STUDENT

Mentoring

CLARUSWAY©
WAY TO REINVENT YOURSELF

Class Schedule

- Agile, SDLC, Scrum, Jira
- Python
- Linux
- AWS
- Git
- DevOps
- Networking
- AWS Databases

Teamwork Schedule

Questions 20 minutes

- **Which of the statements below are true about Databases?**

  I- Databases make the information meaningful and useful
  II- Database is an organized collection of data.
  III- Database only stores data. So, you can't fetch any information from the database

  A. II-III
  B. I-III
  C. I-II-III
  D. I-II

- **What are the differences between SQL and NoSQL databases**

- **What is a NULL Value?**

- **What does primary key mean and what are the properties of the primary key?**

- **What is COMPOSITE KEY?**

- **Which of the following is not the disadvantages of SQL?**

A. **It requires strict coordination with database developers.**
B. **The requests must be determined correctly in advance.**
C. **Low flexibility due to the determined scheme.**
D. **Join functions are not available in SQL.**

- **Please explain Error in python?**

- **Please explain Exception is in python?**

Interview Questions 20 mins

- Why is Amazon DynamoDB service best-suited for implementation in mobile, Internet of Things (IoT) and gaming applications?

A. DynamoDB is a fully-managed database instance with no infrastructure overheads
B. DynamoDB has a flexible data model and single-digit millisecond latency
C. Whilst in operation, DynamoDB instances are spread across at least three geographically distinct centers, AWS Regions
D. DynamoDB supports eventual and strongly consistent reads

- **In a fully managed service such as Amazon Aurora, what are the implications of the Shared Responsibility Model?**

A. Amazon is responsible for only the physical infrastructure on which the user's data resides.
B. Amazon is responsible for the EC2 instances, the operating system updates, patching of software and its maintenance
C. The user is responsible for the operating system updates, patching of software and its maintenance.
D. The user is responsible for the security of the EC2 instances on which the relational database resides.

- **What is the AWS service which provides a fully managed NoSQL database service that provides fast and predictable performance with seamless scalability.**

A. AWS RDS
B. DynamoDB
C. Oracle RDS
D. Elastic Map Reduce

- **Which of the following AWS managed database services provides processing power that is up to 5X faster than a traditional MySQL database.**

A. MariaDB
B. Aurora
C. PostgreSQL
D. DynamoDB

Video of the Week 15 mins

Understanding Amazon Relational Database Service (RDS):

https://www.youtube.com/watch?v=eMzCI7S1P9M

Survey 10 minutes

- Which topic was interesting/exciting/easy for you?
- Which topic was boring/hard for you?
- What are the things you liked?
- What are the things you didn't like?

Retro Meeting On a personal and team level 10 mins

Below questions for the week before the break but you can also ask these questions for the break period. It can be beneficial to hear students' opinions about how they did in terms of studying, practicing during the break.

