Appendix F

User Manual

This user manual is aimed to offer assistance to users for a better utilization of the Beaver software, which is used for testing models with data sets to anticipate and evaluate the prospective default rate risk.

F.1 Setup/Uninstall Beaver

F.1.1 Preparation

Before setup Beaver, user must install java, javafx and python and configure corresponding environment. 3 python repositories must be installed: numpy, pymysql and sklearn.
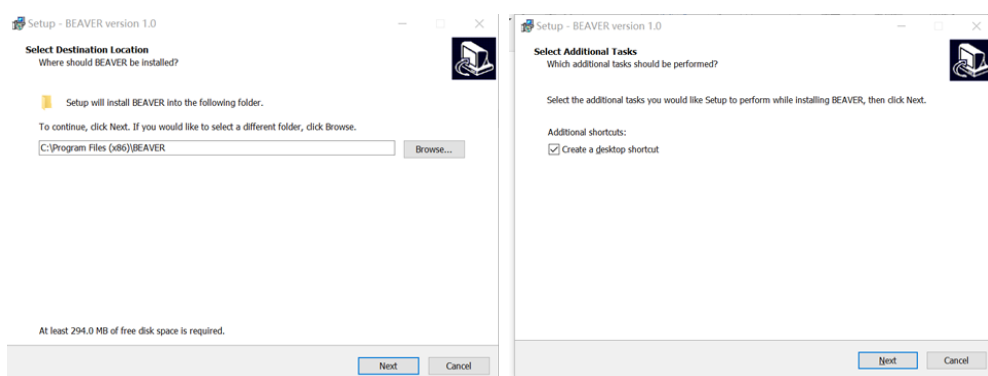
F.1.2 Setup Beaver

Figure F.1: Set Up One

To setup Beaver software, open the setup.exe first.

Select the folder path you want to store Beaver, then click "Next" as Figure F.1.

Keep clicking "Next" until the installation finished.

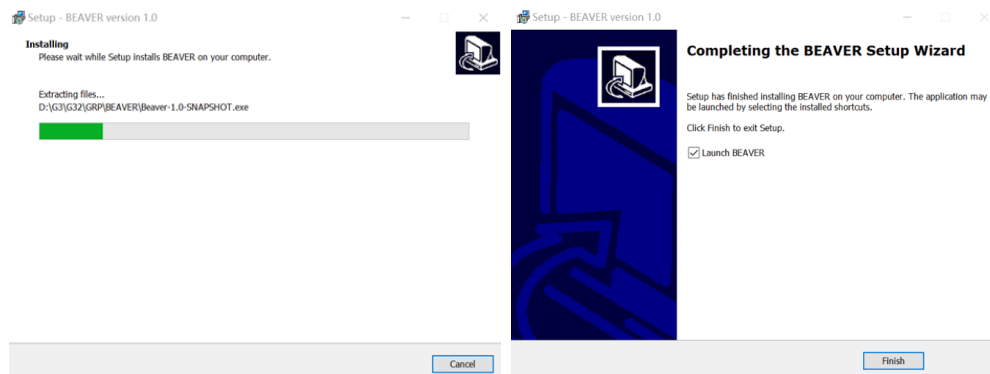Click the box to run Beaver after installation as Figure F.2

Figure F.2: Set Up Two

F.1.3   Uninstall Beaver

Open the Beaver folder that you have installed, find "unins000.exe" and run it. Click yes in the popped-out dialog box as Figure F.3.
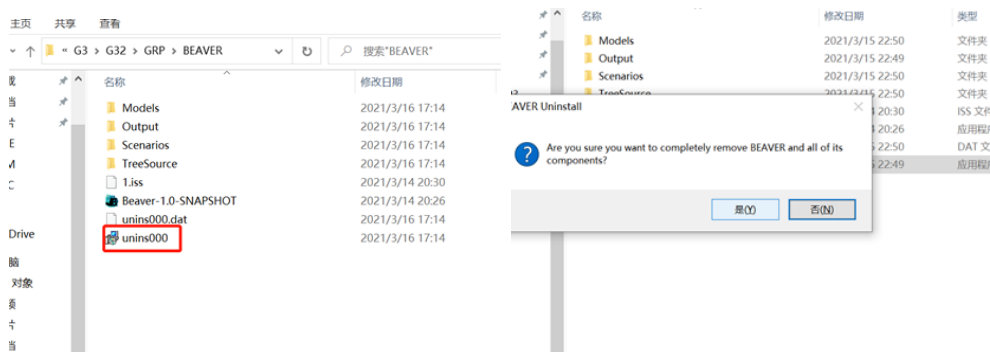

Figure F.3: Uninstall

F.2   Sign in/up in Beaver

F.2.1   Sign In

The sign in page will be displayed when running the software. Beaver realized conserving informs, data sets and models segregated in layer of users. Hence user must sign in before

manipulating on the main menu page.

