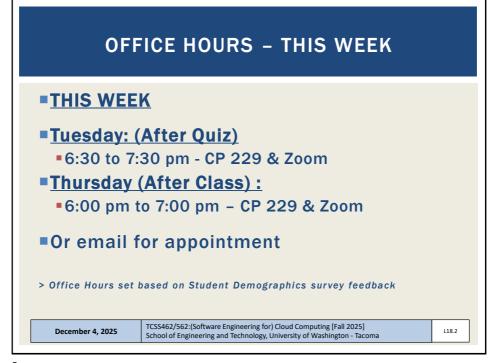
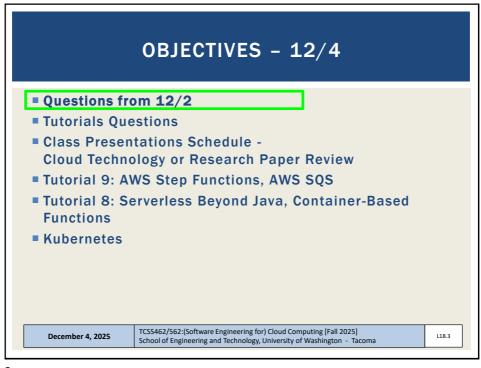


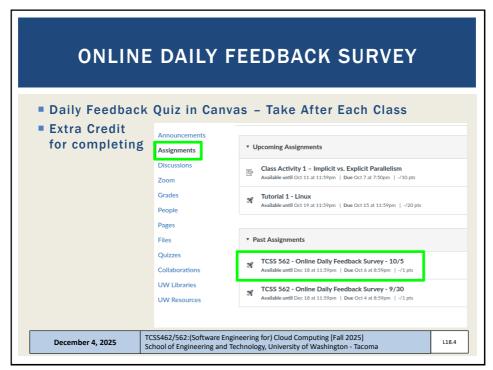
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St	arted:	5 562 Oct 7 at 1	l:13am		Daily	Feedk	ack S	Surve	y - 10	/5			
		Questi	Question 1										
	On a scale of 1 to 10, please classify your perspective on material covered in today's class:										red in today's		
		1 Mostly Review		3	4 Ne	5 Equal w and Rev	6 view	7	8	9	10 Mostly New to Me		
		Question 2 0.5 pts											
	Please rate the pace of today's class:												
		1	2	3	4	5	6	7	8	9	10		
		Slow			J	ust Right				1	Fast		
December 4	TCSS462/562:(Software Engineering for) Cloud Computing [Fall 2025] School of Engineering and Technology, University of Washington - Tacoma										L18.5		

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# MATERIAL / PACE Please classify your perspective on material covered in today's class (45 respondents, 41 in-person, 4 online): 1-mostly review, 5-equal new/review, 10-mostly new Average − 5.30 (↓ - previous 6.17) Please rate the pace of today's class: 1-slow, 5-just right, 10-fast Average − 4.93 (↓ - previous 5.12) TCSS462/562:(Software Engineering for) Cloud Computing [Fall 2025] School of Engineering and Technology, University of Washington - Tacoma

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# FEEDBACK FROM 12/2

- Do TCSS 562 students need to submit peer reviews or only TCSS 462 students?
  - TCSS 562 students deliver the presentations, so no peer reviews are required
  - TCSS 462 students submit 4 peer reviews total. They can select any
    of the presentations to complete the online PDF
- How many points is optional tutorial 9 worth?
  - 15 points
- Is Optuna open source? could i use this to tune personal models?
  - Optuna is open source: <a href="https://optuna.org/">https://optuna.org/</a>

