Cortex
ANALYTICS SIMULATION

How to play Cortex on SAS Viya

ROUND 1

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Serious games to learn enterprise systems and business analytics

Last Update: July 24, 2020

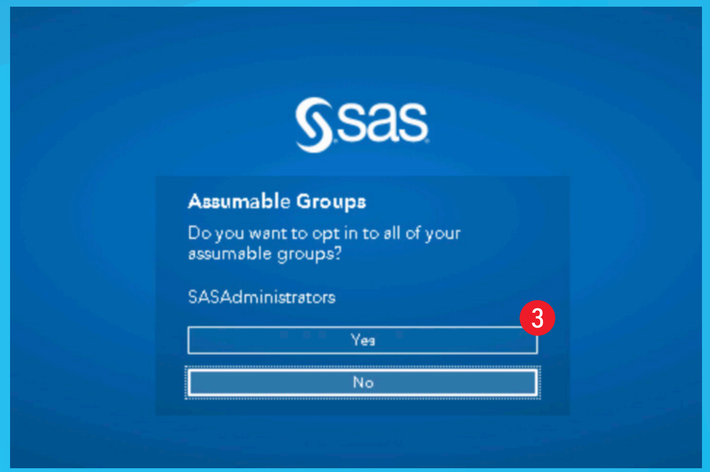
Access SAS Viya

1. On your desktop, click on ‘Cortex Model Building’ icon
2. Enter your User ID and Password*
3. Select ‘Yes’ when asked about ‘Assumable Groups’

** Please use the following user ID and password unless otherwsie specified by your instructor:*

User ID: *student*

Password: *Metadata0*



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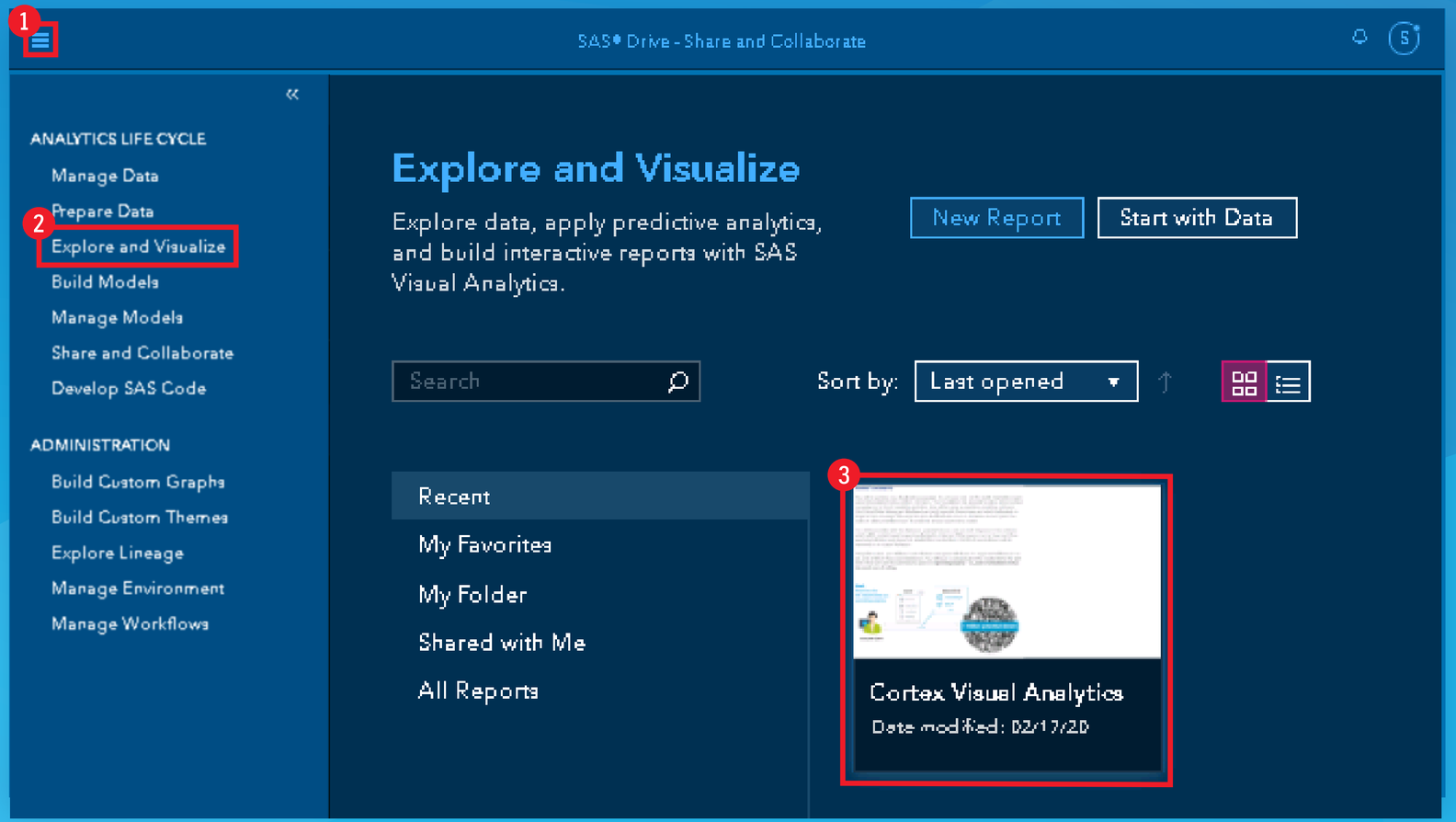
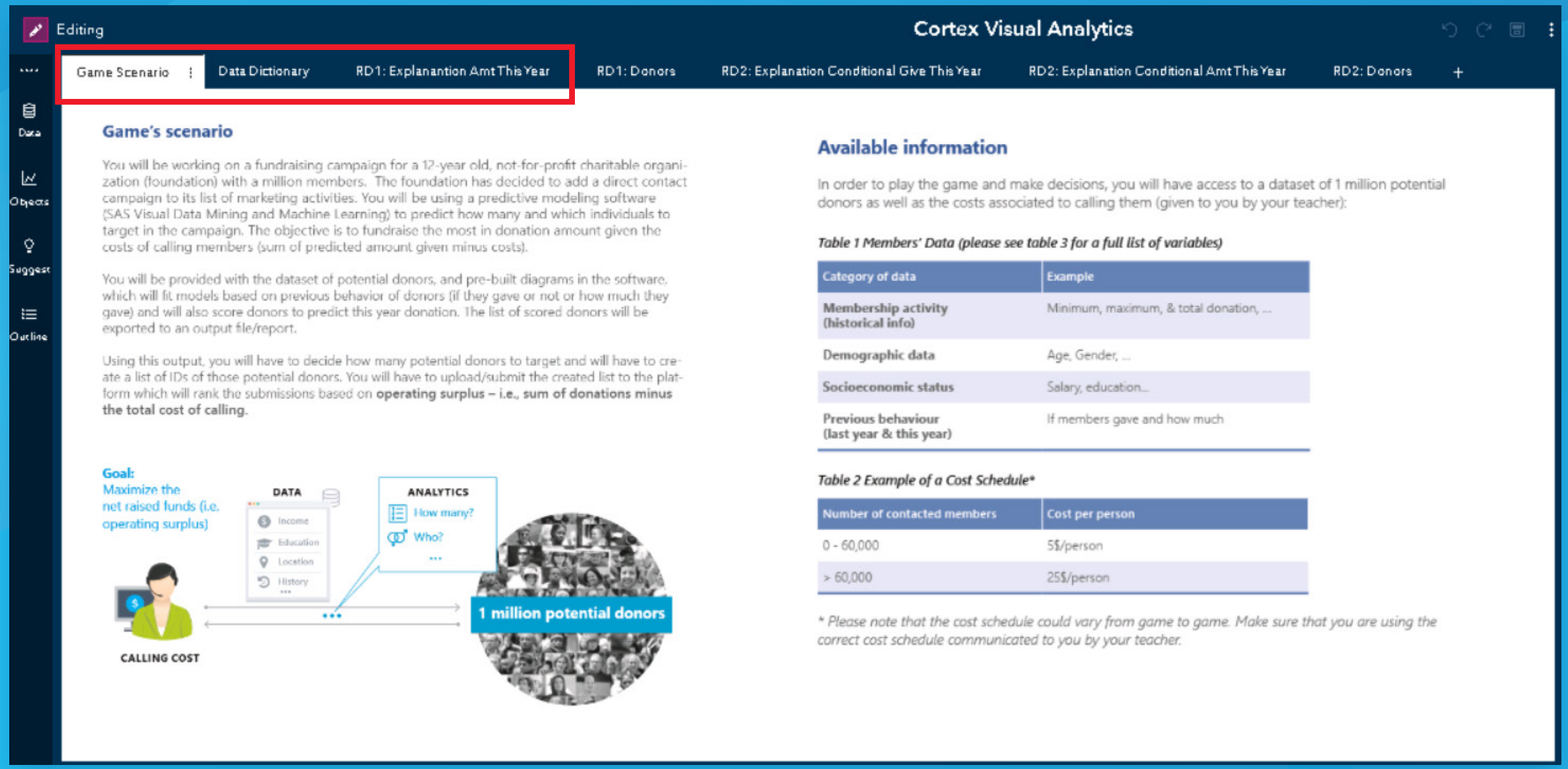
Explore the Game