Username and password can not be empty or incorrect format.

Click the sign in button. If no relative user information in database, relative prompt text will be displayed. In sign in/up and set password page, if connection to database failed, a warning will be popped out.

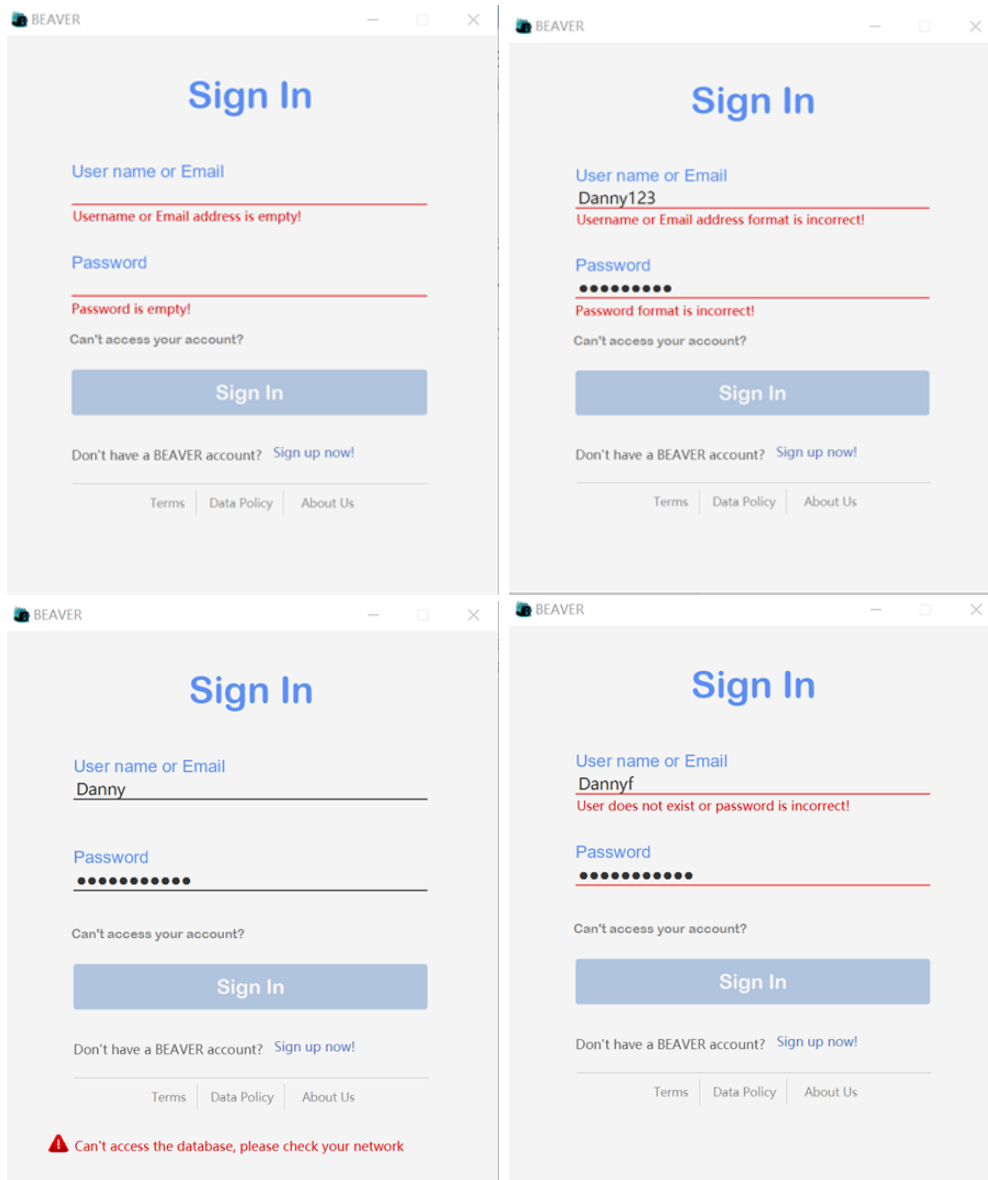Detailed sample warnings are displayed in Figure F.4.

