**Qlik AutoML – Loan Risk Demo**

These instructions are for Qlik internal use only and aimed at helping Solution Architects setup and present the demo.

Pre-requisites

* Qlik Cloud tenant with the **Scale Up** AutoML tier.
* [QVD files and Qlik Sense app](https://qliktechnologies365.sharepoint.com/:f:/s/ANZPresales248/EhEmtipwZT1NlZJqIVmkPVkB-LZ1nUEeG2GozyrYjFXfHQ?e=guVVIf) for this demo.

Setup

1. Upload data files (*Loan Risk Train\_V1.qvd* and *Loan Risk Test\_V1.qvd*) to the tenant.
2. Upload the demo app (*Loan Risk V1.qvf*)to the tenant.
3. Create a new ML experiment using *Loan Risk Train\_V1.qvd* as the training dataset.
4. Select LOAN\_DEFAULT\_RISK as the target.
5. Deselect the following features:
   1. SK\_ID\_CURR
   2. LogAMT\_CREDIT
   3. FLAG\_OWN\_REALTY
   4. NAME\_TYPE\_SUITE
   5. FLAG\_WORK\_PHONE
   6. FLAG\_CONT\_MOBILE
   7. FLAG\_PHONE
   8. WEEKDAY\_APPR\_PROCESS\_START
   9. HOUR\_APPR\_PROCESS\_START
   10. REG\_REGION\_NOT\_LIVE\_REGION
   11. REG\_REGION\_NOT\_WORK\_REGION
   12. LIVE\_REGION\_NOT\_WORK\_REGION
   13. REG\_CITY\_NOT\_WORK\_CITY
   14. LIVE\_CITY\_NOT\_WORK\_CITY
   15. EMERGENCYSTATE\_MODE
6. Confirm that the experiment configuration matches the own shown below:

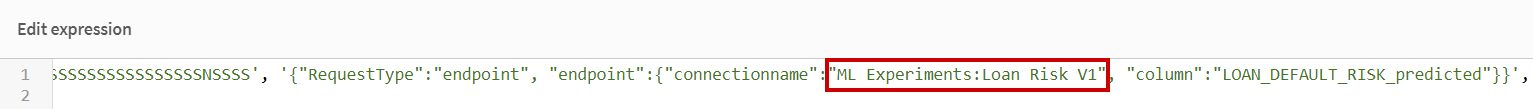
Graphical user interface, text, application

Description automatically generated

1. Run the experiment and deploy the top model. Ensure the Real-time API option is selected.
2. Navigate to Space details > Data Sources and add a new connection for the deployed model:

Graphical user interface, application, email

Description automatically generated

1. Open the *Loan Risk V1* app, duplicate the What-if Analysis sheet and go to Edit mode (Advanced options).
2. Navigate to the bottom of the Master Measures and update the *What-if Risk Prediction* and *What-if Risk Proability* expressions with the correct space and connection name:
3. Return to Analysis mode and use the bookmark *What-if Scenario* to test that the app can get real-time predictions from the model:

