

CIS 658 Web Architectures

Introduction



GRAND VALLEY
STATE UNIVERSITY®

Lecturer: **Dr. Yong Zhuang**

What is Web Application Programming?

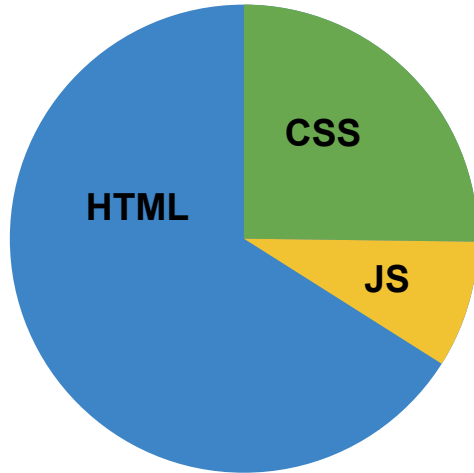
What is Web Application Programming?

Web Apps \neq Web Pages



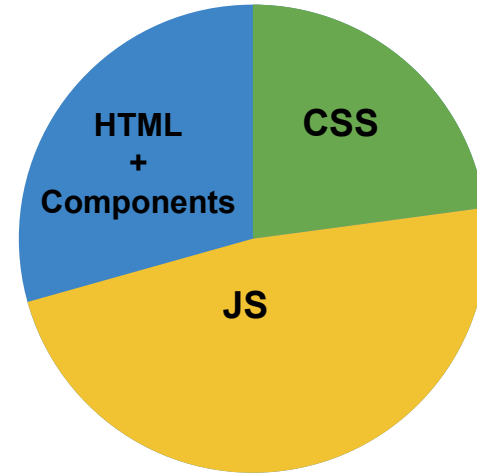
CS 371 (this course)

