**COMP7940 Cloud Computing**

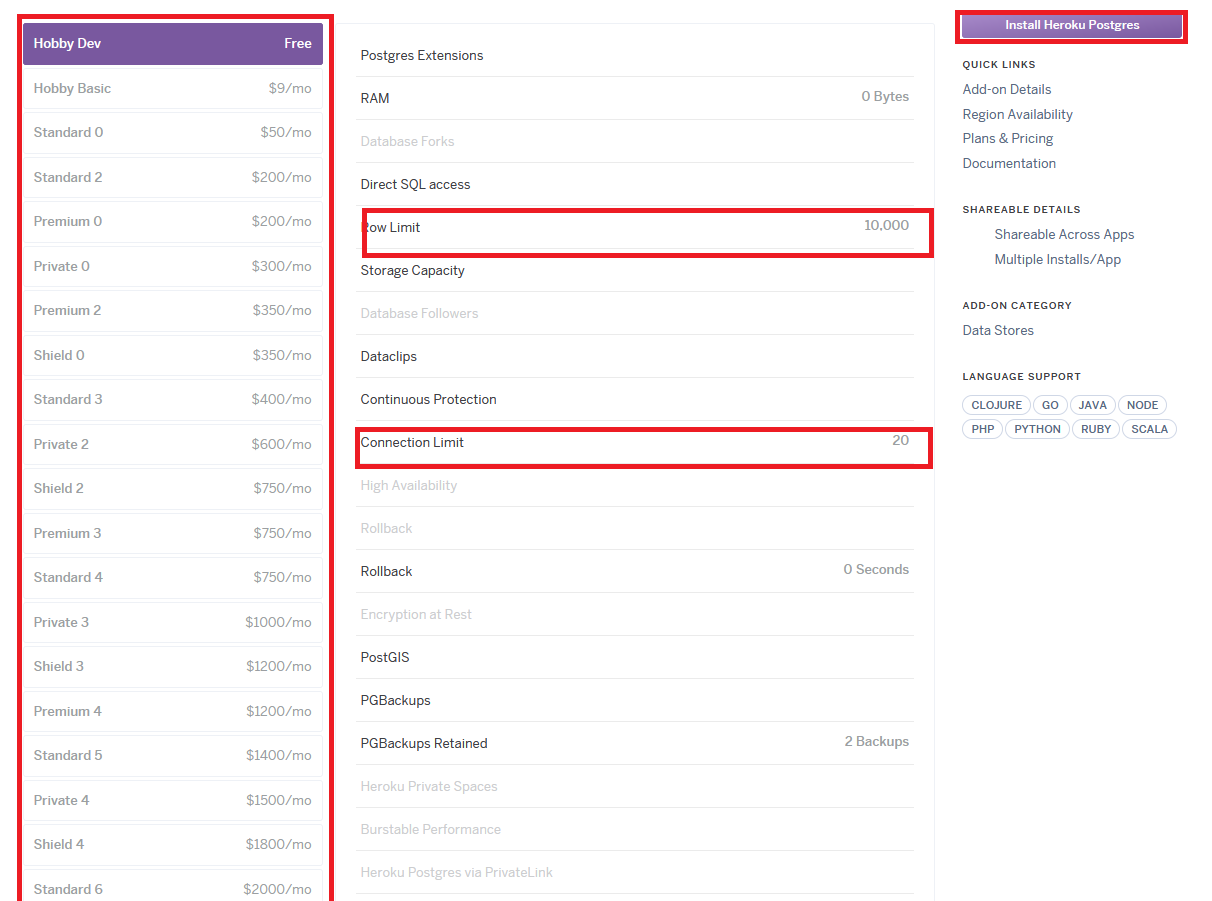
**Group Project Milestone 4**

15 April 2020

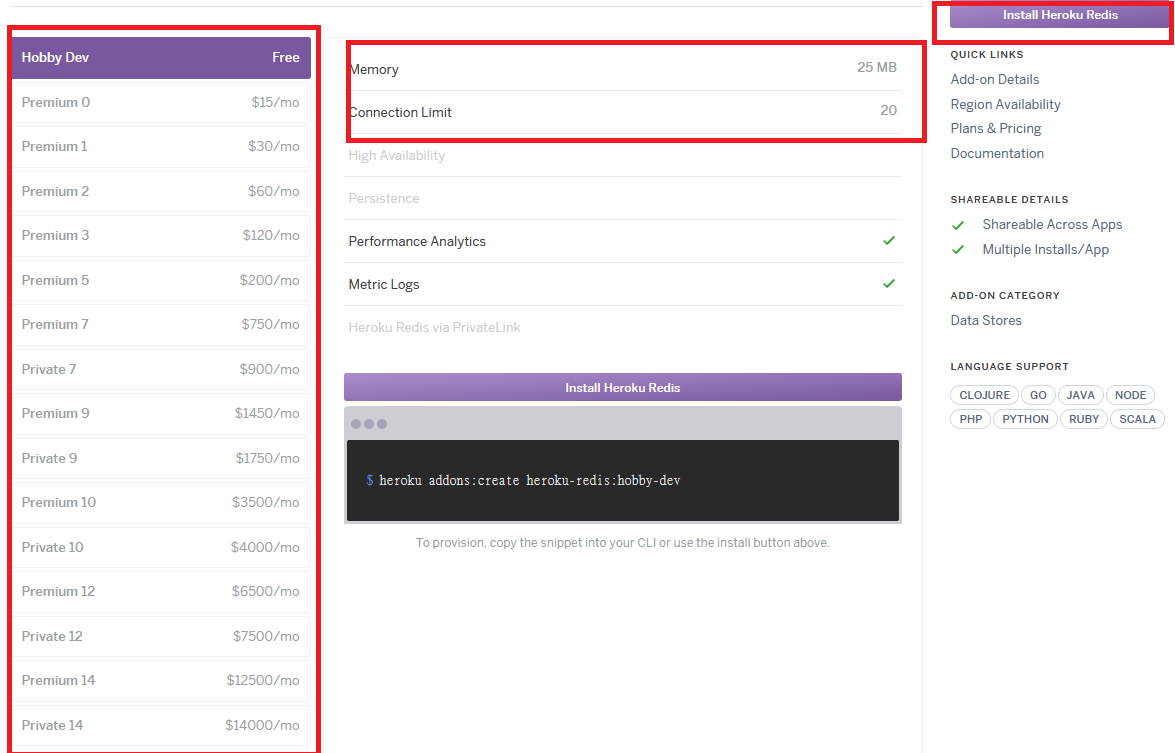
1. **How is your project architecture related to the theory taught in the lecture?**
2. **Can you demonstrate, with some screen cap, how to increase capacity of your chat bot service?**

The Line Bot currently has a few functions, including the query of a PostgreSQL database which stores location details of hospitals in Hong Kong, and query of Redis database, which a web scraper will periodically update with the latest number of confirmed, discharged, hospitalized and death cases in Hong Kong.

The service for PostgreSQL is provided by Heroku PostgreSQL, which divides its services into various plans. Basically, fees will be charged if there are more connections (i.e. number of users of the LINE bot acquires) and more instances that the database will store. It can easily be scaled up by subscribing charged plans, based on anticipated usage. The following is a screen cap for different plans and the simplicity of the scaling by only clicking the right plan and install:



Similar to PostgreSQL, the service for Redis is provided by Heroku Reis, which also divides its services into various plans. Basically, fees will be charged if there are more connections (i.e. number of users of the LINE bot acquires) and the memory consumed. It can be equally easy to scale up by subscribing charged plans, based on anticipated usage. The following is a screen cap for different plans and the simplicity of the scaling by only clicking the right plan and install:



[**Any scaling of other services??**]

1. **Can you identify if you bot is one of the example of PaaS, IaaS, SaaS? Explain your answer.**

The LINE bot is purely implemented on Heroku platform. Although Heroku is known to be a PaaS platform, other services are subscribed to the Heroku services, including Redis and PostgreSQL. So basically, the control of the operating system and middleware components of the LINE bot is rest with Heroku. This essentially lets Heroku be the SaaS service provider. However, when we implement some more other services from other sources, Heroku can still possibly become back to PaaS.

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