Cloud
- idea?
- Application : Google drive

Why Cloud??
- not local == cloud
- what's the need to use cloud?
- google drive??
- security? Free services, Enterprise
- Cloud Providers : AWS, Azure, GCP, Heroku
- NSD company : server or cloud
- Deployment, Storage, Database,

What is cloud?
- cloud = remote

Cloud Services
1. Compute :
2. Storage : Google Drive
3. Database : DBMS : queries : MongoDB, Postgres, MySQL
4. Other Services : AI Image Generation, Copilots

AWS Services (400+ service) : Infrastructure

1. EC2
2. S3
3. Lambda
4. DynamoDB
5. CoudWatch
6. IAM
7. API Gateway
8. Load Balancer
9. AWS Amplify
10. Rekognition
11. RDS

EC2 vs Lambda

Compute : EC2, Lambda
Storage : S3
Database : DynamoDB, RDS
Monitoring : CloudWatch
Admin : IAM
Other Services : Amazon Image Rekognition, API Gateway, Load Balancer

Compute : EC2, Lambda
- EC2 : Elastic Cloud Computing (750 hours / month free for 1 year)
  - Render
  - Server Architecture
  - Virtual Machine (dedicated)
  - expensive
  - more cold-start time (buillld), but less processing time
  - will run build
- Lambda Function
  - Serverless Architecture
  - Serverless != no server, underlying we are using servers
  - no dedicated machine
  - cheap
  - less cold-start time (.js /.ts), but more processing time
  - run .js/.ts/etc. file

Storage : S3
- Simple Storage Service
- files? images, videos, audios, txt, doc, zip, rar, .js, pdf, etc.
- files inside S3 : resources
- ARN : Amazon Resource Number
- S3 URL
- Publish Static pages (Github pages)
- S3 Bucket
- Classification of storages : Standard (sec), Glacier (minutes), Glacier Deep Archive (hours)
- policies : 7 day

Server vs Serverless Architecture

Server : EC2
- EC2 = virtual machine = Windows, Mac, Linux, etc.
- Code -> build -> deployed on EC2 -> Live
- Machine + Compute power
- scaling

Serverless Architecture : Lambda Function
- Code -> submit
- you are not getting your own machine, but you will get compute power
- scaling : automatic

more Freedom? EC2
more Expensive? EC2
more Cold-start time? EC2
more time for Request? Lambda

Database :
- DynamoDB (amazon's MongoDB),
- RDS : Relational Database Service

Monitoring :
- CloudWatch : logging

Admin :
- IAM : users, Roles, policies

Other Services :
- Amazon Image Rekognition : Image : detect facial recognition, object,
- API Gateway : api routes linked with lambda
- Load Balancer : ELB (Elastic Load Balancer)
- Light Sail : Mini version of EC2
- Q Developer : like Co-pilot (Agent, Code completion)

Triggers : S3 and Lambda
- add trigger on S3 (.* or .txt) -> trigger my this lambda function
- example : add the image -> lambda function will run

AWS Educate

- https://www.awseducate.com/signin/SiteLogin?language=en_US
- free
- certification
- 2 features (videos + pdfs)
    1. Simulation : Screenshots
    2. Labs : EC2, S3, etc.