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Bachelor of Information and Communication Technologies

# Database Administration

## BCDE214

### Assignment Two

### Portfolio

### Semester Two, 2021

**Due date: Friday, 19 November 2021 with intermediate dates to be advised**

**Time: 5.00pm**

Instructions:

Hand in a zipped portfolio of scripts, screen shots and other documents as requested during the semester.

**TOTAL MARKS: 30**

Student Name/ID .....

*Ara and its faculty members reserve the right to use electronic means to detect and help prevent plagiarism. Students agree that when submitting this assignment, it may be subject to submission for textual similarity review to Turnitin.com.*

Submissions received late will be subject to a penalty of 10% of the student's mark per working day.

This paper has *three* (3) pages including the cover sheet.

## BCDE214 Database Administration Assignment 2– Portfolio Appendix C Database Functions and Spatial Data Analysis

**Due Date:** Friday 19 November; 11:59 p.m.

**(Total Marks 30)**

### 1 **Recovery** **(Marks 5)**

- (a) When does a DBA perform forward recovery? What are the forward recovery steps? Explain in detail. (2 marks)
- (b) If a transaction is interrupted, what steps does the DBMS take to correct the database? Explain in Detail. Show example with Roll back and Save point in MySQL. (3 marks)

### 2 **Covid 19 Vaccination Visualisation** **(Marks 10)**

The datasets provide up to date Data and statistics about the rollout of COVID-19 vaccines in New Zealand. Use the Covid 19 Dataset 1 and dataset 2 to create the following visuals using PowerBi, Python or any other visualisations tools.

- a) Vaccinations by group by week
- b) Total Vaccinations
- c) Cumulative vaccinations by ethnicity
- d) Vaccine uptake per 1,000 people by ethnicity
- e) Vaccine uptake per 1,000 people by age band

Data source : <https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-data-and-statistics/covid-19-vaccine-data#by-day>

### 3 **Covid 19 Location of Interest data** **(Marks 10)**

Locations of interest for people who may be contacts of COVID-19 cases in the community. Contacts who attended one of the locations in New Zealand during the relevant times are asked to follow the directions for that location.

Scrape relevant information from the following URL and plot a map to display locations of interest for people who may be contacts of COVID-19 cases in the community.

<https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-health-advice-public/contact-tracing-covid-19/covid-19-contact-tracing-locations-interest>

Do not use <https://raw.githubusercontent.com/minhealthnz/nz-covid-data/main/locations-of-interest/august-2021/locations-of-interest.geojson>

We want you to create the map from scratch.

#### 4 Spatial Query

**(Marks 5)**

Write a query that will:

Calculate Distance between any **two** locations (in Kms.) as provided in SQL file in the Zip folder. Test your query by providing at least **5** suitable test scenarios. Use the Zip.SQL file for this task. We recommend you use MySQL.