**Assessment task 2: Collaborative Development of an end to end project using Centralized Code Repositories + Github usage analysis and reflection of the project**

**Intent:**Is to tie all the pieces taught in this Subject together. Do an end to end analysis and collaborate as a team using Github. To analyse the github usage of the entire group and reflection of your own project in terms of what worked and what didn’t work.

**Objective(s):**

This task addresses the following subject learning objectives: 1 and 2

This assessment task contributes to the development of course intended learning outcome(s): 2.1, 2.2, 2.4, 3.3, 4.1 and 5.1

**Type:**Report/Code

**Groupwork:**Group, group assessed and Individual

**Weight: 30**% + 10%

**Criteria:**

1. Research on the effective data stores. And designing the datawarehouse appropriately. (Group), 20%
2. Using SQL/R/Python to do basic analysis. (Group), 20%
3. Clarity and why a certain programming language was chosen. (Group), 10%
4. Appropriateness of commits and branches to collaborate within a team using Git, adhering to one of the documented workflows. (Group), 10%
5. Clarity and efficiency of content review and change negotiation using Pull Requests, and successful incorporation of individual changes into the team’s master branch. (Group), 20%
6. Presenting and clearly communicating your findings as a report. (Group), 10%
7. Clarity on highlighting the individual and teams efforts on github usage.(Individual), 5%
8. Articulating what worked and didn’t work in during the course of the project. (Individual), 5%

# Introduction and research questions

1) Maximization on saving on electricity bill (domestic) / pay-off period

Solar energy Panel Generation - energy (MJ) by month, postcode / suburb / region

Normal electricity consumption

Government installation subsidy (one-off)

Feed-in tariff

2) Is it possible to pay $0 in electricity bill?

3) How latitude/climate influence solar radiation in Australia?

4) How much solar panels do I need to run my house entirely?

5) How solar energy could save your money? - mainly focus on some cities (e.g Sydney or Brisbane)

6a) How many kWh per standard PV module (residential panel 65’’ by 39’’ and commercial panel 78’’ by 39’’) could have been generated at BOM stations at ideal conditions (angled tilt)?

6b) How many kWh could have been produced by all modules installed in NSW and all were at those ideal conditions?

6c) How many kWh were actually produced?

6d) How much sustainable energy could be generated additionally if the density of solar panel users would be increase by e.g. 10%, 20% or 50%?

# Background

# Data collected

# Database setup

# Data warehouse design

# Data analysis

# Data visualization

# Discussion and Conclusion