CMPT 474 - D100 Web Systems Architecture

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Calendar Objective/Description:
Web service based systems are fundamentally different from traditional software systems. The conceptual and methodological differences between a standard software development process and the development of a web service based information system. The technology involved during the construction of their own web service based application in an extensive project.

Instructor's Objectives:
Building systems for developing applications that run on a cloud is the main topic of discussion in this course, including definitions, enablers, opportunities, challenges, and practices in web(cloud)-based systems architecture.

Readings include research papers and industry articles. The course includes a number of practical projects and hands-on experience.
Learning about Azure, AWS, Google Cloud, Kubernetes, OpenStack, and building cloud-based systems is a part of this course.

Prerequisites:
CMPT 371.

Topics:
- Web(Cloud)-based Systems: Definitions, Opportunities, and Challenges
- Scalability, Virtualization, and Resource Elasticity
- Service-based, and Micro-Services Architectures
- Service Management & Orchestration
- Meeting User Expectations: Availability, Consistency, Reliability, and Fault Tolerance
- Meeting User Expectations: Performance Requirements and Tradeoffs
- Privacy and Security
- Service Delivery, Measurement, and Pricing
- Tools, Platforms, and Experiments

Grading:
Labs and Quizzes (20%), Assignments and Projects (40%), Midterm and Final (40%)

Students must attain an overall passing grade on the weighted average of exams in the course in order to obtain a clear pass (C- or better).

Academic Honesty Statement:
Academic honesty plays a key role in our efforts to maintain a high standard of academic excellence and integrity. Students are advised that ALL acts of intellectual dishonesty will be handled in accordance with the SFU Academic Honesty and Student Conduct Policies (http://www.sfu.ca/policies/gazette/student.html).