Figure F.4: Invalid Sign In

Click 1 to reset password, click 2 to sign up, click 3 to see user terms of Beaver, click 4 to see data policy of beaver and click 5 to view our official website as Figure F.5.

Figure F.5: Sign In

F.2.2 Sign Up

The sign up page is to create a new user record in database if user has no account before. Username consists of 2-15 letters. Email address must in correct format. Password is made up by 8-16 chars, including 0-9, a-z, A-Z and special chars. The password is invalid if any of those constraints above is not satisfied. Confirm password must be coincident with the password entered.

All input fields can't be empty or incorrect format. Confirm password must be same with password.

Attention: Username and email address can't exist in the database as UID when clicking sign up button! Or a prompt text will be popped out. Detailed warnings are displayed as Figure F.2.2.
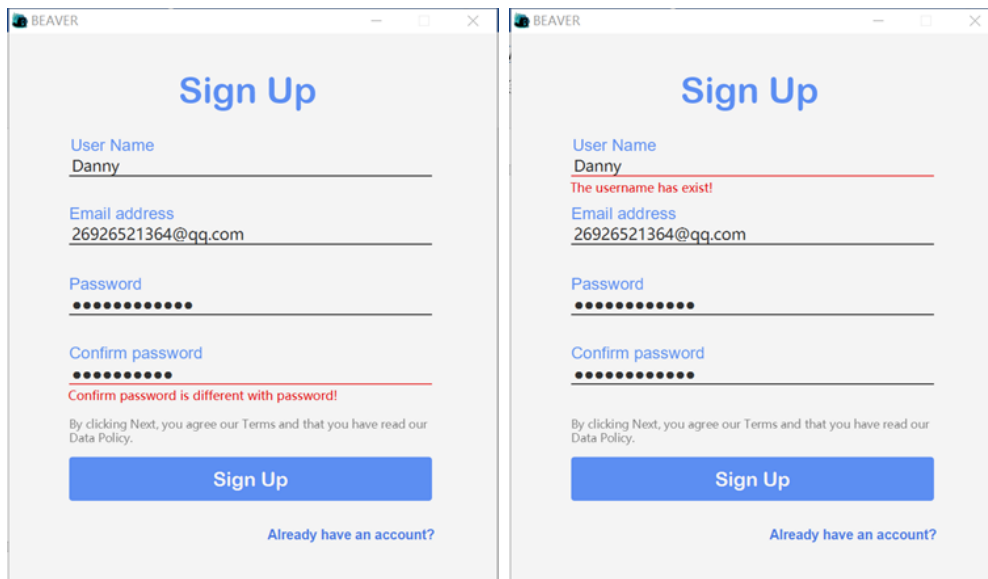

Figure F.6: Invalid Sign Up

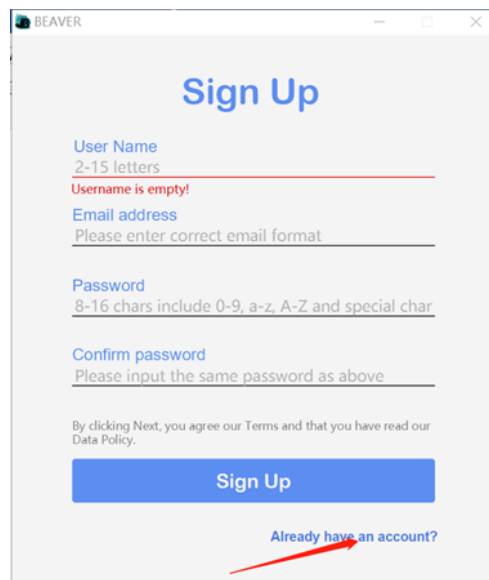Click button "Already have an account" in Figure F.7 to back to the sign in page.

