Retail Proof of Concept

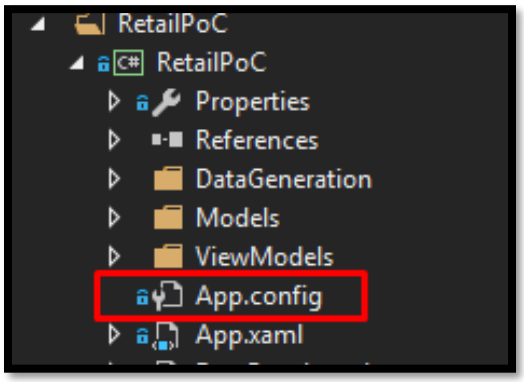
useAIble

Running the App

1. For you to be able to run the application, you will need the following:
    a. Windows 64-bit
    b. SQL Server
    c. Python 3.5
    d. pypiwin32
    e. pythonnet
    f. Tensor Flow
2. The last 3 components are installed by accessing the Python script folder through command prompt and entering the command pip install <component>

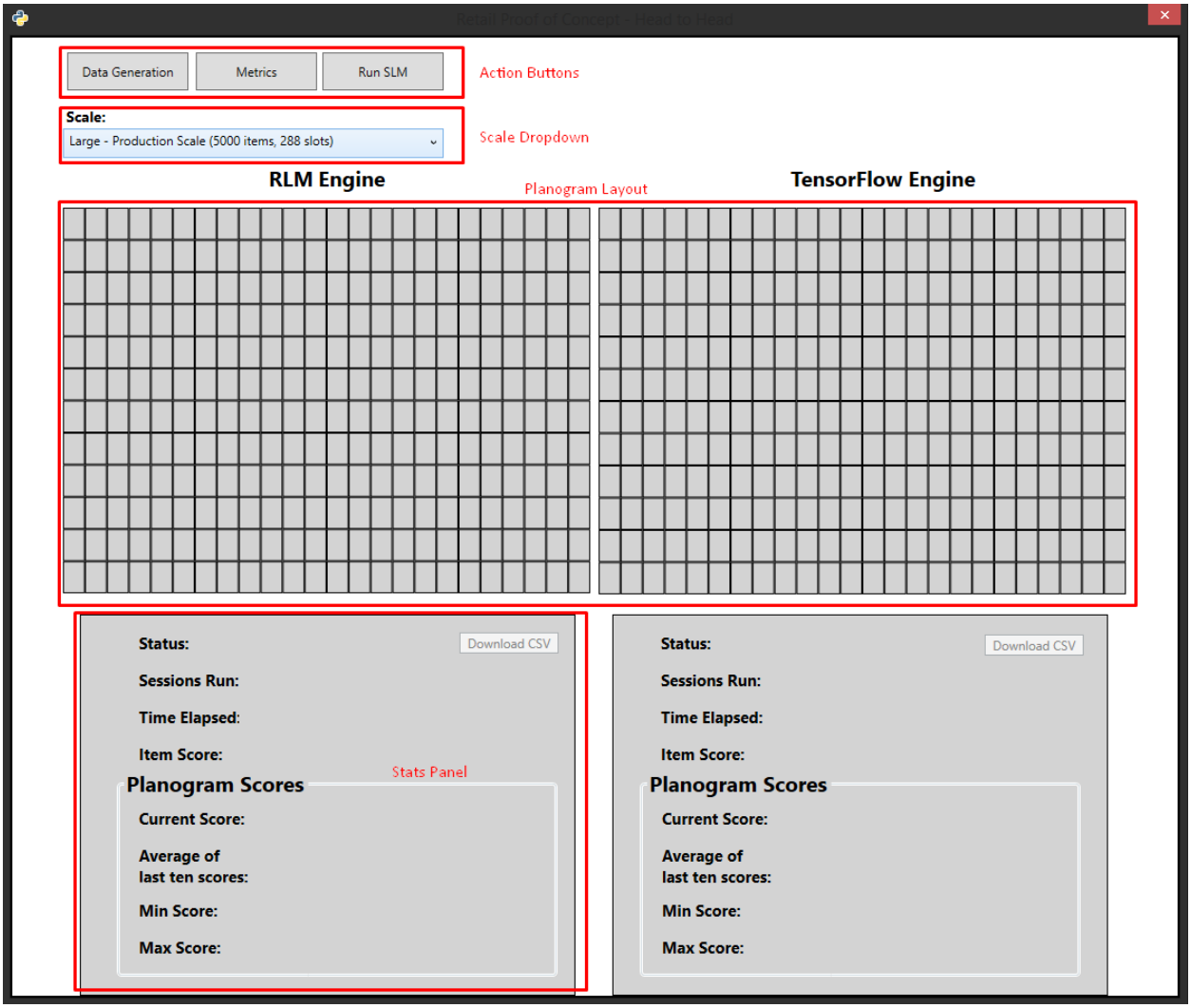
3. By default, the SQL Connection strings are configured to your local SQL Server and uses integrated security. In the event that you are not, you can setup the connection strings through the ConfigFileManager.py File.
4. This application relies on your registry to find python. If it's not installed or you're using a portable version, we will also need to copy the app config manually, located at the project directory, shown below, to the Python directory, usually at C:\Users\youUserName\AppData\Local\Programs\Python\Python35

