ISA-PM-IPA-2021-01-09-IS02PT-GRP-Electricity Demand Response Alert System

**Electricity Demand Response Alert System (EDRAS)**

NUS-ISS Master of Technology (Intelligent System)

Individual Report for Project Work horizontal line

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# 1. Personal Contribution Summary

Below are the list of my contribution to the group:

1. Research on Power BI technicalities
2. Creation of Power Query from EMC website as Power BI web data source
3. Create the Power BI visualization to determine the current time, latest refresh time, and the 5 price points which are deployed as Power BI data trigger.
4. Creation of Power Automate flow to automate Power BI data alerts to trigger outlook email
5. Research on how to link Power BI with Python to enable Python Machine Learning model prediction to be created as data source in Power BI
6. Setup & Schedule Microsoft Team meetings to schedule project team meetings
7. Together with team: edit the project report, project presentation and video recording

# 2. Lessons Learned In This Project

Below are lessons learned during this project:

1. Teamwork is very very important. Each person in the team has been encouraging each other to contribute positively. Each of the team member’s strengths makes up for other team member’s weaknesses and at the end everybody is contributing towards the success of the project.
2. Technology components used in this project are very practical to learn. Power BI is part of my day to day work yet for this project I have got the chance to broaden the experience in knowing how to use Power BI to straight away get data from a public website and enable data alerts through the tiles in Power BI dashboard. The learning experience in Power Automate is also practical since Power Automate is a practical RPA technology from Microsoft which can enable automation in our day to day work. The other interesting knowledge that I gain during this project is on how to link Power BI with Python ML models and Python tag-ui scripts.
3. To be resilient and tough. Even with a full time job and COVID-19 situation, we can still complete our Practice Module and Workshops. Our team makes do with little time that we have and we still manage to pull this off. This makes us proud as a team and it enhances our team’s and self confidence.
4. The potential to commercialize this product (to set an entity as a service provider) has made me and the team excited to work on this project. Technically an entity can be set up to provide this service to alert potential customers to bid for energy saving and getting payment from the Singapore EMA (Energy Market Authority). The service provider can then get some percentage cut from the compensation paid. This is aligned with what we learn in MVP (Minimum Viable Product) concept.

# 3. Potential Application of Knowledge and Skill from This Project In My Workplace

Below are some potential applications in my workplace based on the knowledge and skill I have learned during this project:

1. The skills I learn from this semester’s modules will be very handy in my workplace since I am in charge of Data Warehouse and BI (which happens to use Power BI tool) and also RPA technology
2. Specifically on the automation part, power automate integration capability with email, telegram etc will enable many use cases that I can apply in my organization which requires alerting users for some critical or important KPIs (Key Performance Indicators) that our company users keeping track
3. The integration between Python and Power BI will enable so much potential for me to create practical ML models and present the data inside Power BI visualizations which are very intuitive.