1. In SAS Drive, click on the hamburger icon at the top left corner
2. Select ‘Explore and Visualize’
3. Double click on ‘Cortex Visual Analytics’

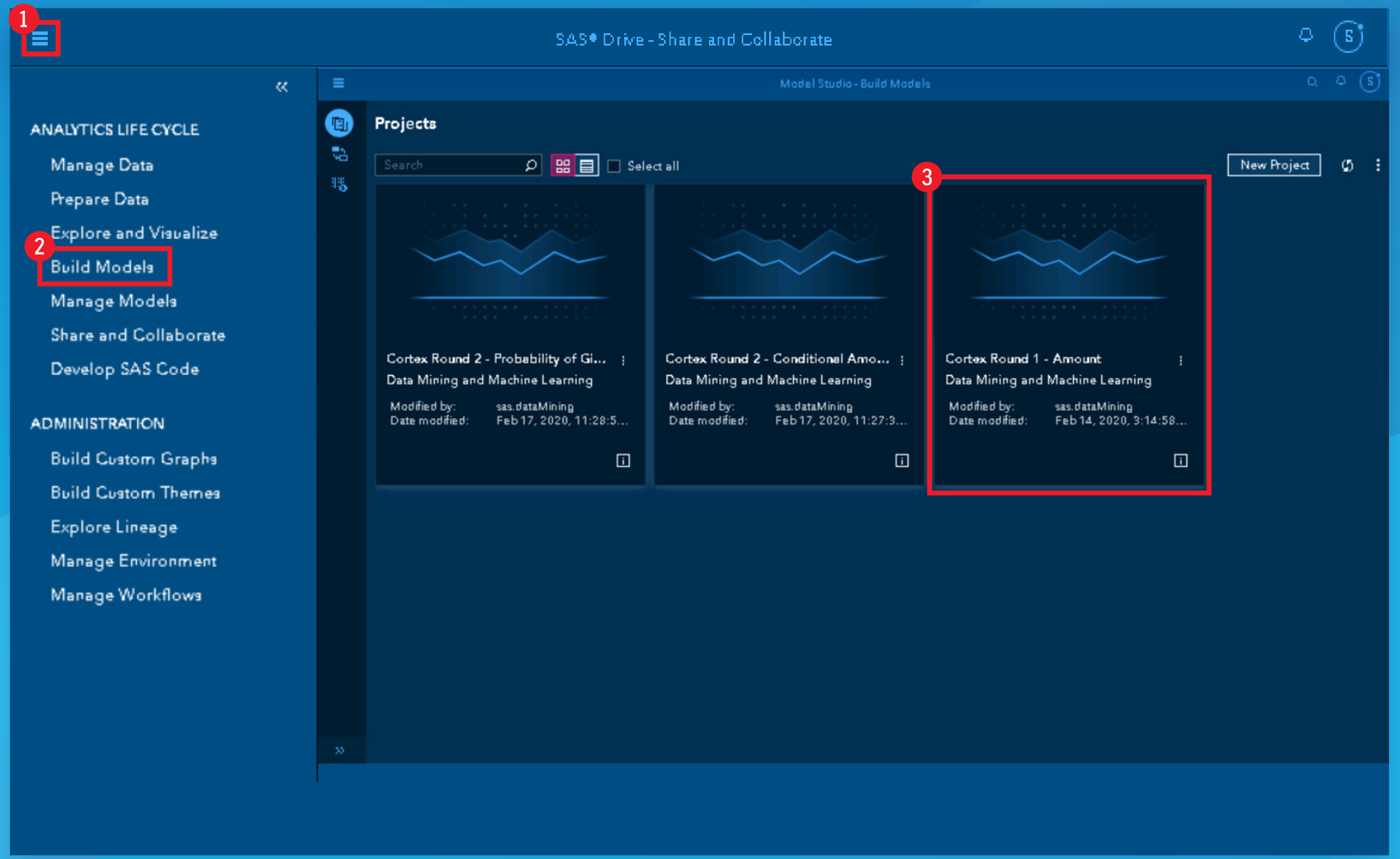


Use the first three tabs (Game Scenario, Data Dictionary and RD1: Explanation AmtThisYear) to explore the game scenario and game data for round 1



Open Project: Cortex Round 1 - Amount

1. In SAS Drive, click on the hamburger icon at the top left corner
2. Select ‘Build Models’
3. Double click on ‘Cortex Round 1 – Amount’



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Assign Variable Roles

To change or reject some variable roles:

1. Select the variable and change their roles on the right-side panel

NOTE: *Choose variables one at a time by deselecting one before selecting the next*

2. Once done with changing variable role, click on the 'Pipelines' tab

NOTE: *'AmtThisYear' should stay the target Variable and 'GaveThisYear' should stay rejected*