Figure F.7: Back to Sign In

F.2.3   Reset Password
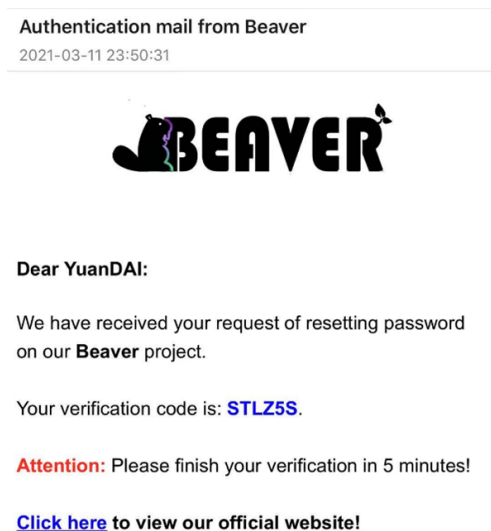
Input format is same as sign up.

Figure F.8: Sample Email

If the email address has not been registered, a prompt text will be popped out. Else, the code will be sent to relative email as Figure F.8.

Note that user can't resent a mail in the same email address in 60 seconds. And the code will be invalidated after 5 minutes. Figure F.9 shows the verification page.

Figure F.9: Verification

Finish all the input fields and then click the create new password button. If verification code is incorrect, the prompt text will be popped out.

If email address changed after sending verification code, the prompt text will be popped out.

F.3   Data Import

F.3.1   Import Model

The total procedure is:

File ≫ Import ≫ Import Model or click the button on the toolbar as Figure F.10. The model imported will be saved in local.
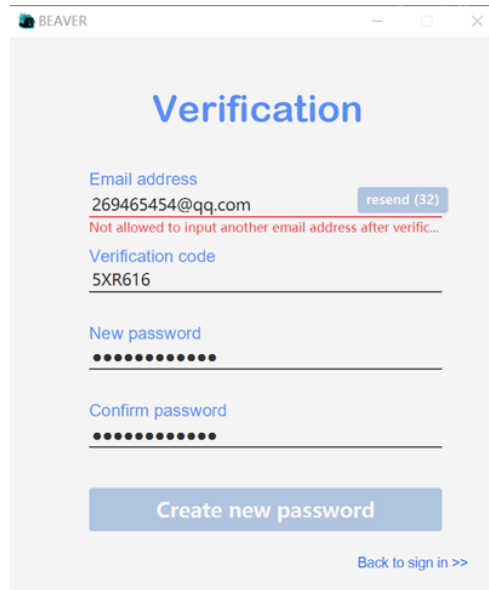

Figure F.10: Import Model

F.3.2   File to Database

Click the button on the toolbar.

Click Select a File to find the file or drag the file to the box as Figure F.11.
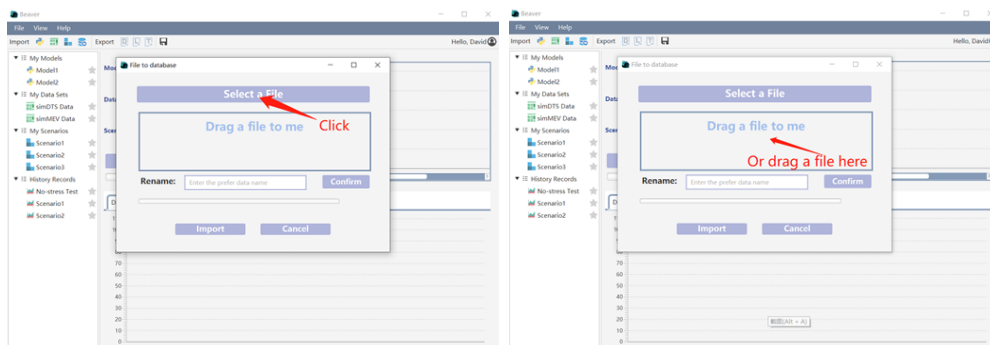