5. Once the above steps are done, rebuild the code.
6. You can find 2 components for the App
    a. The C# One for the RLM (This is needed by the python Tensor Flow App)
    b. The Python one for Tensor Flow
        - The goal is to be able to compare both engines seamlessly
7. The RetailPOC App to test the RLM only can be found under ExampleApps
    a. By default, this doesn't copy the settings you set on ConfigFileManager.py mentioned on step 3. If you are going to use this app to test just the RLM, you will need to configure it's connection strings via the app config file.



8. The RetailPOC_TensorFlow can be found under CompetitorComparableApps Folder
9. You will need to set any of the 2 as startup project to run them.

Parts of the Main Screen



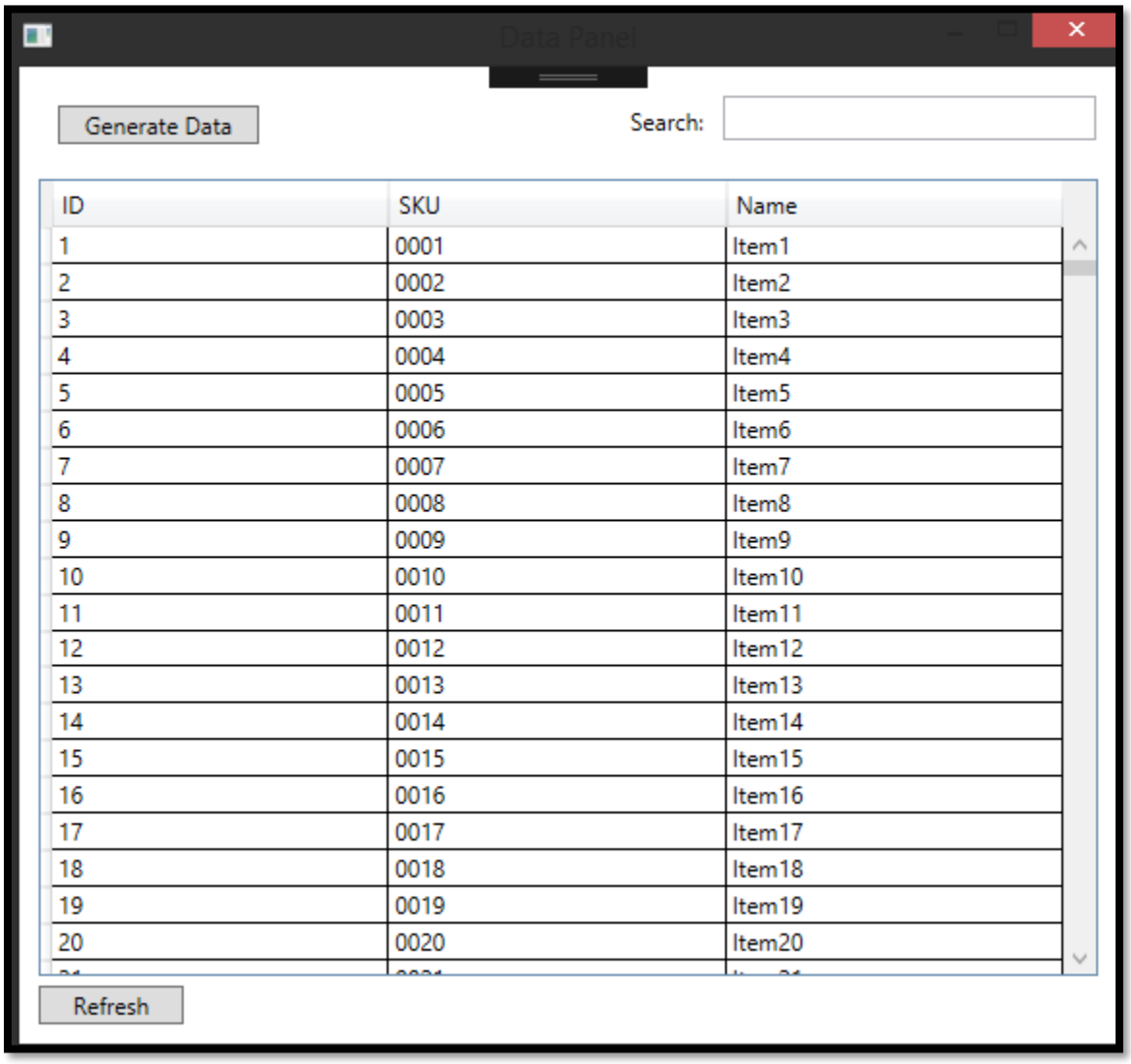
1. Scale dropdown – allows you to select the size of your planogram layout. This is useful to test engine's learning faster in a smaller dataset. Changing size will prompt you to generate data.
2. The Planogram Layout – shows the current placement of items on the planogram shelves.
3. Action Buttons – buttons that direct the user to specific actions in optimizing a planogram
4. Stats Panel – information panel that displays the statistics of the last training done.
    a. Score – the training score of the last training
    b. Sessions Run – the number of sessions done
    c. Time Elapsed – the total time elapsed of the training
    d. Item Score – shows the score of the hovered on the planogram layout. This shows the raw score and beside it is the percentage of it from the range of scores of all items on the layout.

    e. Planogram Scores
        i. Current Score – the score of the latest session
        ii. Average Score – the score average of all the training sessions done with the current data set
        iii. Minimum Score – the lowest score of all the session's combined
        iv. Maximum Score – the highest score of all the session's combined
5. Download Report Button – downloads a csv file of the statistics for each session.

