IT 4403 Advanced Mobile and Web Applications Study Guide
Module 11: Responsive Web Design

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Overview and learning outcomes

There are two basic approaches (or 4 if counting subcategories) to deliver mobile web sites. Of them, Responsive Web Design (RWD) is the most popular. RWD aimed at crafting sites to provide an optimal viewing experience, easy reading and navigation with a minimum of resizing, panning, and scrolling, across a wide range of screen sizes and devices. Ethen Marcotte originally describes RWD with three basic strategies: fluid grids, media queries, and flexible images. Since then it has become a common practice, and many specific techniques and patterns have emerged and applied.

In this module, we are going to have some understanding of the three basic ideas with practical examples. There are quite a lot of RWD best practices and design patterns in more specific areas like layout, navigation, content/information design and presentation, form design, etc. We will discuss some of them further in additional modules. We cannot cover all of them in this class but hope this sets a starting point for your own exploration.

1. Compare basic delivery options of mobile website: mobile version site and one web (adaptive, responsive, RESS).
2. Explain the three basic ideas of responsive web design and its impact in mobile web design.
3. Discuss and practice the three basic principles and strategies of RWD:
    a. Fluid grids
    b. Flexible images
    c. Media queries (including techniques of graceful degradation and progressive enhancement)

This learning module is related to course learning outcome 4.

Task list

1. Use the lecture notes as a reading and learning guide; follow the resources presented in the notes for further information and additional learning.
2. Complete the core readings and the lecture notes listed in learning materials. Use the questions in "Review and Research" section to guide your reading.
3. Review and research (optional; please discuss them in the discussion board if you want to):
    a. What are the choices of delivering mobile version web sites and applications? What is ONE Web?
    b. When should an organization build a separate mobile version website?
    https://www.nngroup.com/articles/mobile-site-vs-full-site/
4. Lab 3: complete lab 10 on RWD (no submission)

Learning materials

1. Lecture notes: https://www.edocr.com/v/yxdmelxy/jgzheng/responsive-web-design
2. Core online readings:
    a. Approaches summary: https://www.thinkwithgoogle.com/marketing-resources/experience-design/building-websites-multi-screen-consumer/
    b. Responsive web design
        i. http://alistapart.com/article/responsive-web-design: the original article focused on concepts.
        ii. Good introduction with more technical details: https://msdn.microsoft.com/en-us/magazine/hh653584.aspx

iii. Media queries: https://developer.mozilla.org/en-US/docs/Web/CSS/Media_Queries/Using_media_queries
   c. Adaptive web design
      i. https://www.wired.com/2013/05/the-two-flavors-of-a-one-web-approach-responsive-vs-adaptive/
      ii. https://deviceatlas.com/blog/7-myths-about-adaptive-web-design-debunked
   d. RESS: The original article raising the idea https://www.lukew.com/ff/entry.asp?1392
   e. Comparison: https://www.lukew.com/ff/entry.asp?1509
3. Additional readings and resources
   a. More about One Web: https://adactio.com/journal/1716/
   b. https://developer.ibm.com/articles/responsive-design-future/
   c. Why Separate Mobile & Desktop Web Pages? http://www.lukew.com/ff/entry.asp?1390
   d. More technical details on media queries and fluid grid:
      i. http://css-tricks.com/logic-in-media-queries/
      ii. https://www.w3schools.com/css/css_rwd_mediaqueries.asp
      iii. http://alistapart.com/article/fluidgrids
   e. More tutorials
      i. https://developers.google.com/web/fundamentals/design-and-ux/responsive/
      ii. http://learn.shayhowe.com/advanced-html-css/responsive-web-design
      iii. http://www.smashingmagazine.com/2011/01/12/guidelines-for-responsive-web-design/