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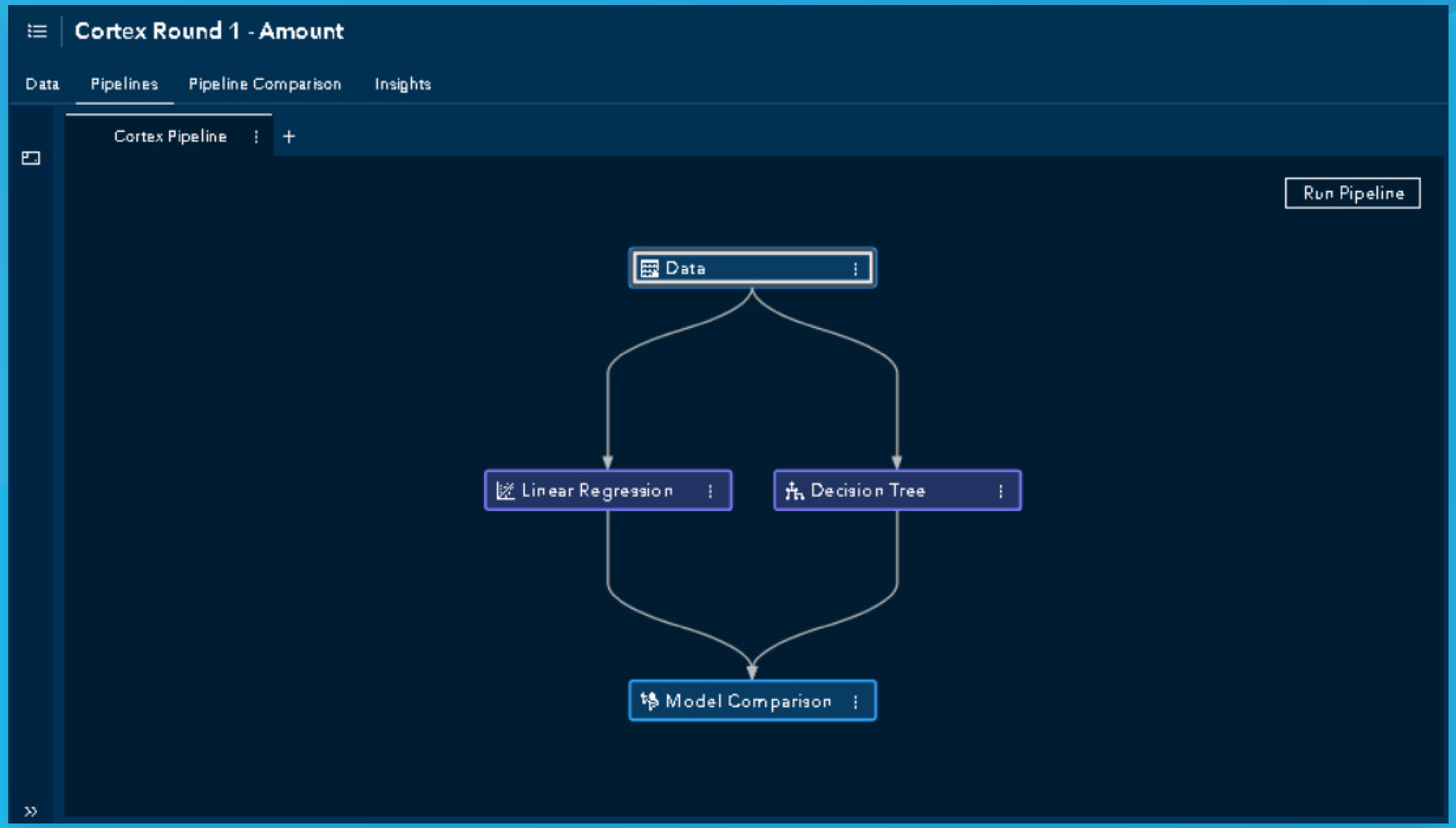
Pipeline for Round 1

Here is a pre-built pipeline that you can start with



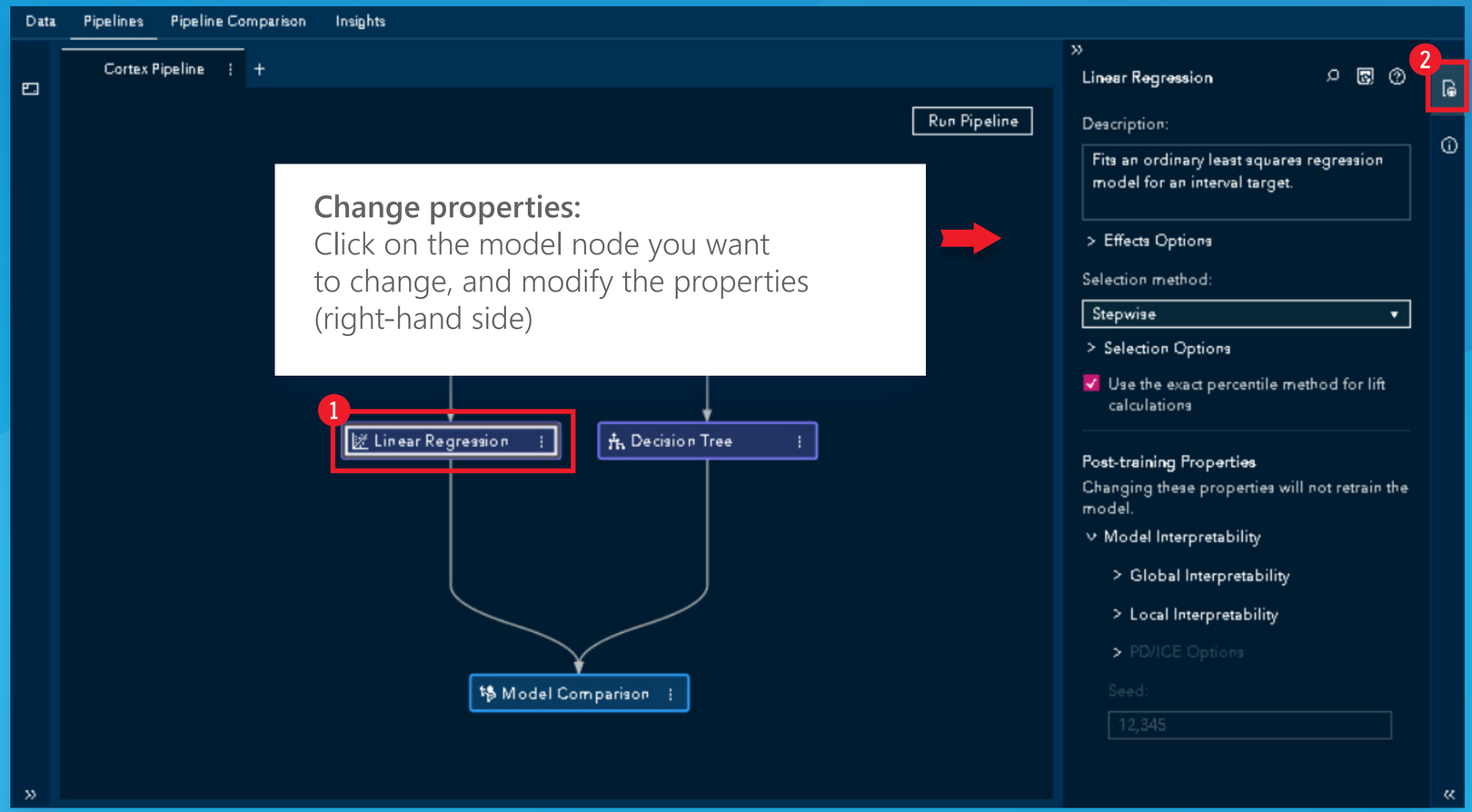
Improve the Default Models

To open the properties of each model:

1. Click on the model's node to see the node options on the right-hand side.
2. To learn more about the nodes click on 'Node' details:

- You should try to improve models' properties.
- Remember your mission is to better predict who to call!