Generating Mock Data

1. Click on the Data Generation Button.
2. You'll be directed to the Data Panel as shown in Figure 2

Figure 1

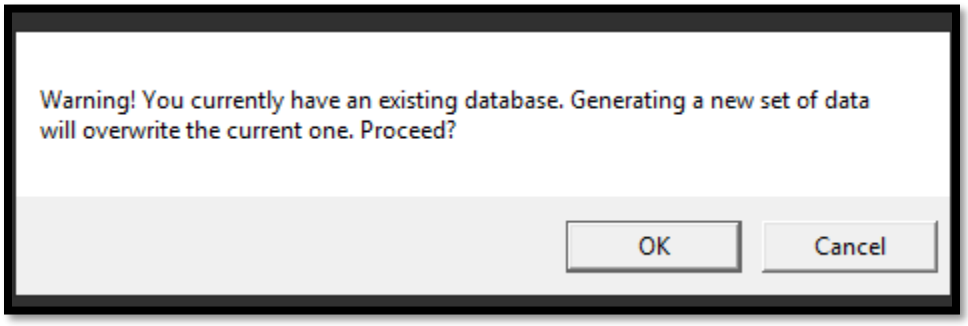


The Data Panel

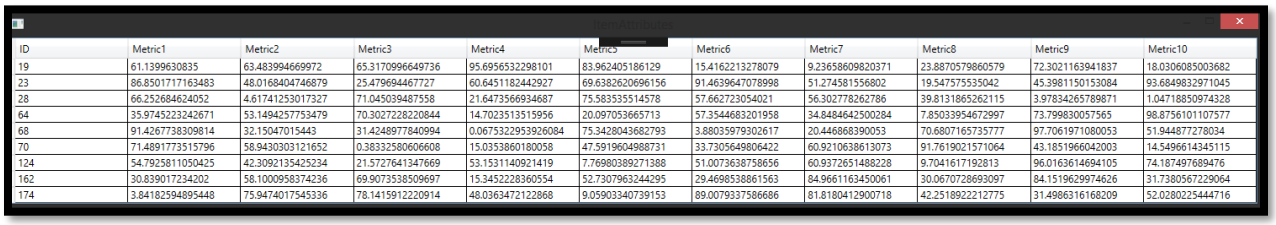
Using the Data Panel, you can also query an item's attributes through the available search bar located at the upper right. You can do a query using the SKU or the name.

3. Click on Generate Data.
4. If you already have an existing data set, there should be a warning to tell you that it will be overwritten if you push through with a new generate data process. See Figure 3.