Web Pages vs. Web Apps



Static Web Pages

Web 1.0: read-only web



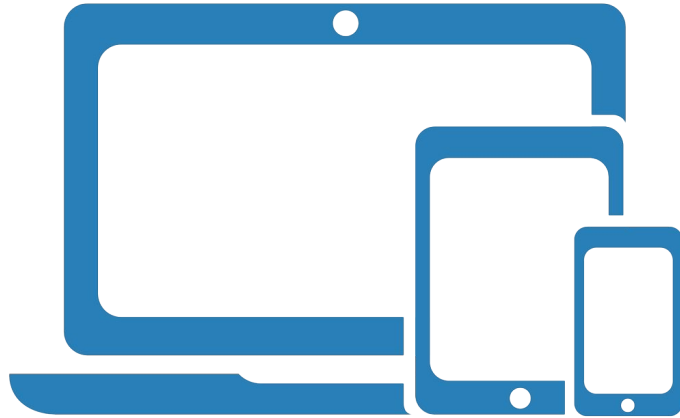
Web Apps

Web 2.0: dynamic read-write web

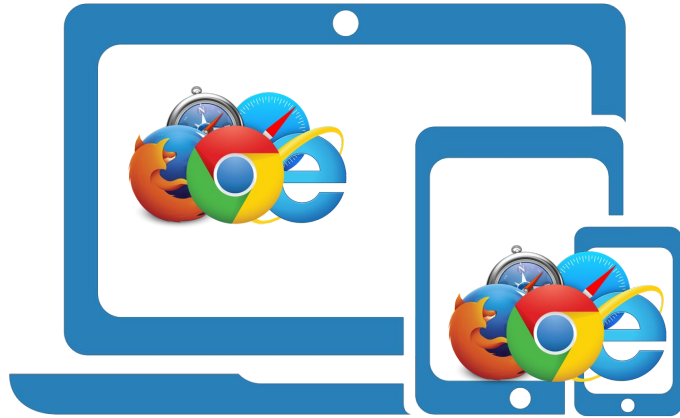
Desktop / Mobile Apps vs. Web Apps

Desktop / Mobile Apps

Traditional Client/Server architecture



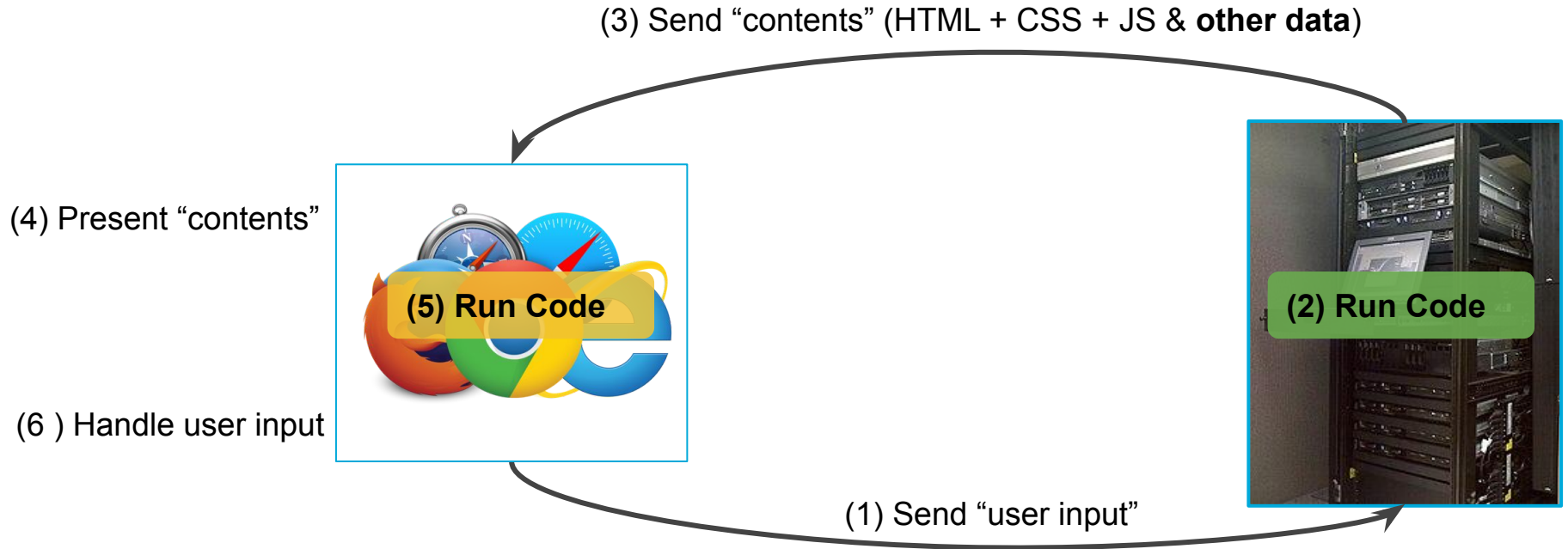
Web Apps: Client/Server architecture



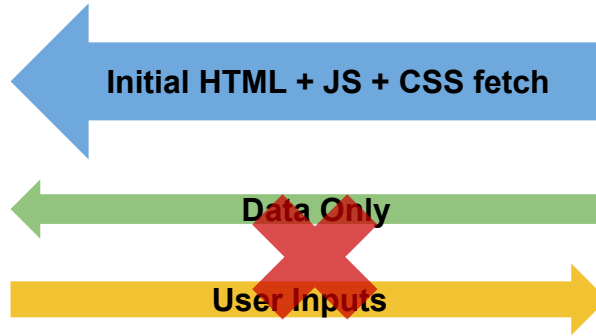
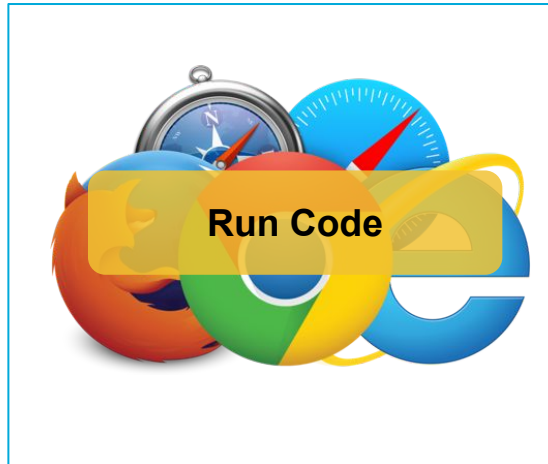
Roles of Web Browsers in Web apps

- Present data
 - HTML + Text + Audio + Video + Image
 - Content animation (CSS)
 - 2D Graphics or 3D Graphics (WebGL) on <canvas>
- Receiver user input
 - Textual input
 - Mouse clicks / screen taps
 - Screen orientation (gyroscope on smartphones) ⇒ WebVR
- Run code
 - JavaScript (engines: Google V8, Mozilla SpiderMonkey, Apple JSCore, Microsoft Chakra)
 - Web Assembly (proposal since 2017)

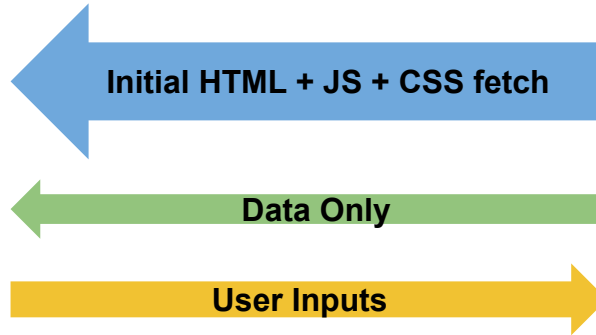
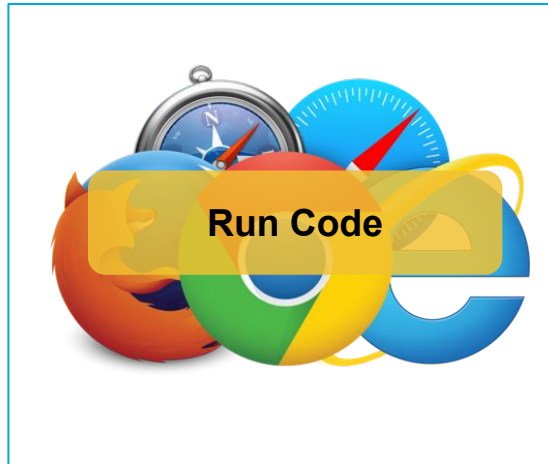
Web Client/Server Architecture



Web 1.0: Static web pages



Web 2.0: Client/Server (dynamic R/W web apps)



Centralized
app hosting platforms