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### TERM PROJECT SUBMISSION

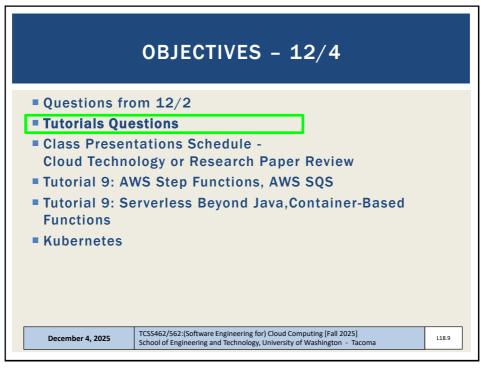
- Grading time constraint: submission > Sat Dec 13<sup>th</sup> @11:59am not graded
- EXTRA CREDIT FOR EARLY SUBMISSION
  - Submission timestamp used to determine extra credit
  - By 2pm Wednesday December 10: +5(%) points
  - By 2pm Thursday December 11: +3(%) points
  - By 2pm Friday December 12: +1(%) point
- GROUPS SHOULD SUBMIT A TERM PAPER OR PRESENTATION NOT BOTH
- The following submissions are required:
- 1. (TCSS 562) PDF of the term paper
- 2. (TCSS 462) PDF of the term project slides, URL to Google slides, or ppt/pptx file
- 3. (TCSS 462) Video recording of project presentation (at least one of the following: mp4 file, link to YouTube video, link to mp4 file hosted on Google Drive, or link to Zoom recording)
- 4. (TCSS 462/562) complete project source code tar.gz or zip file

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### TUTORIAL 7 - DEC 4 Introduction to Docker https://faculty.washington.edu/wlloyd/courses/tcss562/ tutorials/TCSS462\_562\_f2025\_tutorial\_7.pdf • Must complete using c7i-flex.large ec2 instance & Ubuntu 24.04 (for cgroups v2) Use DOCX file for copying and pasting Docker install commands Topics: Installing Docker Creating a container using a Dockerfile Using cgroups virtual filesystem to monitor CPU utilization of a container Persisting container images to Docker Hub image repository Container vertical scaling of CPU/memory resources Testing container CPU and memory isolation TCSS462/562:(Software Engineering for) Cloud Computing [Fall 2025] December 4, 2025 L18.10 School of Engineering and Technology, University of Washington - Tacoma

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# **OBJECTIVES - 12/4** Questions from 12/2 ■ Tutorials Questions Class Presentations Schedule -**Cloud Technology or Research Paper Review** ■ Tutorial 9: AWS Step Functions, AWS SQS Tutorial 8: Serverless Beyond Java, Container-Based **Functions** Kubernetes TCSS462/562:(Software Engineering for) Cloud Computing [Fall 2025] School of Engineering and Technology, University of Washington - Tacoma December 4, 2025

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# **GROUP PRESENTATIONS TWO OPTIONS:** Cloud technology presentation Cloud research paper presentation Recent & suggested papers will be posted at: http://faculty.washington.edu/wlloyd/courses/tcss562/papers/ ■ Presentation dates: Tuesday November 25 Tuesday December 2, Thursday December 4 Peer Reviews Word DOCX review form posted, fill out, submit PDF on Canvas Feedback shared with groups TCSS 462: submit 4 total peer reviews in lieu of a group presentation TCSS462/562:(Software Engineering for) Cloud Computing [Fall 2025] School of Engineering and Technology, University of Washington - Tacoma

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### **GROUP PRESENTATIONS**

- 7 Presentation Teams
- 3 Cloud Technology Talks
- 4 Cloud Research Paper Presentations
- 1 one-person teams
- 2 two-person teams
- 4 three-person teams
- Thank you for the submissions

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### PRESENTATION SCHEDULE

- <Tuesday November 25>
- 1. Team 4: Xiaoling Wei, Bohan Xiong, Xu Zhu

Research paper: Serverless Replication of Object Storage across Multi-Vendor Clouds and Regions

2. Team 1: William Hay

Cloud Technology: Amazon Athena

- 3. Robert Cordingly Original Research Paper: Sky Computing for Serverless: Infrastructure Assessment to Support Performance Enhancement (IEEE/ACM UCC 2025 Practice Talk)
- <Tuesday December 2>
- 1. Team 5: Sparsha Jha, Chris Biju

