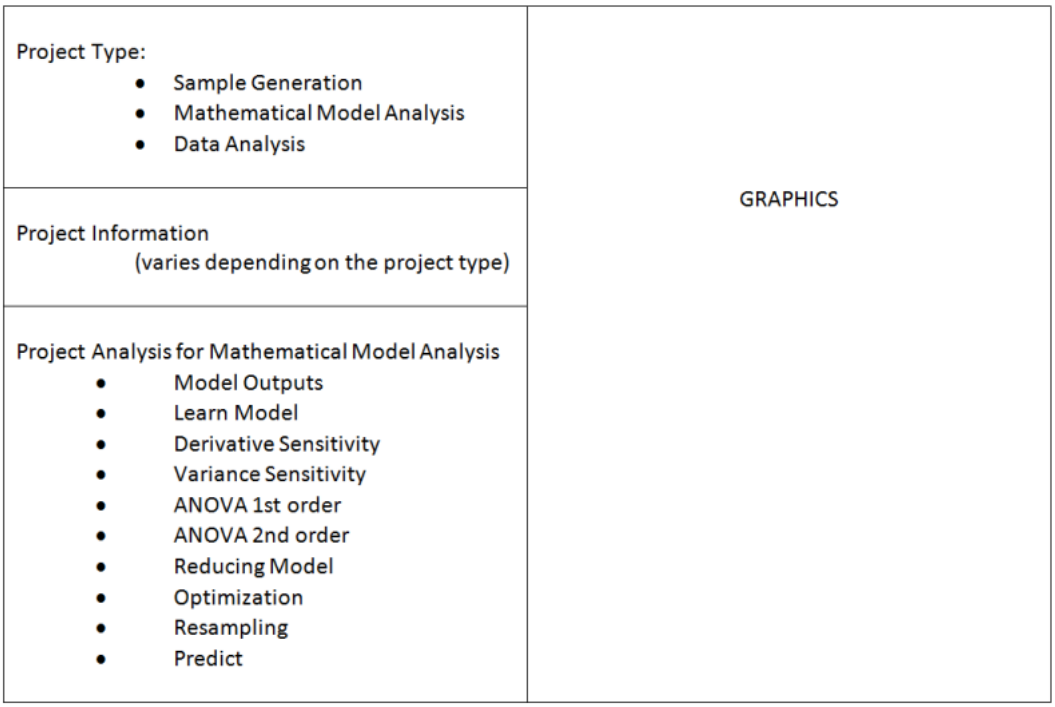
GOSUM GUI MODIFICATIONS

The whole GUI should be a pop-up tree structure with the graphical part to the right.



1. **Project**

Name and Type. There are three types of study: Sample Generation, Mathematical Model Analysis, Data Analysis.

2. **Project Information.**

For Sample Generation:

- Indicate Parameters, Constraints (optional) (like inputting manually in Table Tab "Input Parameters" or indicate path to the file with parameters values and distributions similar to what appears when "Have Variables" is pressed).

- Indicate Sampling Method (Monte Carlo, DSample, CVT).
- Indicate Number of Samples.

As a result a file with samples should be created and a visualization plot should appear. Convergence for CVT only if wanted.

For Mathematical Model Analysis:

- Indicate Parameters, Constraints (optional) (like inputting manually in Table Tab "Input Parameters" or indicate path to the file with parameters values and distributions similar to what appears when "Have Variables" is pressed).
- Indicate Sampling Method (Monte Carlo, DSample, CVT).
- Indicate Number of Samples.
- Indicate Path to executable (exe, matlab, simulink, modelica).

Note: When Matlab is used, path needs to be set in Edit/Preferences/General. This should be a pop-up query.

For Data Analysis:

- Input samples, Output samples (similar to what appears when "Have Samples" is pressed).
- Indicate Output names (optional) (similar to what appears when "Have Variables" is pressed).
- Indicate Parameter names (optional) (like in Parameters/Rename Parameters or Outputs).

Note: The "Have Samples" checkmark should go to the "Project Information" to indicate if samples were imported or generated.

