**Difference between GCP and AWS**

**Google Functions VS Lambda Functions**

* **Invoke**: Google Functions can be invoked directly. While Lambda Functions cannot. There should exist an API gateway between the client side and Lambda Functions
* **Invoke URL**: Google Functions are directly linked to an invoke URL and can be invoked directly. While the invoke URL in AWS is linked to the API gateway, an API gateway can be linked to several Lambda Functions. These functions are distinguished by stage. The benefit of having the API gateway is that you can have the same base URL for all Lambda Functions, while being able to manage each Lambda Function separately using stages.
* **Dependence**: Google Function proves a place where you can just list all the dependencies you need, and you are all set. In AWS, things are much more complicated. Developers will need to download all dependencies to their computer, zip them, and upload all the packages to AWS.
* **Connect to MySQL**: Google Function suggests using sqlalchemy, while Lambda Function suggests using pymysql
* **JSON Payload**: The Json payload in Google Function contains only the payload information sent from the client side. While the payload in Lambda Functions contains more information, and developers will need to parse the request body first to get the payload
* **Return status code**: In Google Functions, developers can just add the status code behind the payload and separate them with a comma. In AWS, developers need to return a json with specific format {‘statusCode’: 200, ‘body’: payload}

**Google Storage VS AWS S3**

* **Upload**: Google and AWS use different SDK, similar in logic, but different in semantics.
* **Download**: Google provides SDK to simplify the downloading process, while AWS doesn’t. Developers will need to implement the downloading file code themselves.
* **Access Control**: These two storages have different logic to make certain items public.

**Google SQL VS AWS RDS**

* **Setup:** In AWS, apart from setting up the database, developers also need to set up related VPC and security groups.
* **Exposed to Serverless Functions:** For Google Functions to have access to Google SQL, developers can just make it public. While in AWS there are lots of overhead, first you will need to enable VPC access for the Lambda function, during which you will assign it a Security Group. Then, within the Security Group assigned to the RDS instance, you will enable access for the Security Group assigned to the Lambda function

**Google Computing Engine VS AWS EC2**

* **General:** These two computing engines are pretty much the same, with some differences in setting and access control.