## Overview

The Connected Office Initiative (COI) encapsulates the use of IoT devices within the network, placed all over the office building, to collect and share the data that these devices gather. The data can be shared in different ways. One of which is through visualisations built into a report or dashboard. These reports or dashboards can be shared with different stakeholders, potentially with different levels of access applied. The COI have been advised that a good way to monitor the usage of their IoT devices would be through a report.

The report will be built in Power BI, as the organisation already has all applicable licensing agreements in place with Microsoft, and the report is expected to allow all stakeholders to see the same information pertaining to the status of IoT device registrations on various platforms. As a member of the COI development team, you are expected to acquire and practise the necessary skills to create such a report.

## Requirements

Functional requirements refer to the functionality that a system must have and how the functions should be performed. Non-functional requirements refer to the aspects of a solution that have an impact on the quality attributes of a system (or platform). These non-functional requirements are deemed as supportive requirements to ensure that the functional requirements are implemented appropriately and according to good software practices.

*Please note: it will be important for you to keep the Overview Repository ReadME file updated throughout the semester as you will be evaluated on the content of the ReadME file as part of your Portfolio of Evidence (POE).*

| Feature | Stories | Tasks (to be broken down further) | Priority |
|---|---|---|---|
| GitHub Administration | Create and Configure GitHub Repository | Create a repository named 'CMPG 323 Project 5 - <add your student number>' | 1 |
| | | Create a ReadME.md file that will be used to describe your project and how stakeholders are to use the report that you have developed | 1 |
| | Project Progress | Ensure that the report has been committed and pushed to source control throughout the project | 1 |
| | | Ensure that the GitHub project has been updated iteratively throughout the project to demonstrate how progress was made | 1 |
| Project Setup | Create the Reporting Project | Clone your GitHub repository | 2 |
| | | Install Power BI Desktop | 1 |
| | | Create a new Power BI Report named 'Connected Office – Device Monitoring' | 1 |

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|---|---|---|---|
| | Configure the Report | Create a page named 'High-Level Metrics' | 2 |
| | | Create a page named 'Device Monitoring' | 2 |
| | | Create a page named 'Device Registration' | 2 |
| Data Connection | Configure the Connection to Data Sources | Create a live connection to the data sources that will be used as part of the visualisations to be created | 1 |
| | | Ensure that the data connection is secure | 2 |
| | | Ensure that the data sources are appropriately mapped, where necessary | 2 |
| | Implement Data Manipulation | Ensure that the datasets are cleaned and all duplicates are removed | 3 |
| | | Ensure that all imported data fields are associated to the correct data types | 3 |
| | | Create at least one calculated column to enhance the quality of your dataset | 2 |
| | | Create at least one key measure that will enhance the quality of your visualisations | 2 |
| Report Development | High-Level Metrics | Add a summary view that shows business stakeholders a high-level view of the 'important' data.<br><br>This generally would refer to counts of data points based on information that could impact decision making. | 1 |
| | Device Monitoring | Create a visual that allows the user to monitor devices per category | 2 |
| | | Create a visual that allows the user to monitor devices per category | 2 |
| | | Create a visual that allows the user to monitor online versus offline devices (status should depict whether a device is online or offline) | 2 |
| | Device Registration | Create a visual that allows the user to see how many devices have been registered over a timespan | 2 |
| | | Create a visual that allows the user to see how many categories of devices have been created | 2 |
| | | Create a visual that allows the user to see how many zones contain registered devices on a timeline | 3 |

| | | | |
|---|---|---|---|
| | Filtering | Make use of filters that can be applied across pages and visuals | 4 |
| | | Add a filter for users to filter the report based on device category | 4 |
| | | Add a filter for users to filter the report based on device platform | 4 |
| | | Add a filter for users to filter the report based on device zone | 4 |
| | | Add a filter for users to filter the report based on device registration date | 4 |
| Project Close-out | Project Documentation | Ensure that the ReadMe.md file in the GitHub repository explains how the user would use the report | 1 |
| | | Create a reference list document that contains all sites visited and used to complete the project | 1 |

# Reading Materials

There are multiple aspects of the abovementioned scope that may be covered by

- Introduction to Power BI: https://docs.microsoft.com/en-us/learn/modules/introduction-power-bi/
- Model Data in Power BI: https://docs.microsoft.com/en-us/learn/paths/model-power-bi/
- Power BI Best Practises: https://spreadsheeto.com/power-bi-best-practices/#:~:text=1%20Put%20first%20things%20first.%20This%20one%20is,with%20numeric%20data%2C%20use%20integers%20instead%20of%20strings.
- Storytelling in Power BI: https://powerbi.microsoft.com/en-us/data-storytelling/

# Community Engagement

There are many different communities available for you to engage with if you are experiencing any challenges or if you would like to learn more about the technology and possibilities of Power BI:

- LinkedIn Groups
- Stack Overflow
- Power BI Community User Groups
- YouTube Power BI Influencers

# Certification

If this project has caught your interest and you are keen on obtaining a Microsoft certification on Power BI development, take a look at the training (Power BI on Microsoft Learn | Microsoft

Docs) and the [Exam PL-300: Microsoft Power BI Data Analyst - Learn | Microsoft Docs](#) that you need to write and pass before becoming certified.

## Submission Details

The scope of this project has been issued as an **individual** assignment. Please note that you will need to use GitHub for this project.

**Please Note:** Ensure that your repository has been shared with the users **autoruby, JacquiM** and **marijkec** so that your project can be marked**.**

**Submission**: Submit your CMPG 323 Project 5 by providing the relevant information through the [Project 5 Submission Form](#).

**Deadline**: 17h00 on 5 November 2022 (please note there are no alternative or late submission dates – if you miss this deadline you will forfeit the opportunity)

**What to submit**:

1. Provide the URL to your GitHub Repository
2. Credentials to connect to your data source(s)
3. Provide the URL to your report (if hosted online)
4. Provide your reference list file

## Marking Considerations

Please take note of the following considerations that will form part of the marking and moderation process:

- A rubric will be provided separately
- Failure to upload any of the requirements for submission will result in 0
- Failure to complete this as an individual assignment will result in 0
- Failure to use Power BI will result in 0.