IT4090 – Cloud Computing
Semester 2, 2021
Individual Assignment – 15 marks

Create and deploy a simple application in Docker which supports following.

1. The application should have three tiers, a front-end tier, an application logic / API tier, a database tier.
2. Application logic / API tier and the front-end tier should be stateless containers with the ability to auto scale.
3. Database tier should be a stateful container.
4. Application logic can be any function which can be auto scaled.
5. In the front-end tier, you only need to focus on the functionality, no need to use complex front-end frameworks and UI/UX designs, a simple HTML/CSS application would be sufficient.
6. You can use any OS for Docker containers and you can use any publicly available docker image as the base of your containers.
7. You need to submit a README file containing the instructions to run the application and scale-in, scale-out docker containers.
8. You also need to submit a report with following.
    - Explaining the architecture of your application
    - Explaining the application logic / algorithm of your application / API tier.
    - Screenshots of your docker environment.

You also need to submit the source code including any dockerfiles, docker-compose files, application files, etc. as well.
Submit a soft copy of the report with the source code and the README file in a single zip (compressed folder) file through the courseweb.

You will be awarded 15 marks in total for this assignment.

- From that,
    - √ 5 marks will be allocated to the report.
    - √ 7 marks will be allocated to the application working as instructed in the README file and if the solution has followed all the requirements given above.
    - √ Last 3 marks will be awarded for creativity and going the extra mile to enhance your solution.
      You can use your imagination for this. For an example, you can make the database container fault tolerance by configuring it in a primary-secondary relationship with another container.