Log of tested solutions

Project BCI Global Data Cleaning

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| Executed by: | Date: | Task/Goal: | Context: (files/scripts) |
| Jeron | 20/11/2023 | Create a document for keeping track of our Tested solution | Log of Tested solutions: Github |
| Key points: | | | |
| * Format * Different kind of information: who, when, what, why. | | | |
| Conclusions: | | | |
| * Using this document will help us keeping track of all solution we have explored | | | |
| Sources: “Apa source” | | | |

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| Executed by: | Date: | Task: | Context: (files/scripts) |
| Antonella and Max | 13-11-2023 | Python Scripts for file Integrity Check | Integrity Check Parcel File+Sales Order Anonymized.ipynb  Product Master + Interfacility - Integrity checks.ipynb |
| Key points: | | | |
| * 2 Python Scripts that both do integrity checks for the different received data files such as:   + Share of negative values   + Report for textual and ID Columns   + Report for Numerical Columns | | | |
| Conclusions: | | | |
| * Both scripts are applicable to any future files. However They do Require user input to know which columns in the dataset might be “ID” columns instead of numerical for example | | | |
| Sources: | | | |

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| Executed by: | Date: | Task: | Context: (files/scripts) |
| Antonella | 21-11-23 | Test Great Expectations Library | Test/Great Expectations test script.ipynb |
| Key points: | | | |
| * Tested Great Expectations Library on python notebook. * Didn’t figure out the use of batches * Didn’t figure out how to set expectations | | | |
| Conclusions: | | | |
| * We could re-explore this option if we think it could actually be useful for the client and if it is the simplest of the proposed solutions * It might be too big and complex of a solution for the kind of data we are using | | | |
| Sources:  <https://docs.greatexpectations.io/docs/> | | | |

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| Executed by: | Date: | Task: | Context: (files/scripts) |
| Antonella | 29-11-23 | Test pydqc library | File:test/pydqc\_test |
| Key points: | | | |
| * Generates Friendly Excel Files * The library is able to make plot of numerical columns * It can also make comparisons and compare consistency between tables * Requires a little human intervention for defining the column types in Excel | | | |
| Conclusions: | | | |
| * It’s good for summarizing data, but still haven’t figured out the consistency and comparison checks as it requires more than one table. | | | |
| Sources:  <https://github.com/SauceCat/pydqc/tree/master> | | | |

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| Executed by: | Date: | Task: | Context: (files/scripts) |
| Jeron | 29-11-23 | Test Soda Library |  |
| Key points: | | | |
| * Soda Core executes the checks to find invalid, missing, or unexpected data. * Manual selection * Works with SQL | | | |
| Conclusions: | | | |
| * Its fine for checking for missing data but is a lot of manual input when using different databases. Also is primarily focussed on missing data. | | | |
| Sources:  <https://github.com/sodadata/soda-core> | | | |

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| Executed by: | Date: | Task: | Context: (files/scripts) |
| Antonella | 13/12/2023 | Normalize city names (version 1) | City normalization.ipynb |
| Key points: | | | |
| * Created 2 Python functions:   + Clean\_and\_standardize\_cities: this function standardizes cities based on whether they have the same postal code. It removes any weird characters such as dots, commas, dashes, etc. to reduce the amount of cities with different names. It’s not completely fool proof as a lot of cities still remain with different names.   + Find\_similar\_cities: based on textual similarity, this function prints how similar city names are to each other (provided they are in the same country) * This was done with 2 datasets that contain City, Country and Postal Code information: Customer Master Anonymized and Facility Master Anonymized | | | |
| Conclusions: | | | |
| * This solution is not completely fool proof yet. It might be a good idea to create a new dataset for all the cities (standardized) such as this one: <https://pkgstore.datahub.io/core/world-cities/world-cities_csv/data/6cc66692f0e82b18216a48443b6b95da/world-cities_csv.csv> and based on this give each city a unique name. | | | |
| Sources: | | | |

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| Executed by: | Date: | Task: | Context: (files/scripts) |
| Antonella |  | Normalize city names (version 2) | Standardize\_cities.py, cities\_API |
| Key points: | | | |
| * Extracted a portion data from OpenSoft API with Python. This contains data from all cities in the world, including postal codes. * Sandardize\_cities.py references the postal code from the dataset extracted “[All\_Gathered\_Cities.py](https://drive.google.com/file/d/1grCOTOmbYUkKC7AaUe-2GaVizJIR_9TQ/view?usp=drive_link)” and uses it to make it so the city names are standardized | | | |
| Conclusions: | | | |
| * The extraction of cities through the API takes time, the extracted file isn’t complete as it still requires some manual revisions to ensure that the API has extracted all relevant cities, and find out why it hasn’t for the non-extracted ones * The API dataset city names may be in the local language of the country * The client could use their own dataset of normalized city names with their postal code to reference in the future. | | | |
| Sources: | | | |

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| Executed by: | Date: | Task: | Context: (files/scripts) |
| Sophie Hu | 3 December 2023 | Research AI add on in Excel | No file |
| Key points: | | | |
| * After few considerations, we chose the company ‘Arcwise’ as 3rd party company recommendation for BCI Global. * Arcwise is user friendly, works with Google sheets only, has many AI functions. * Arcwise is used by over 100,000 companies. * Arcwise contains the following functions: ‘Ask AI question about your spreadsheet’, ‘Clean data with AI, ’Guess the formula for the current cell’, ’Use AI to help write a formula’, ’Scrape data’. | | | |
| Conclusions: | | | |
| * Potential AI 3rd party company to use, dive deeper research on the pros & cons, and its limitations. | | | |
| Sources: | | | |

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| Executed by: | Date: | Task: | Context: (files/scripts) |
| Sophie Hu | 20 december 2023 | Logistic Regression for ‘Customer Master’ Dataset | No file |
| Key points: | | | |
| * After figuring out how to implement the logisitic regression model onto ‘Customer Master’ dataset with different approaches and codes, the reliability of the imputation for missing data remains unreliable (14%) * Because we discovered it was reliable, the reasons were due to the logistic regression counting on other (limited) categorical columns which limits the reliability of the model | | | |
| Conclusions: | | | |
| * We came to the conclusion we needed geographical information for imputation to make the imputation as reliable and accurate as possible. By achieving this, there needs to be different method implemented, which random forest was concluded as ideal. | | | |
| Sources: | | | |

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