Figure F.11: Select File

To rename the file, input the new name in the rename field, then click confirm button. After that, click import button to upload the file to database, and click cancel button to cancel the import operation. The progress bar shows the total progress of the import operation.
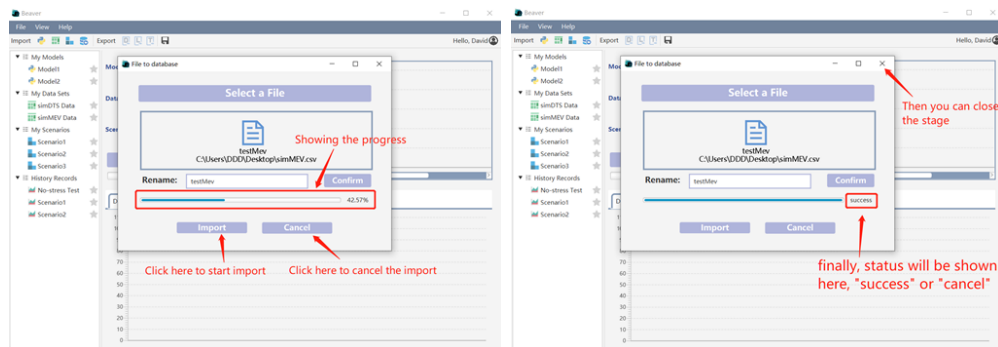

Figure F.12: Execution

F.3.3 Import Scenario

File ≫ Import ≫ Import Scenario or click the button on the toolbar.

F.3.4 Import Data Sets

Import data sets is essentially a filter that filtrate data to local by sql statement. The data sets stored to local are used to calculate and generate default rate chart.

File ≫ Import ≫ Import Data Sets or click the button on the toolbar.

Then choose the table in database and rename it.

After that, click the add condition button to add select sql statement as Figure F.13.

Click preview button to read the compositive sql statement, and click confirm button to continue.

If an incorrect sql statement format selected, a warning dialog will be popped out, the import operation cannot continue shown as Figure F.13.

Else the filtrated data sets will be imported to local and can be seen in "My Data Sets" in the tree item on the left side.
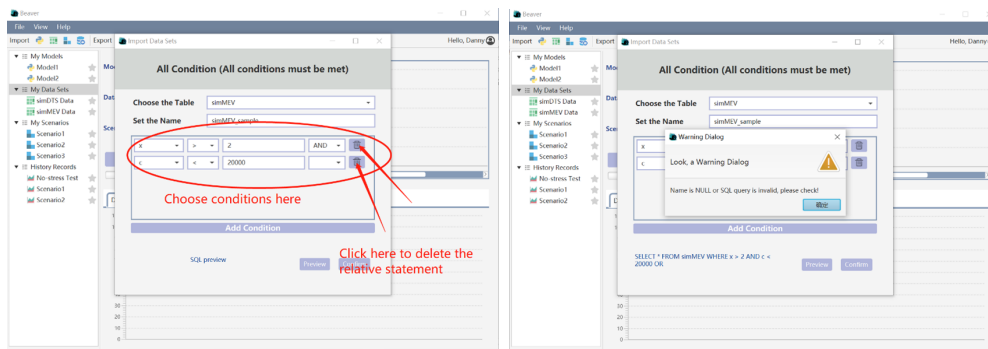
Figure F.13: Import Data Sets

F.4   Model Application

Model application is the major function of Beaver software which has achieved model evaluation. A default rate chart and log-likelihood chart are generated from specific model, data sets and scenario that have been chosen. User can analyze the model by compare the conformity of the observed default rate and the model-produced default rate utilizing this function.

Choose the model, data sets and scenario, then click model application button. The progress bar shows the total progress of the run model operation. It may take a few minutes to output the result.
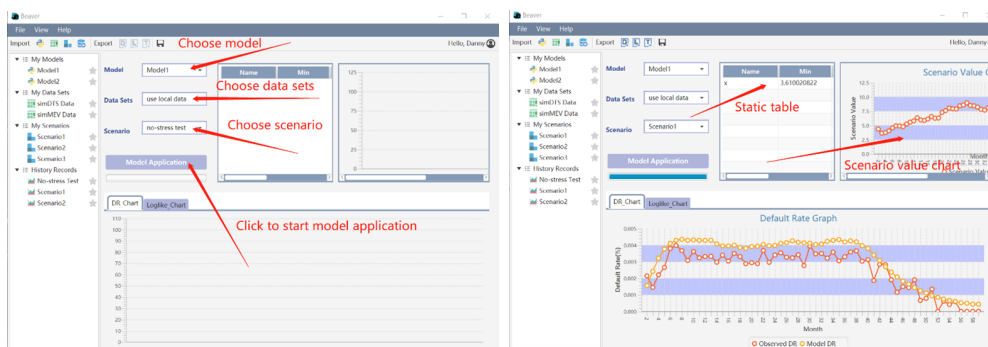

Figure F.14: Model Application

Additionally, a precise value will be popped out if putting mouse on the result point.