<u>Cloud Technology:</u> Intelligent Optimization of Distributed Pipeline Execution in Serverless Platforms: A Predictive Model Approach

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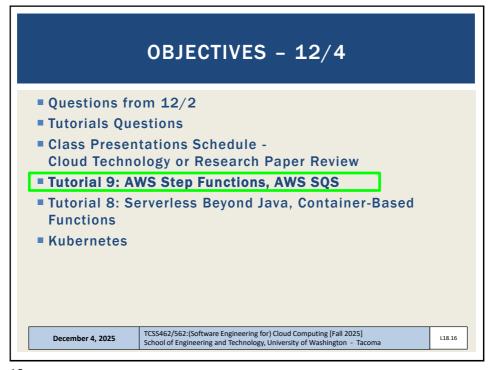
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# **TUTORIAL 9 - TO BE POSTED**

- Introduction to AWS Step Functions and Amazon Simple Queue Service (SQS)
- **Not Required**, available for **EXTRA CREDIT** (scored out of 0)
  - Adds up to 15 points to overall tutorials score
- Tasks
  - Adapt Caesar Cipher Lambda functions for use with AWS Step Functions
  - Create AWS Step Functions State Machine
  - Create a BASH client to invoke the AWS Step Function
  - Create Simple Queue Service Queue for messages
  - Add message to SQS queue from AWS Lambda function
  - Modify AWS Step Function Bash client script to retrieve AWS Step Function result from SQS queue

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## **OBJECTIVES - 12/4**

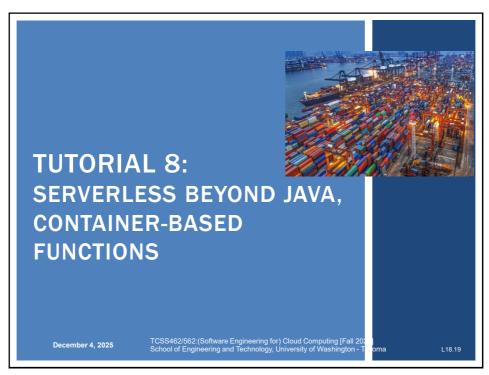
- Questions from 12/2
- Tutorials Questions
- Class Presentations Schedule -Cloud Technology or Research Paper Review
- Tutorial 9: AWS Step Functions, AWS SQS
- Tutorial 8: Serverless Beyond Java, Container-Based Functions
- Kubernetes

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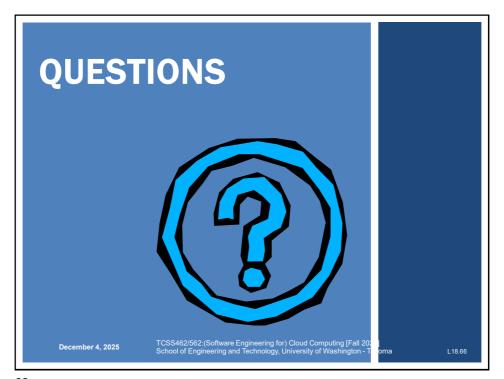
### **TUTORIAL 8** Python Based AWS Lambda Functions w/ SAAF, and Container-**Based AWS Lambda Functions** ■ Not Required, available for EXTRA CREDIT (scored out of 0) adds points to overall tutorials score 10 pts for Python Functions / 15 pts for Container Based Function Build/Deploy/Test Python-based Lambda Functions Deploy and Test Container Based AWS Lambda Function Requires Docker Engine installation on local VM Create role to use CLI/publish script Use a config file to specify container-based function details Update bash script to deploy hello function Build Docker container locally, Publish to Elastic Container Registry Create new 'hello' Lambda Function based on Container image Test Container-based 'hello' AWS Lambda Function Adapt your function to run sysbench prime number generation Test prime number generation performance on AWS Lambda vs. memory

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Slides by Wes J. Lloyd L18.10

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