Different models have different properties that can be modified



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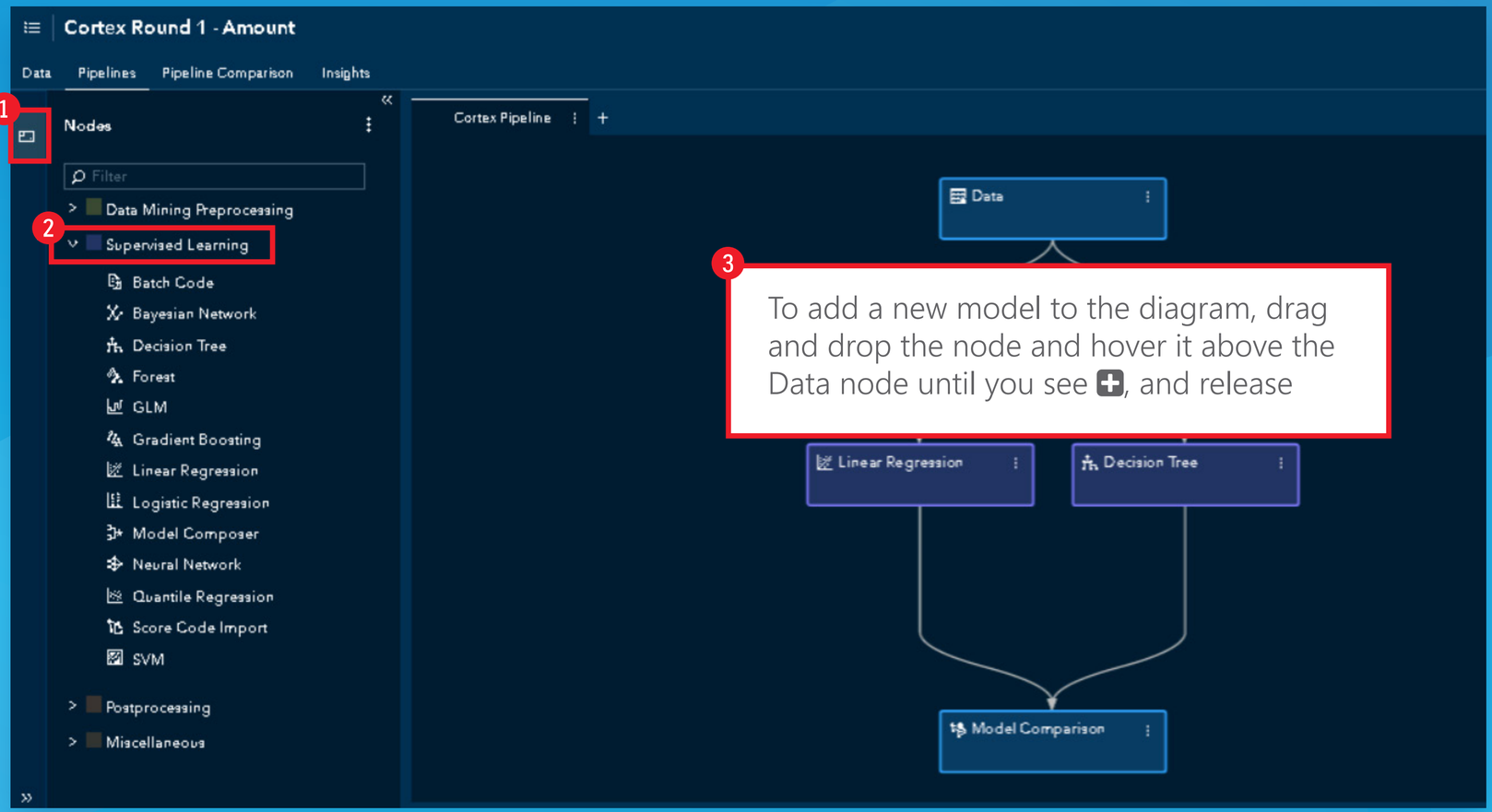
Improve the Default Pipeline

1. Click on the 'Nodes' icon on the left to reveal additional nodes
2. Under 'Supervised Learning', find other predictive models that you can use
3. Drag the selected model to the data node and release

NOTE: *Depending on the selected models, the 'run' time could vary significantly. E.g., execution of Neural Nets or Gradient Boosting, might take longer to finish!*

Additional models can be added to the pipeline to experiment with different predictive modeling approaches and to improve the pipeline



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Run the Pipeline/ See Results

1. Click on ‘Run Pipeline’

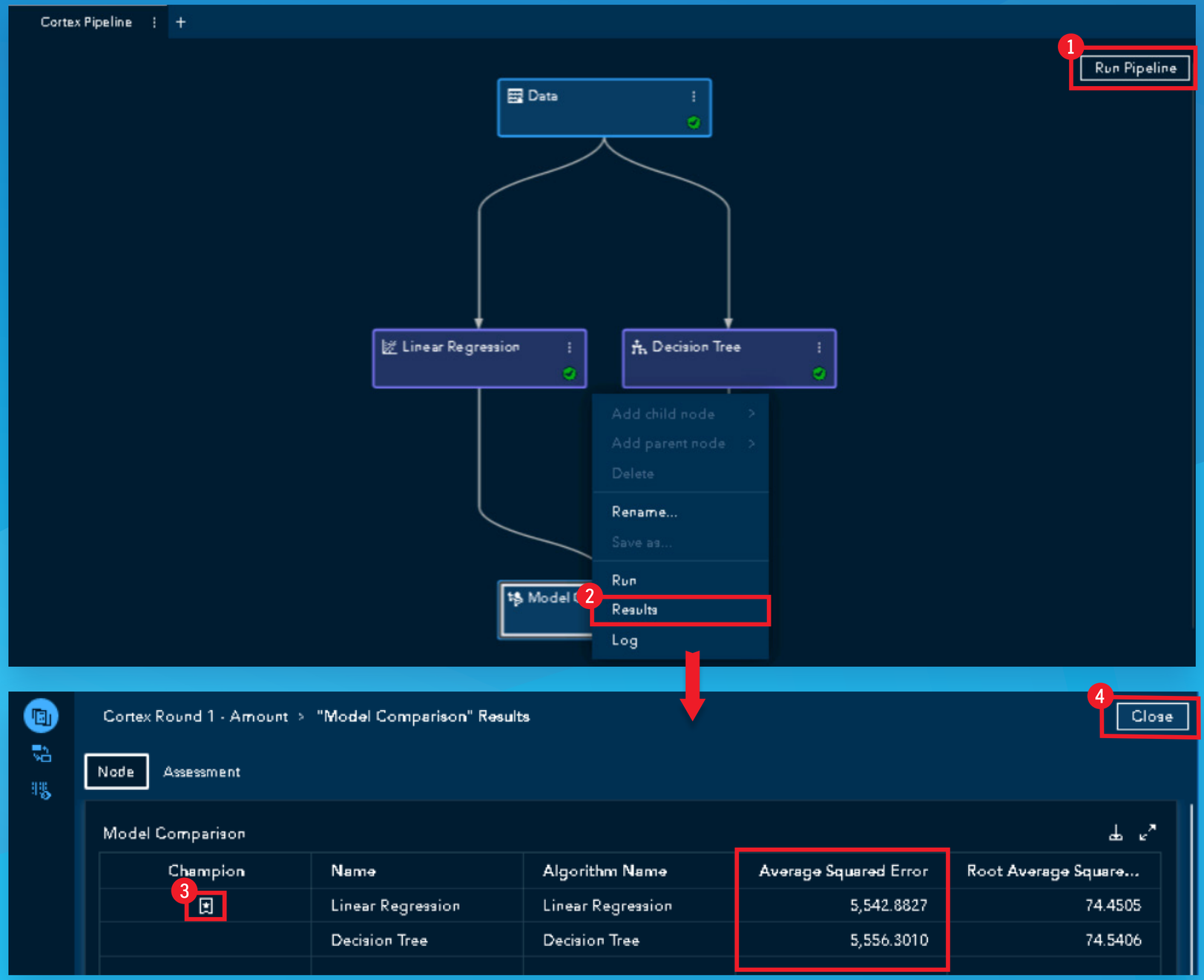
NOTE: *green check marks appear on nodes when run is complete*