To save the results to history record, click the save button in the top toolbar.

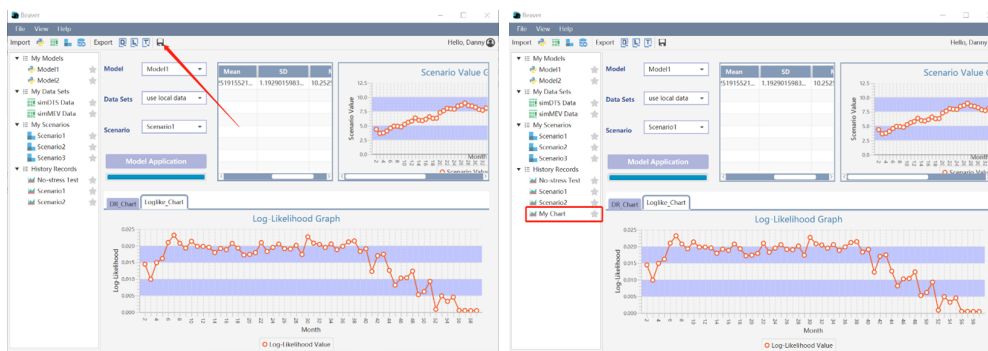Enter the new result's name, then click yes.

Figure F.15: Save Results

F.5 Export Result

F.5.1 Export DR Chart as PNG

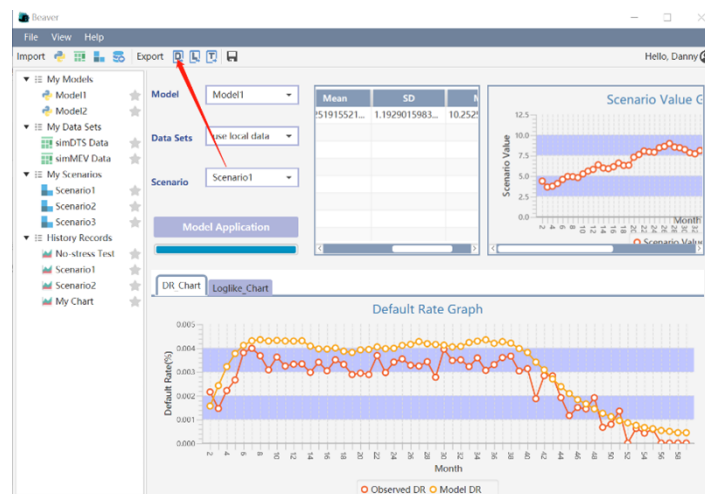File ≫ Export ≫ Export DR Chart as PNG or clicking the button.

Figure F.16: Export DR Chart

F.5.2 Export Loglike Chart as PNG

File ≫ Export ≫ Export Loglike Chart as PNG or clicking the button.

F.5.3 Export Chart Data as TXT

File ≫ Export ≫ Export Chart Data as TXT or clicking the button.

F.6   Content Tree

Beaver displays all of the helpful file for users as a tree in the left side of the main menu page, including models, data sets, scenarios and history records that enable users to review the result generated previously. Each file in the tree can be called "tree item". Each category can be folded/unfolded freely, which is convenient for users to manage and manipulate their files.
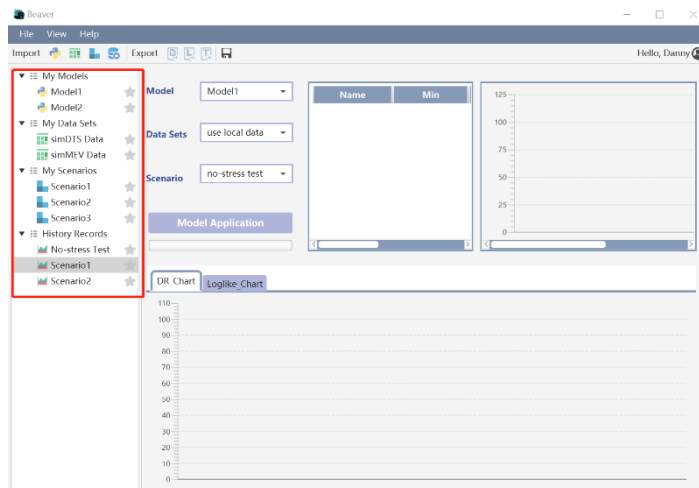

