**User Manual: Scorecard Monitoring**

**Prerequisites**

Before using the scorecard function, ensure that you have the following:

* Python installed on your system.
* Necessary libraries installed.
  + pandas
  + numpy
  + matplotlib.pyplot
  + seaborn
  + pptx

**Procedure**

* Create excel file with the required data sheets:
  + Application development (AppDev)
  + Application monitoring (AppMon)
  + Performance development (PerDev)
  + Performance monitoring (PerMon)
  + PSIDev
  + PSIMon
  + KSGini
  + Characteristics (Each characteristic will be split into its own sheet name)

Example:

A close up of a computer screen

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* Refer to “Data Example” in SharePoint for an example.
* AppDev, PerDev, AppMon, and PerMon can be left blank if no data is provided by the client.
* Characteristics within the file should be in chronological order that match the column order within AppDev / AppMon
* In the scenario where the development data for population stability or characteristics is already derived and requires manual input, follow these instructions:
  + Leave the AppDev section empty and manually input the values in PSIDev.
  + Leave the PerDev section empty and manually input it in the characteristic sheets.
  + Data that is empty or has no value should be represented as "Null."
  + Refer to “Data Example” in SharePoint for an example.

* From SharePoint save the Qarar Template (PPTX format) in any specified folder.

**Dataframes**

To prepare the required dataframes, follow these steps:

* The application data should adhere to the following structure, where the column names are written in camel case:

A picture containing text, screenshot, font, number

Description automatically generated

* applicationReference, clientID, scorecardReference, bureauScore, finalDecision are not mandatory.

* The performance data should adhere to the following structure, where the column names are written in camel case:

A table with numbers and letters

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* balance, arrears are not mandatory.

**Import Code**

Download “MOSP.py” from GitHub and save the file in the same directory as the Python script.

Run the following code to call the functions from the MOSP file:



* Once the excel file has been prepared, you can load it into the console using the following step:



**Bins**

Define the bin ranges for categorizing numerical variables in the scorecard. The bin ranges should be specified as a list of strings, where each string represents a bin range.

Example:



**Characteristics**

Define the mapping of variable codes to their corresponding names. The characteristic mapping should be specified as a dictionary, where the keys are the variable codes, and the values are the variable names.

Example:

A close-up of red text

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**Function Usage**

To generate the scorecard, use the "scorecard" function with the appropriate inputs. The function takes the following arguments:



* file: client data.
* bins: List of bin ranges.
* months: Number of months to focus on for data when looking at performance information.
* delinquency: Maximum number of past dues to consider when looking at performance information.
* name\_dict: Characteristic mapping dictionary.
* file\_name: Output file name for the scorecard in PPTX format.

Example:



A screenshot of a computer

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**Further Work**

Peer review required to validate the following metrics: KS, GINI, IV and WOE.