2. When run is complete, right-click on the ‘Model Comparison’ node and click on ‘Results’

3. In ‘Model Comparison Results’ see the Champion Model

NOTE: *the model with the lower ‘Average Squared Error’ is chosen*

4. Click on ‘Close’, to return to your pipeline page



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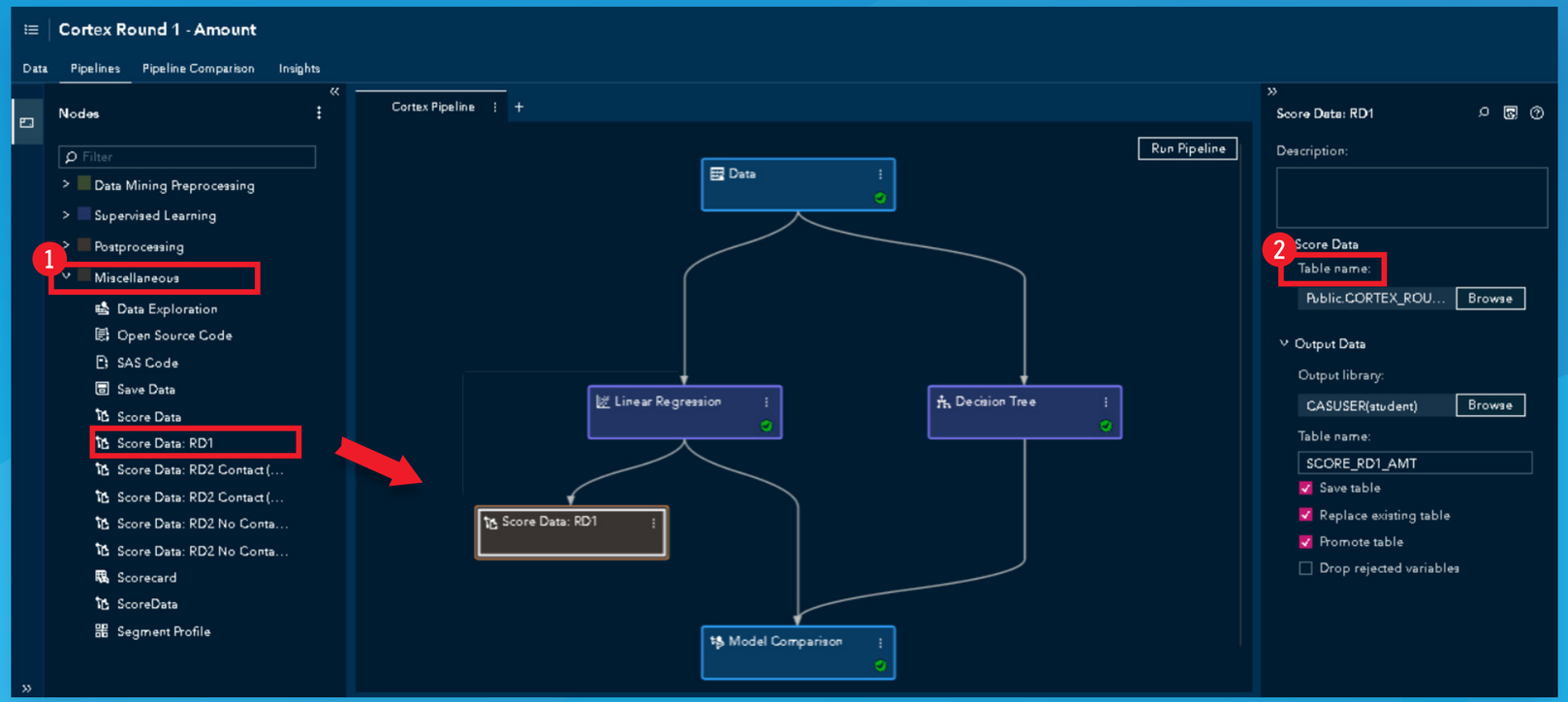
Score New Data

1. Under ‘Miscellaneous’, select the ‘Score Data: RD1’ node and drag it to the Champion model node (here, Linear Regression) & release
2. In the node option pane, under Score data, in the table name, click on browse

NOTE: *You should not change the name of the output table.*

Use the ‘Score Data: RD1’ node on the champion model to score your data in your private directory



NOTE: *Before scoring your data, it is recommended to evaluate the performance of your models using ‘Insights’ tab*

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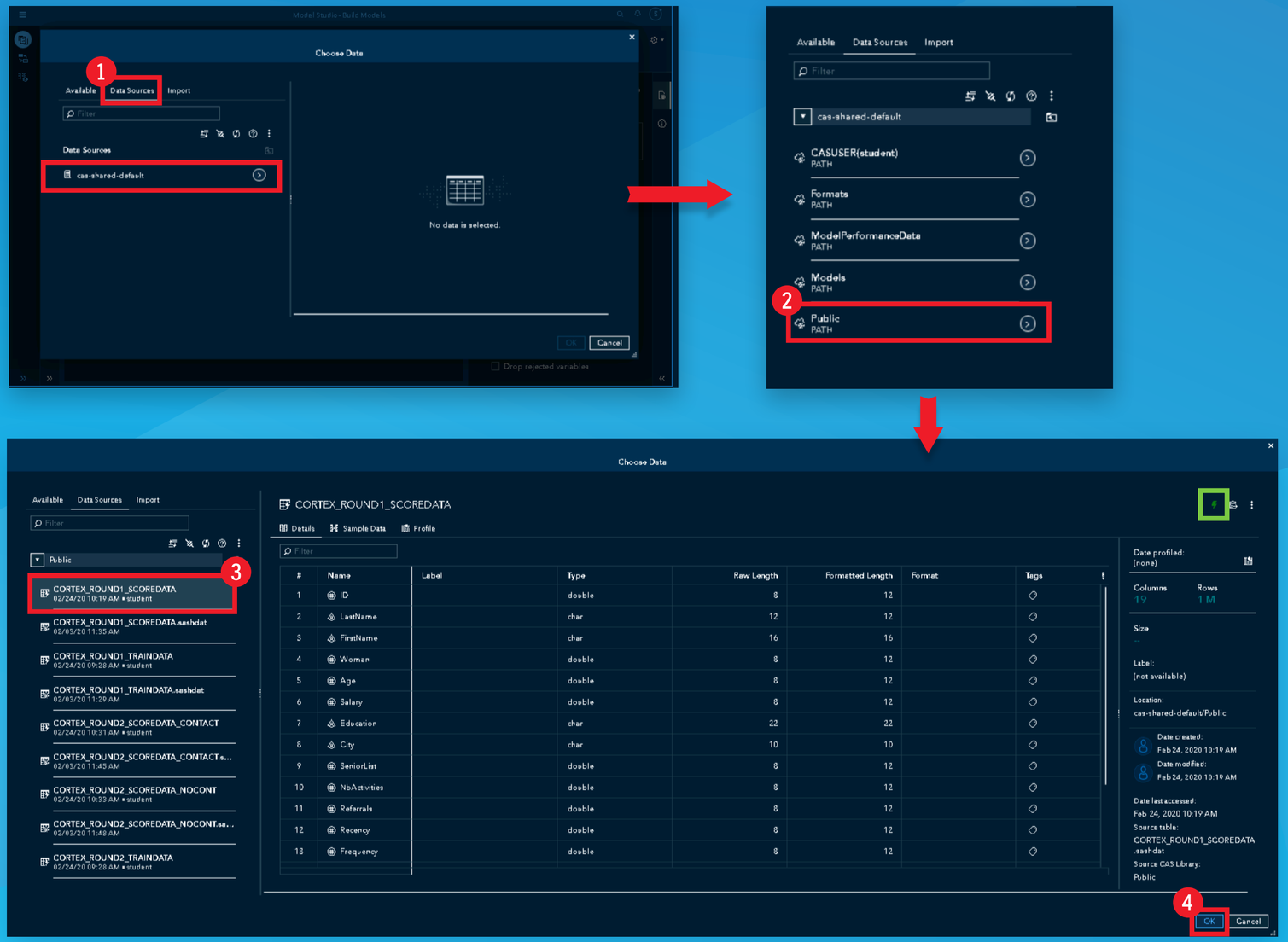
Load Data