Chart, scatter chart

Description automatically generated

Demo Flow

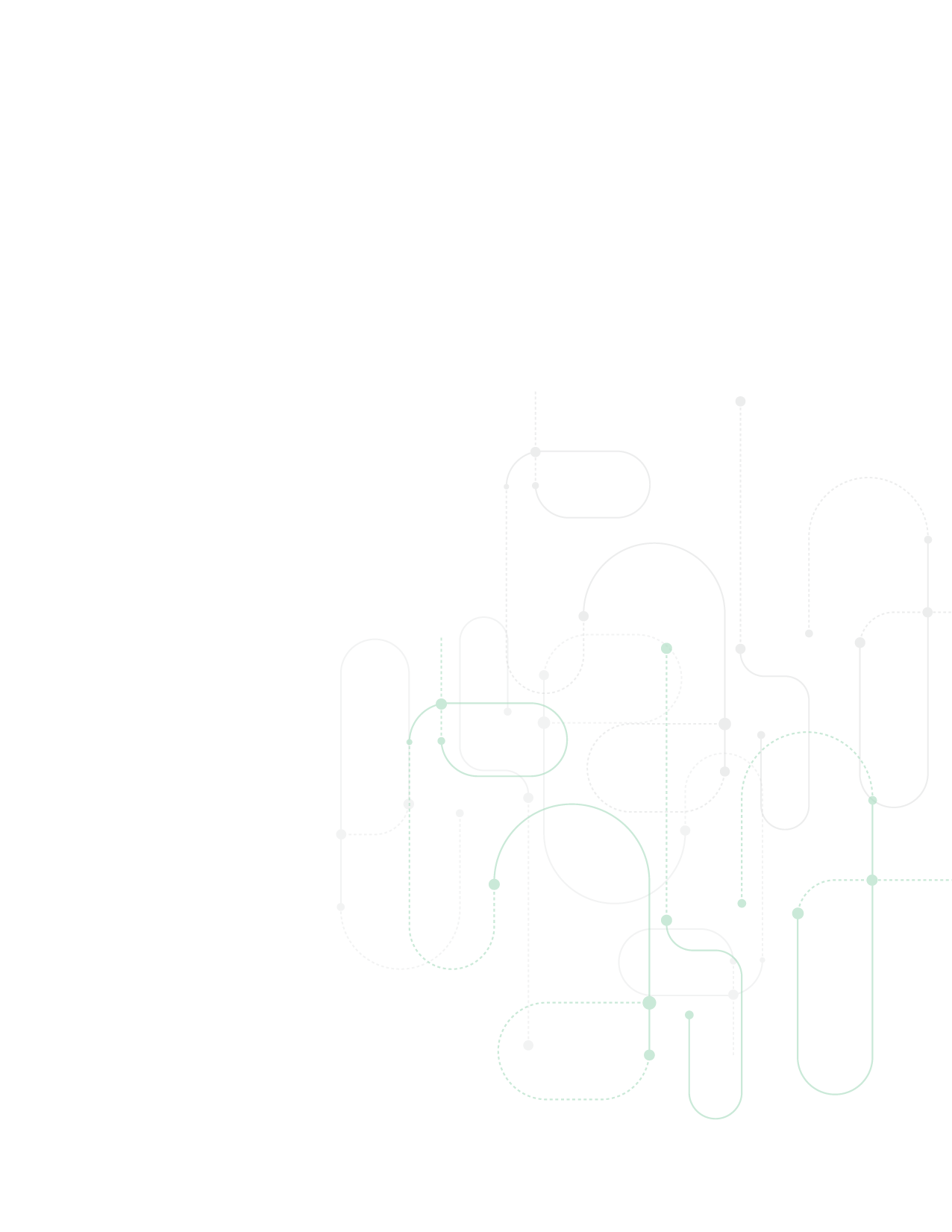
Suggested high level flow:

1. Position AutoML as machine learning for analytics teams.
2. Describe the use case for the demo: Predicting the credit default risk for loan applications at a financial institute. The predictions are being made at the point that the application is being reviewed by the institute and correctly identifying and possibly mitigating risk can have a significant impact on the business performance.
3. Demonstrate the ease of creating a new ML experiment.
4. After the model begins training switch to a pre-trained model and walkthrough the metrics, feature importances and confusion matrix (model training takes a few minutes so using a pre-trained model is recommended).
5. Deploy the model and highlight how easy it is to deploy models to Production. Contrast with open source and more complex solutions.
6. Demonstrate the Qlik Sense app. Start in the Analysis sheet and explore the data. Describe how an analyst cannot possibly find the complex patterns across dozens or even hundreds of variables in the way that a machine learning algorithm can.
7. Explore the Key Driver Analysis sheet. Point out top positive and negative influencers. Emphasise how understanding key drivers that directly impact a business outcome is one of the most significant benefits of a machine learning model.
8. Select a key driver and scroll down understand the relationship between the feature and loan risk at a more granular level. Explain how SHAP values indicate the model weightage of different features in making predictions. These values are available at an individual loan application level. Such analysis allows the business to understand the levers they can use to get to better business outcomes.
9. Navigate to the Credit Risk Predictions sheet. Describe how predictions can be brought into a Qlik Sense app as part of a reload. Explore the predictions describing how an analyst would generally want to ask questions and drill down to a specific subset of data for further analysis. On the scatter plot select loans over 1M in Credit Amount and with a Credit Risk Probability between 45% to 60%. Loan applications with a risk over 60% are likely to be rejected, but perhaps the analyst can consider ways to reduce the risk for this subset of loans.

Chart

Description automatically generated with medium confidence

1. With the subset of loan applications selected, navigate to the next sheet. A bookmark called *What-if Scenario* is available in case you lose your selections.
2. Demonstrate how the analyst can perform what-if analysis in realtime. The scatter plot on the left shows the original predictions and the scatter plot on the right takes into consideration variables at the top of the sheet. Reduce the credit amount to 1000000 and see how the risk probability changes for the loan applications on the right. Change the interest rate by a small amount and point out further changes. Point out that based on the key driver analysis a business can find the best levers that they have for influencing the desired business outcome.
3. Scroll down and sort the table by the *What-if Default Risk Probability* in descending order. This table highlights how the risk profile for these loan applications can be improved. Point out the difference in the original and the what-if probability. These changes represent a a clear business benefit. Highlight how this final piece of the demonstration takes us from predictive to prescriptive analytics.
4. Wrap up by summarising differentiators of Qlik AutoML and deployment options.





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serves over 38,000 active customers around the world.

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