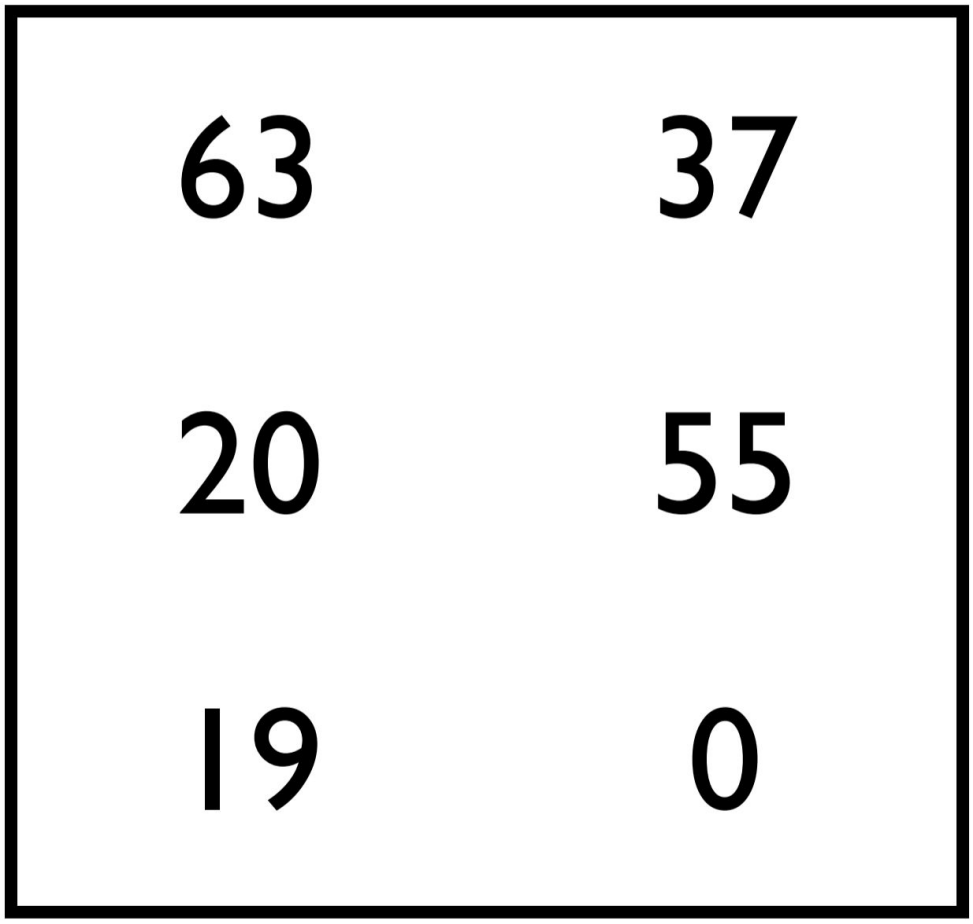
- What went well?
- What could be improved?
- What will we commit to do better in the next week?

Problem of the week: 5 mins

Students should work in small teams to complete the problem of the week.

TOUCH

You've bit off more than you can chew. You're not usually one to zero in on the problem, but it might've been a bad idea to explore this island cave without a light. Stumbling forward in the dark, you wonder what you'll find…



ANSWER: _____

Presentation of Coding Challenge & POW 20 mins

We assume that each group has two sub teams. If this is possible one of the sub teams will present the coding challenge of last week. The other sub team will present the solution to the previous problem of the week. If there is only one sub team then, the sub team will present both of the solutions.

Coding Challenge 5 mins

In this week's coding challenge you are going to build a simple calculator for **1 digit** numbers. The program will ask for a mathematical operation with: *, - , + , / in the following formats:

3*5
4+9
1-8 etc.

And after that the program will display the result of the operation. You should do an input check when getting the input. If the input is invalid then you should keep asking for the input.

Presentation of Case Study of Sprint-5 20 mins

We assume that each group has two sub teams. Each week, one of the sub-teams will present their solution.

Case study 10 mins

Case study should be explained to the students during the weekly meeting and has to be completed in one sprint (2 weeks) by the students. Students should work in small teams to complete the case study.

Case study provided W17 is for sprint-6 (2 weeks)

In this case :

* You are the IAM admin user of your startup company.

* You have recently defined two more IAM users.

* One user has S3 full access privilege and the other one has EC2 privileges including load balancing, auto scaling and instance creating.

* Both of the users will need programmatic access because S3 user wants to sync his/her local folders (One of your team member will do it from his/her local computer) with the the AWS bucket via AWS CLI (Bucket will be in sub-team leader's account) and EC2 user also wants to be able to use AWS CLI. (Another team member will handle EC2 related issues) --- (Users will configure their CLIs with the help of sub-team leader.)

* For a static website project (Any website having a table filled with pictures your team likes...), you need a role in order to let EC2 instances to read data in S3 buckets.

* Therefore your instances will serve the static website by reading the contents in S3.

* To achieve that automatically, you should write a shell script which updates the os, installs a server, pulls the website and starts the server. (The shell script should be given as the user data.)

* In addition to that you want all those instances to clone a python project (first case study's app) and run it. (Instructions should be entered in the user data)

* In order to compensate for a possible large number of users, You want the website scalable.

* So You plan to serve the site by using both AWS Elastic Load Balancing and Auto Scaling services.

* You have configured your load balancer and target group via AWS Console's ELB section and launch template via Auto Scaling section.

* You think that minimum 2 and maximum 5 EC2 instances are enough and the policy for auto scaling should be to add an instance if the average cpu usage exceeds %80 and remove an instance if the average cpu usage goes down %80 for a duration of 5 minutes.

*Good luck!

Closing 5 mins

- Next week’s plan
- QA Session