1. Under ‘Data sources’, select ‘Cas-shared-default’
2. Click on ‘Public’
3. Select ‘CORTEX_ROUND1_SCOREDATA.sashdat’

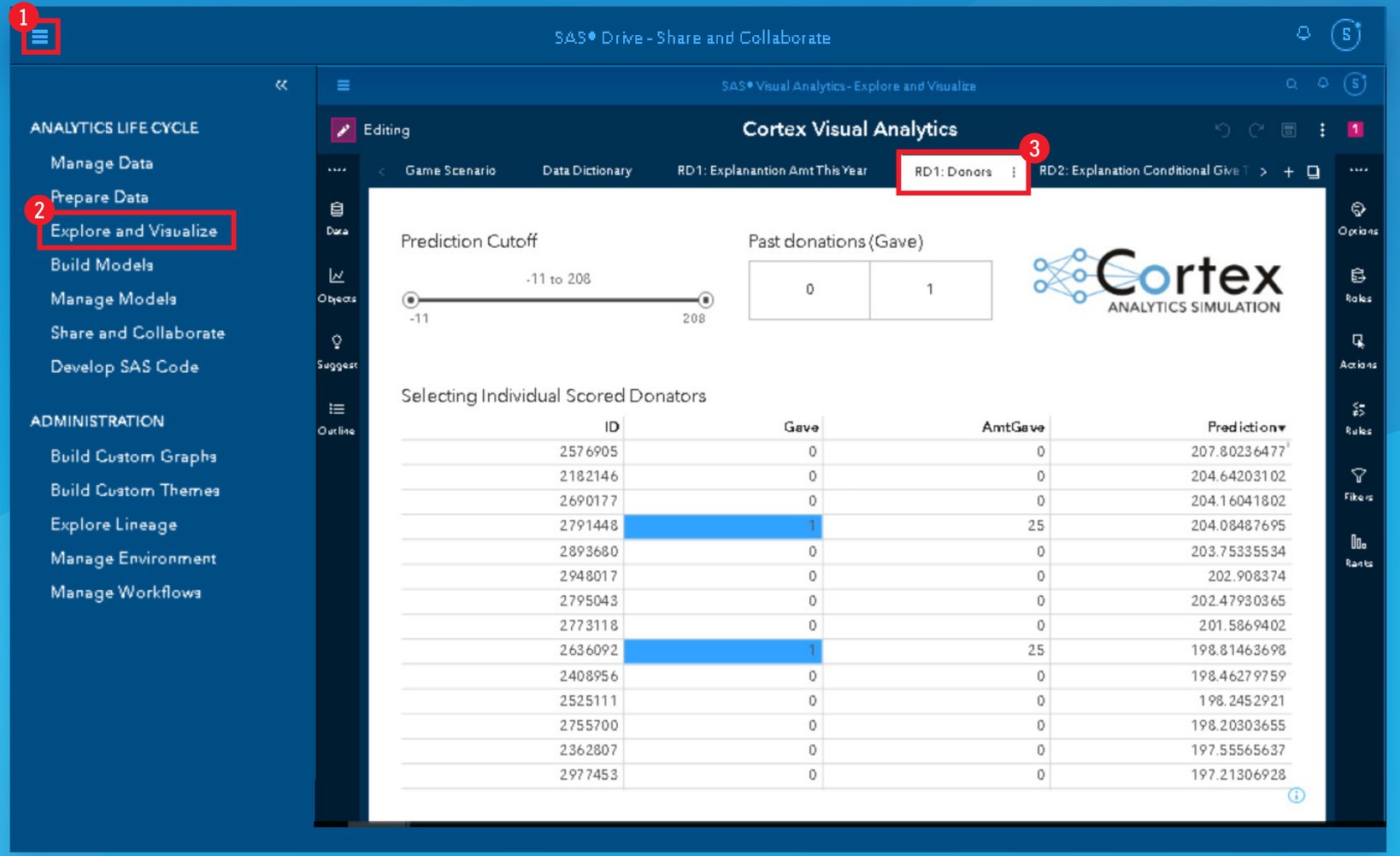
NOTE: *if data is not loaded, then click on the lightning icon to load the data first. This may happen only the first time that you access the game.*

4. Click on ‘OK’
5. Run the Pipeline again



Re-open Cortex Visual Analytics Report

1. Click on the hamburger icon on the top left corner
2. Select 'Explore and Visualize '
3. Click on 'RD1: Donors' tab



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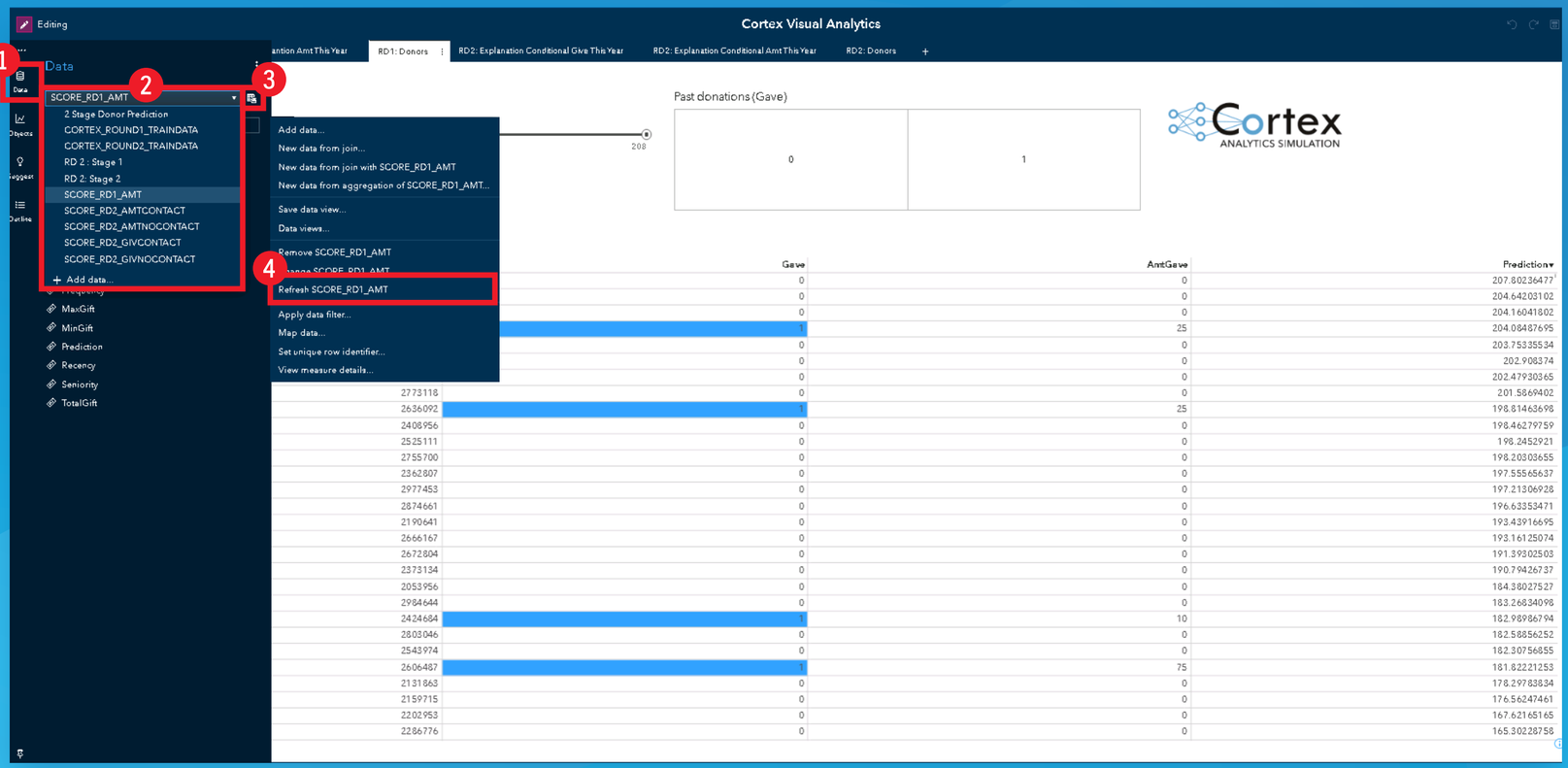
Explore & Visualize Data