Figure 2



5. If you Double click an Item Row, it should show you the metrics for that item. See image below.

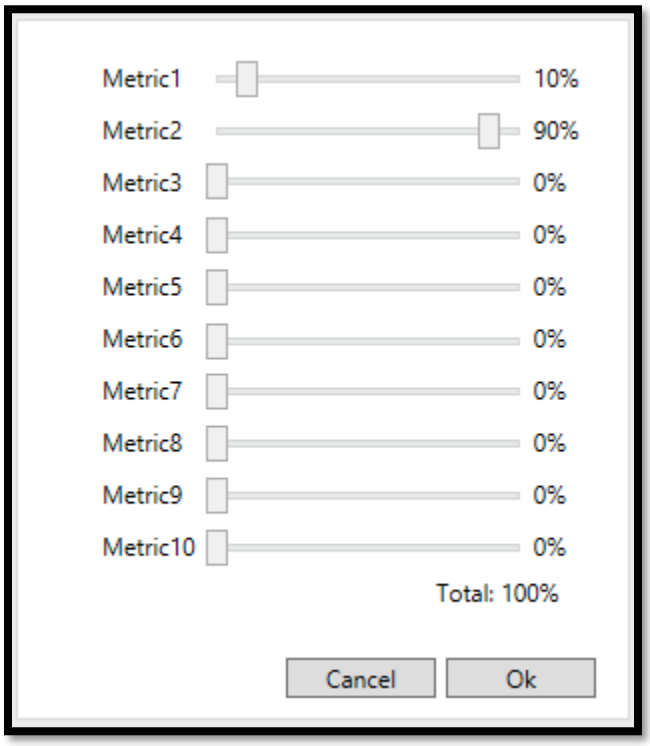


ID	Metric1	Metric2	Metric3	Metric4	Metric5	Metric6	Metric7	Metric8	Metric9	Metric10
19	61.1399630835	63.483994669972	65.3170996649736	95.6956532298101	83.962405186129	15.4162213278079	9.23658609820371	23.8870579860579	72.3021163941837	18.0306085003682
23	86.8501717163483	48.0168404746879	25.479694467727	60.6451182442927	69.6382620696156	91.4639647078998	51.274581556802	19.547575535042	45.3981150153084	93.6849832971045
28	66.252684624052	4.61741253017327	71.045039487558	21.6473566934687	75.583535514578	57.662723054021	56.302778262786	39.8131865262115	3.97834265789871	1.04718850974328
64	35.9745223242671	53.1494257753479	70.3027228220844	14.7023513515956	20.097053665713	57.3544683201958	34.8484642500284	7.85033954672997	73.799830057565	98.8756101107577
68	91.4267738309814	32.15047015443	31.4248977840994	0.0675322953926084	75.3428043682793	3.88035979302617	20.4468683900053	70.6807165735777	97.7061971080053	51.944877278034
70	71.4891773515796	58.9430303121652	0.38332580606608	15.0353860180058	47.5919604988731	33.7305649806422	60.9210638613073	91.7619021571064	43.1851966042003	14.5496614345115
124	54.7925811050425	42.3092135425234	21.5727641347669	53.1531140921419	7.76980389271388	51.0073638758656	60.9372651488228	9.7041617192813	96.0163614694105	74.187497689476
162	30.839017234202	58.1000958374236	69.9073538509697	15.3452228360554	52.7307963244295	29.4698538861563	84.9661163450061	30.0670728693097	84.1519629974626	31.7380567229064
