING OUTCOMES

In this first module, I am going to provide an overview of web technologies and applications with a survey of the latest trends and possible topics in the field. This sets a context for the focal topic of this class: single page app.

Learner outcomes:

1. Review the development stages of the Web and discuss where it stands currently.
2. Discuss how architecture and each of the fundamental components of the web has evolved.
3. Describe JavaScript's role and impact to current web applications.
4. Explain what single-page web applications are.
5. Set up your web development and hosting environment.

This module is related to course level learning outcomes 1.

TASK LIST

1. Complete the required readings and the lecture notes listed in learning materials. Use the questions in "Research and Discuss" section to guide your reading. Use the lecture notes as a reading and learning guide; follow the resources presented in the notes for further information and additional learning.
2. Research and discuss (optional; please discuss them in the discussion board if you want to):
 - a. Which of the recent development of web technologies most interests you? Which of them do you believe will become a major trend in the near future? Why?
 - b. Do you see any major trend missing from the overview slide?
 - c. What do you think about the role of JavaScript in modern web applications? Is client side development taking a more important role? See some discussion here <https://softwareengineering.stackexchange.com/questions/162118/rush-to-client-side-in-web-development>
 - d. Is it a good idea to do UI 100% in Javascript and provide data through an API? <https://softwareengineering.stackexchange.com/questions/140036/is-it-a-good-idea-to-do-ui-100-in-javascript-and-provide-data-through-an-api>
 - e. What is the major advantages of an SPA or SPA like web app? What are the weaknesses? Start your research here <https://stackoverflow.com/questions/21862054/single-page-application-advantages-and-disadvantages>
3. Follow the web hosting lab to start to research and set up a public web sites. You will put all your exercises and project there this semester. Post your website URL to the project discussion board. I will compile a list with all your websites and post it. If you have question and need advice, also use the discussion board.
4. Course readiness: continue to complete the quizzes and exercises in the Course Readiness document, which help you review fundamentals of web development. Put your work on your public site. You may discuss these exercises in the discussion board.

LEARNING MATERIALS

1. Required readings
 - a. JavaScript's role: <https://arc.applause.com/2015/11/06/javascript-is-eating-the-world/>
 - b. The new Web application architectures and their impacts for enterprises

- i. <http://blog.octo.com/en/new-web-application-architectures-and-impacts-for-enterprises-1/>
 - ii. <https://blog.octo.com/en/new-web-application-architectures-and-impacts-for-enterprises-2/>
 - c. Client centered web app architecture: <http://www.slideshare.net/bastila/sencha-web-applications-come-of-age>
 - d. An introduction to single page applications: <http://www.johnpapa.net/pageinspa/> - SPA will be our focus of the course (project) throughout the semester. Get some initial conceptual understanding first. Read the comments as well.
2. Instructor's lecture notes
 - a. SPA.pdf: provides an overview of SPA.
 - b. Web landscape (<http://www.slideshare.net/jgzheng/web-application-landscape>): The lecture notes provides a summary of the fundamental technologies and the evolution of the web. Please follow the readings and additional references in the lecture notes to refresh your knowledge. It also surveys the trend of web and some related topics.
3. Web hosting lab guide.
4. Course readiness lab – continued from the orientation but use the web hosting service to host all your work.
5. Additional readings and resources
 - a. <https://dannorth.net/2011/12/19/the-rise-and-rise-of-javascript/comment-page-1/>
 - b. https://mobidev.biz/blog/3_types_of_web_application_architecture
 - c. <http://devproconnections.com/javascript/explore-new-world-javascript-focused-client-side-web-development>
 - d. https://en.wikipedia.org/wiki/Single-page_application
 - e. <http://www.shiftedup.com/2014/10/15/is-a-single-page-application-what-you-really-need>
 - f. <http://tutorialzine.com/2015/02/single-page-app-without-a-framework/>
 - g. <https://johnpapa.net/spa/>