1. Click on the ‘Data’ Icon
2. Under ‘Data’ open the drop-down list and choose ‘SCORE_RD1_AMT’
3. Click on ‘Actions’
4. Click on ‘Refresh SCORE_RD1_AMT’
5. Close data by re-clicking on ‘Data’ icon from step 1



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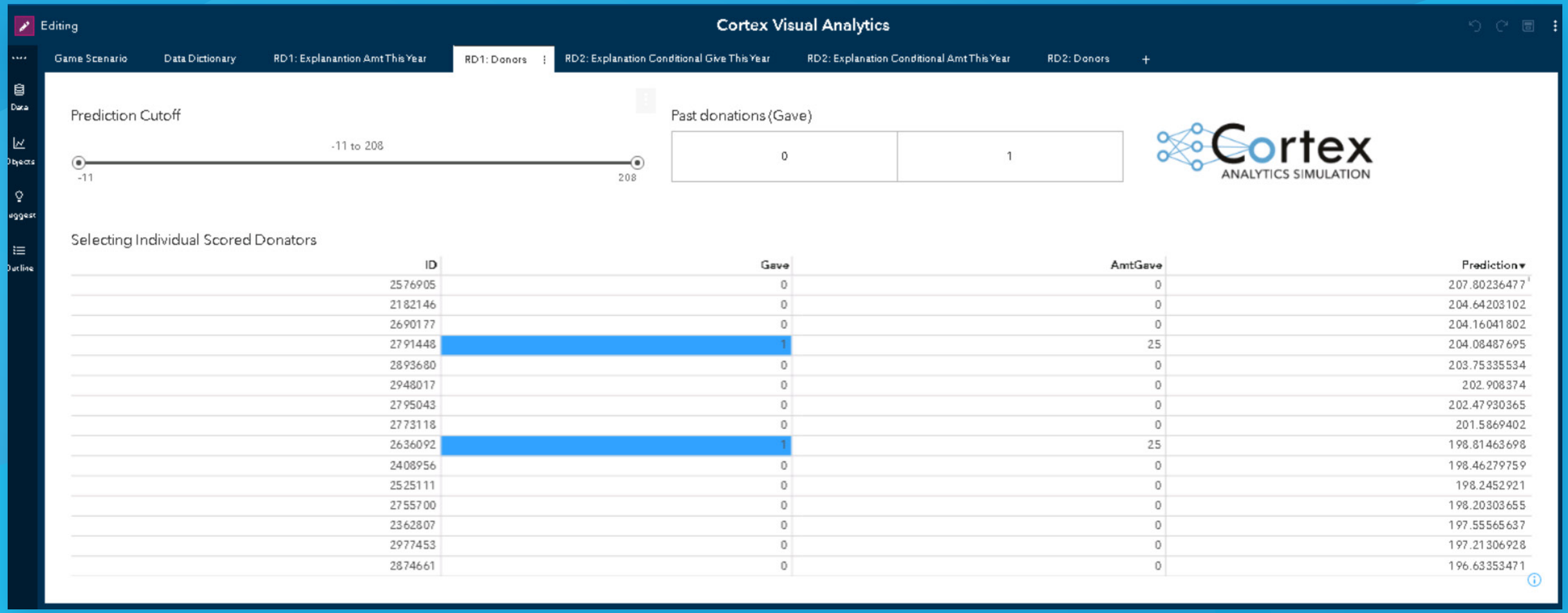
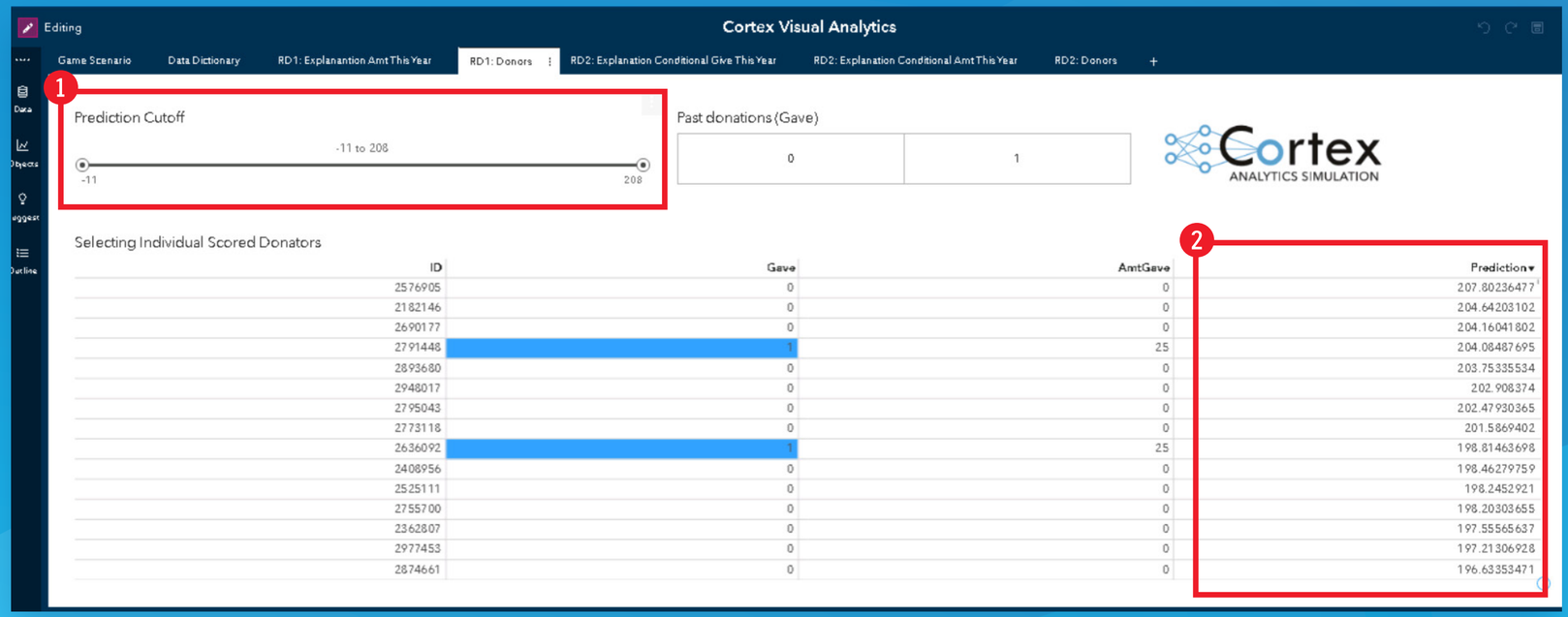
Report of Potential Donors



ID	Gave	AmtGave	Prediction
2576905	0	0	207.80236477
2182146	0	0	204.64203102
2690177	0	0	204.16041802
2791448	1	25	204.08487695
2893680	0	0	203.75335534
2948017	0	0	202.908374
2795043	0	0	202.47930365
2773118	0	0	201.5869402
2636092	1	25	198.81463698
2408956	0	0	198.46279759
2525111	0	0	198.2452921
2755700	0	0	198.20303655
2362807	0	0	197.55565637
2977453	0	0	197.21306928
2874661	0	0	196.63353471

Select Donors

1. Click on the ‘Prediction Cutoff’ and move the slider to choose your cutoff point
2. Right click on ‘Prediction’ column