174	3.84182594895448	75.9474017545336	78.1415912220914	48.0363472122868	9.05903340739153	89.0079337586686	81.8180412900718	42.2518922212775	31.4986316168209	52.0280225444716

Setting up the Metrics

1. Click on the Metrics Button
2. You'll be directed to the Metric Panel where you can set the weights of each Metric through Sliders as shown on Figure 4.

Figure 3

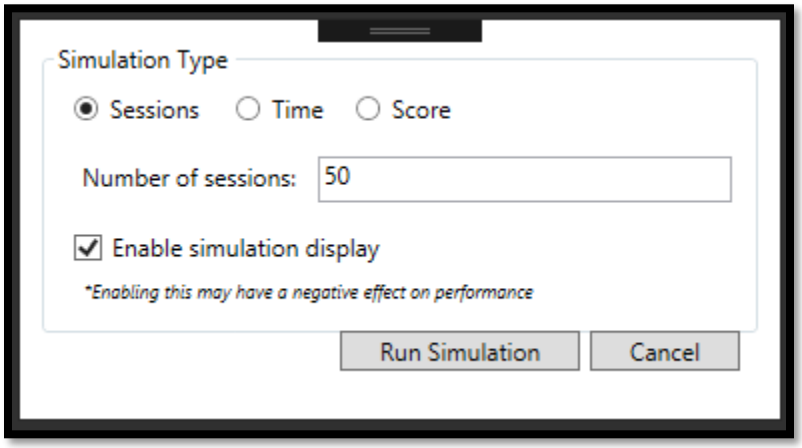


3. The Metric total weight should always be a hundred. In order to move some metrics, you'll need to lower the others to give more weight to one.
4. Once you click okay, the new metrics will apply to all future simulations unless changed.

Running a Simulation

1. Click on the Run SLM Button
2. You'll be directed to the Simulation Panel as shown on Figure 5.

Figure 4



3. Checking the Enable Simulation Display Checkbox will allow the user to see the engine fill up the slots with items as it goes through training, however, this will make the optimization slower.
4. Setting Simulation Type to Sessions, should prompt the user to enter the number of sessions. This will dictate how many sessions the engine will run.
5. Setting Simulation Type to Time allows user to enter the number of hours that the engine will run.
6. Setting Simulation Type to Score allows user to enter the score of which the engine will continue running until it reaches the set score for 10 Consecutive Times.
    a. Clicking on the Max button will set the target score to 80% of the total possible score.
7. After running the simulation, you should get a message to confirm that is done as shown on Figure 6.

Figure 5