There should be button Run or Generate after all information.

3. **Project Analysis for Mathematical Model Analysis.**

There should be buttons / checkmarks here with the indication of approximate time left for:

- Model Outputs
- Learn Model
- Derivative Sensitivity
- Variance Sensitivity
- ANOVA 1st order
- ANOVA 2nd order
- Reducing Model
- Optimization
- Resampling
- Predict

Note: When the "bad" points are removed from the histograms, new data should be saved in the same project file, not a completely new one. The following popup should appear: "You selected some points to be removed. What do you want to call this? Write a comment on nature of removal."

Note: In the Optimization Dialog, "additional optimization constraints" should be asked in the Optimization dialog.

Notes:

Number of CPU cores should be next to global Run button on top toolbar.

Next to global Run button should be Pause, Stop, Continue (greyed out if Run is not on).

File menu

File/New should be renamed as "New Project" and create a new model deleting all existing data saying before that "This will remove all your data. Do you want to proceed?"

File/Open should be renamed as "Open Project".

File/Save Model as should be renamed as "Save Project".

File/Save Plot As and File/Export Plot As should be merged together putting xml as one of the options.

Edit menu

Add Copy, Paste like in Matlab Edit.

Edit/Copy Plot to Clipboard should be moved to Export tab.

Edit/Preferences should be a separate tab "Algorithm options".

Note: The same options should be given when appropriate in "Project Information". Pop-up help should appear in "Algorithm options" tab to explain options.

Edit/Number of CPU cores should be next to global Run button.

Edit/Change Histogram Layout should be in "Plot Preferences" tab and it should be greyed out when no histograms are present.

View menu

View/Constraints Tab is in Project Information.

Parameters menu doesn't exist any more

Parameters/Add Multiple Variables is in "Project Information".

Parameters/View/Edit Constraints is in "Project Information".

Parameters/View/Edit Distribution Ranges goes to Preferences and Options/Sampling in Algorithm Options tab.

Parameters/Import Variables is in "Project Information".

Parameters/Gaussian Spread of CVT goes to Preferences and Options/Sampling in Algorithm Options tab.

Parameters/Rename Parameters and/or Outputs is in "Project Information".

Parameters/Recompute Distribution is in "Project Information".

Parameters/Compute/Recompute Correlation is in "Project Information".

Parameters/Delete Correlation is in "Project Information".

Parameters/Invalidate Input Samples is in "Project Information".

Design menu doesn't exist any more, all options from here are in "Project Information".

Samples menu doesn't exist any more.

Samples/Import Samples is in "Project Information".

Samples/Remove All Samples is in "Project Information".

Samples/Select/Reorder Outputs is in "Project Analysis"

Note: the bug should be fixed, all outputs everywhere should be selected/reordered.

Samples/Show Output Projection On One Parameter is in "Project Analysis".

Model menu doesn't exist any more, all options from here are in "Project Analysis"/"Learn Model".

Derivative menu doesn't exist any more, all options from here are in "Project Analysis"/"Derivative Sensitivity". These options should also appear when right clicking on the derivative sensitivity window.

Export menu
Note: Visualization for correlations should be improved.
Note: Change name for Dot File Viewer.

Resampling menu doesn't exist any more, all options from here are in "Project Analysis"/"Resampling".

Predict menu doesn't exist any more, all options from here are in "Project Analysis"/"Predict".
Note: To write the detailed description of the method.

Reduce menu doesn't exist any more, all options from here are in "Project Analysis"/"Reducing Model".
Note: In the plot for cutoff sensitivity, values instead of their log10 on x-axis should be written.
Note: The user should be told to select outputs and select parameters.

Optimize menu doesn't exist any more, all options from here are in "Project Analysis"/"Optimization".
Note: Differentiate between learnt model and black box.
Note: To write the detailed description of how the robust optimization is implemented.
Note: Pop-up help should appear in "Optimization" to explain options.
Note: Real indexes of parameters should appear in Optimization Solution plot.

Options menu doesn't exist any more.

Help menu stays.