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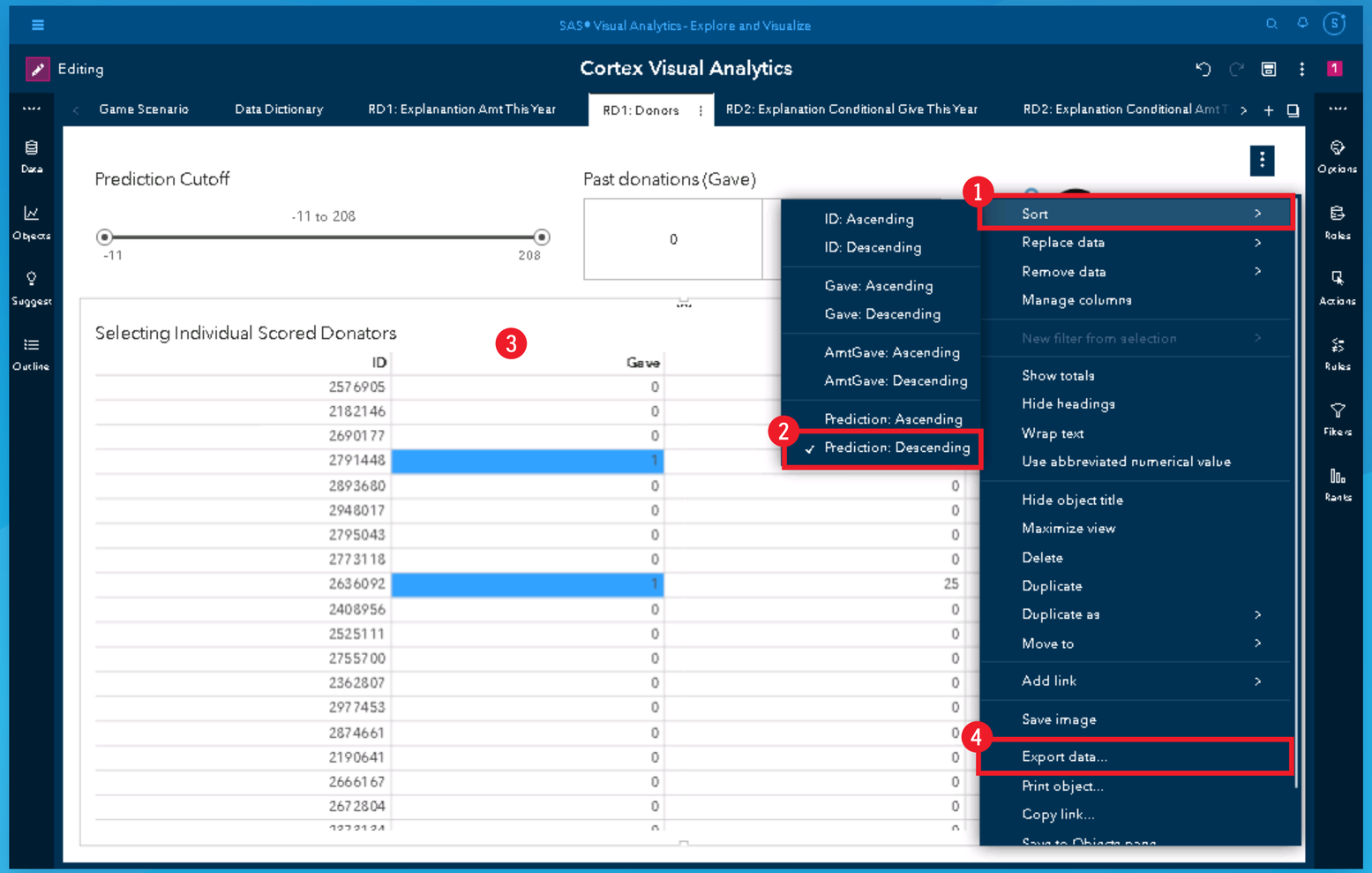
Select Donors (Cont.)

1. Click on ‘Sort’
2. Choose ‘Prediction: Descending’
3. Right click on any column
4. Select ‘Export Data’



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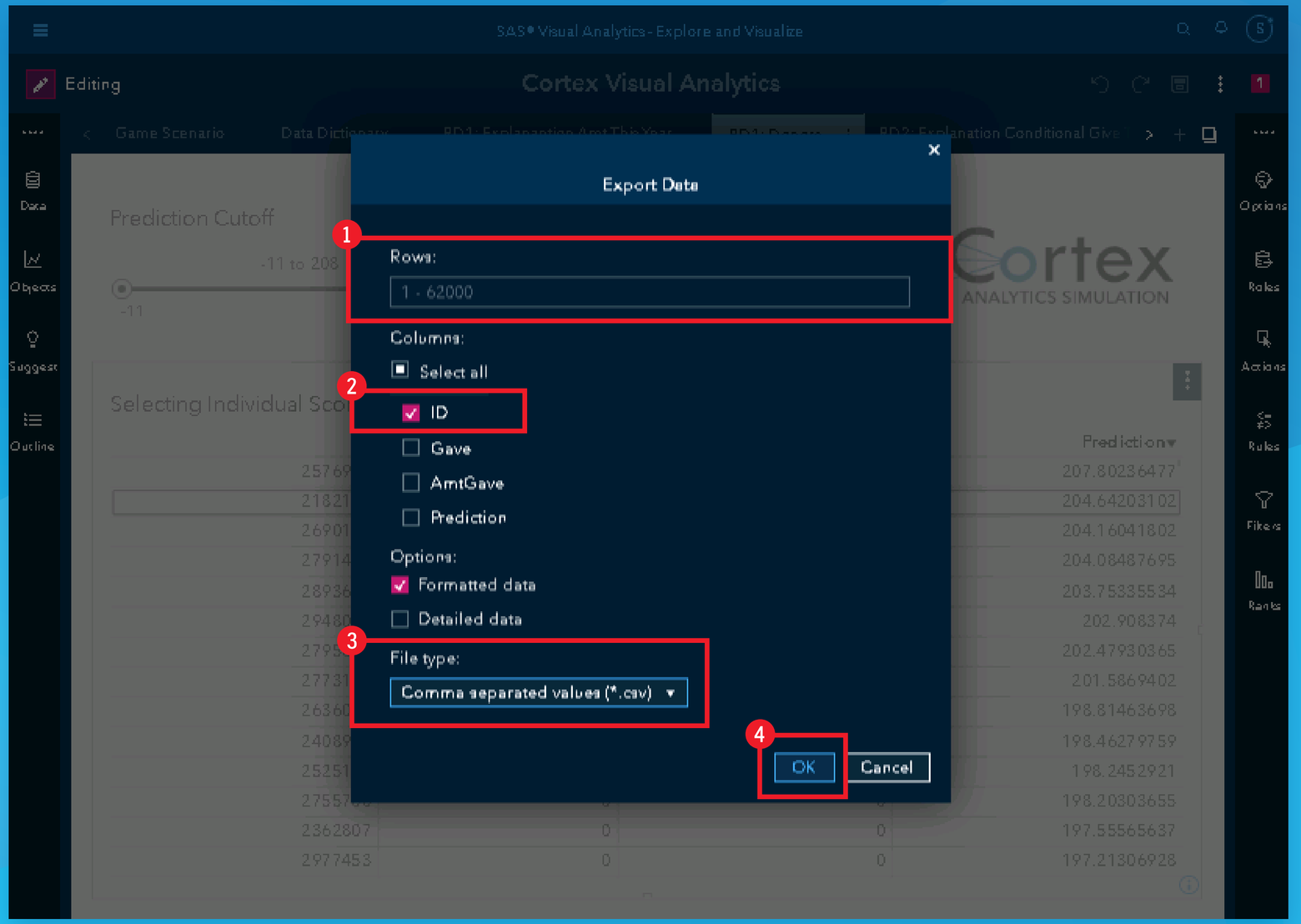
Export to .csv

1. Choose the rows you wish to export (e.g., 1-62000)
2. Select only the ‘ID’ column
3. Change the ‘File type’ to: Comma-separated values (*.csv)
4. Click on ‘OK’
5. Your .csv file will be in Download folder on the computer



You are now ready to upload your solution (csv file) for Round 1 to the game leaderboard!

Please refer to the Job Aids for a quick start on the game leaderboard