Figure F.17: Content Tree

F.6.1   Open File in Content Tree

Open any files by right clicking the file and click "Open" or by double clicking the file. Model files are in .py format and scenario files are in .txt format. They will be opened with relative default file editor.

When open data set, Beaver starts to read relative data table from database and shows them in a new screen, it might spend some time to read data sets if a substantial data sets exist in the table. In the dataset window, the total number of records and pages and current page number will be displayed below the table. Click last page, next page button or enter the page number in the input field to view other pages as Figure F.18.

In content tree, history record is displayed in the same area that shows the model application results, including dr_chart, loglike_chart, scenario value chart and statistic table.
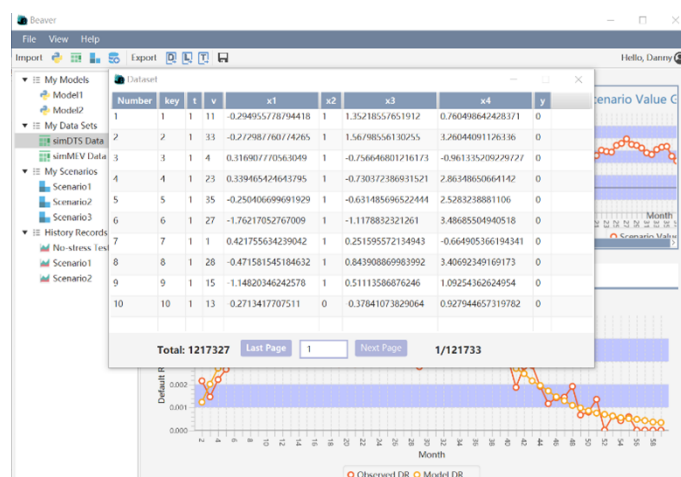
Figure F.18: Data Table

F.6.2 Rename File in Content Tree

Right click ≫ Rename, then a dialog box popped out.

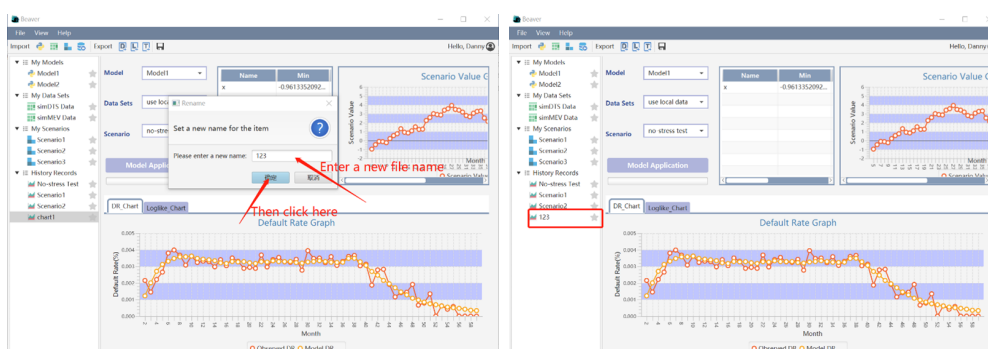Enter a new file name in the text field, then click ok shown as Figure F.19.

Figure F.19: Rename File in Content Tree

F.6.3 Delete File in Content Tree

Right click ≫ Delete, then a confirmation dialog box popped out, click yes to continue.

F.6.4 Favour File in Content Tree

Favour file function helps users marking useful files.

Right click ≫ Favour to favour a file and re-click it to backout favour.

F.7 Menu Bar

F.7.1 File

Open Recent

To view recent history records, click File ≫ Open Recent.

Merge

Merge function is aimed to compare history records, generally used to compare charts produced from same data sets, but different scenarios or models. Click File ≫ Merge. Follow the Figure F.20
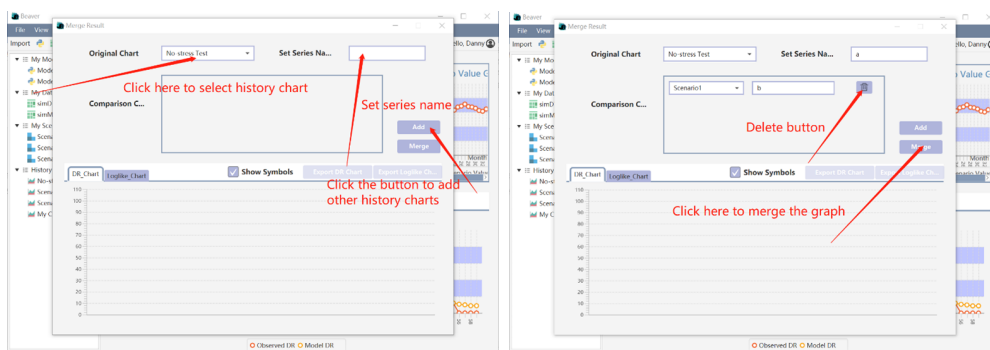

Figure F.20: Merge

If Series Names are not all set correctly, a warning dialog will be popped out.
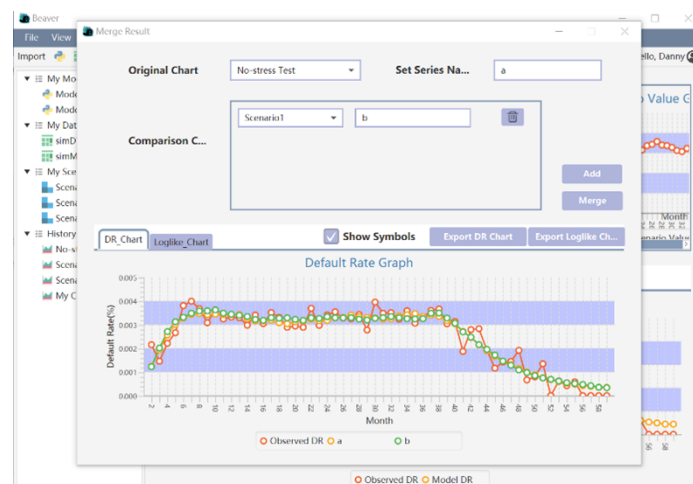
Sample merge graph generated as Figure F.21

Figure F.21: Merge Resylt

Sign Out

To sign out, click File ≫ Sign Out, then the main menu page will jump to sign in page.

Quit

To exit Beaver, click File ≫ Quit.

F.7.2 View

View ≫ Show ToolBar.

View ≫ Show Content as Tree.

View ≫ Show Chart Symbols.

F.7.3 Help

Help ≫ User Guide.

Help ≫ About Beaver

Help ≫ About us and click it to turn to our official website.
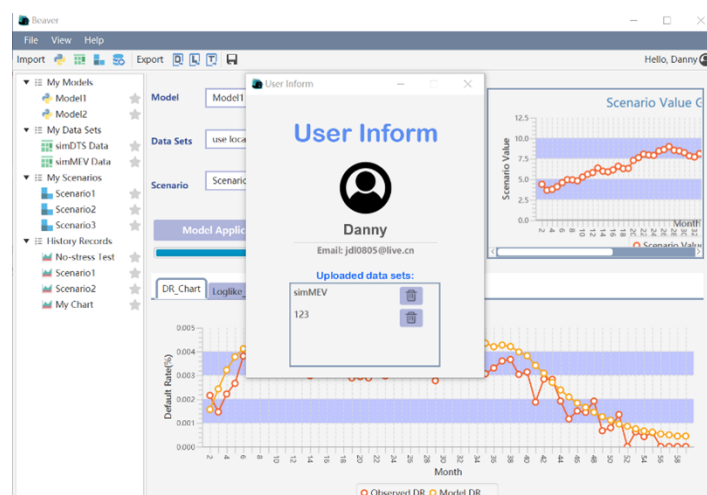
F.8 User Inform

Figure F.22: User Inform

Click the User button in the top right corner of the window to see user inform as Figure

F.22. User inform window include username, email address and data sets that the user has uploaded to database. Click the delete button to delete the uploaded table in database. A confirm dialog will be popped out, click yes to continue.