

# **Application User Manual**

## **HOW Tos:**

- **Using Workspace**
- **Start new project**
- **Adding nodes**
- **Adding edges**
- **Modify edge value**
- **Modify node name**
- **Calculate transfer function**
- **Show current system details**

## USING WORKSPACE

The screenshot shows a software interface for managing a graph workspace. It features three main panels on the left and a large central canvas on the right.

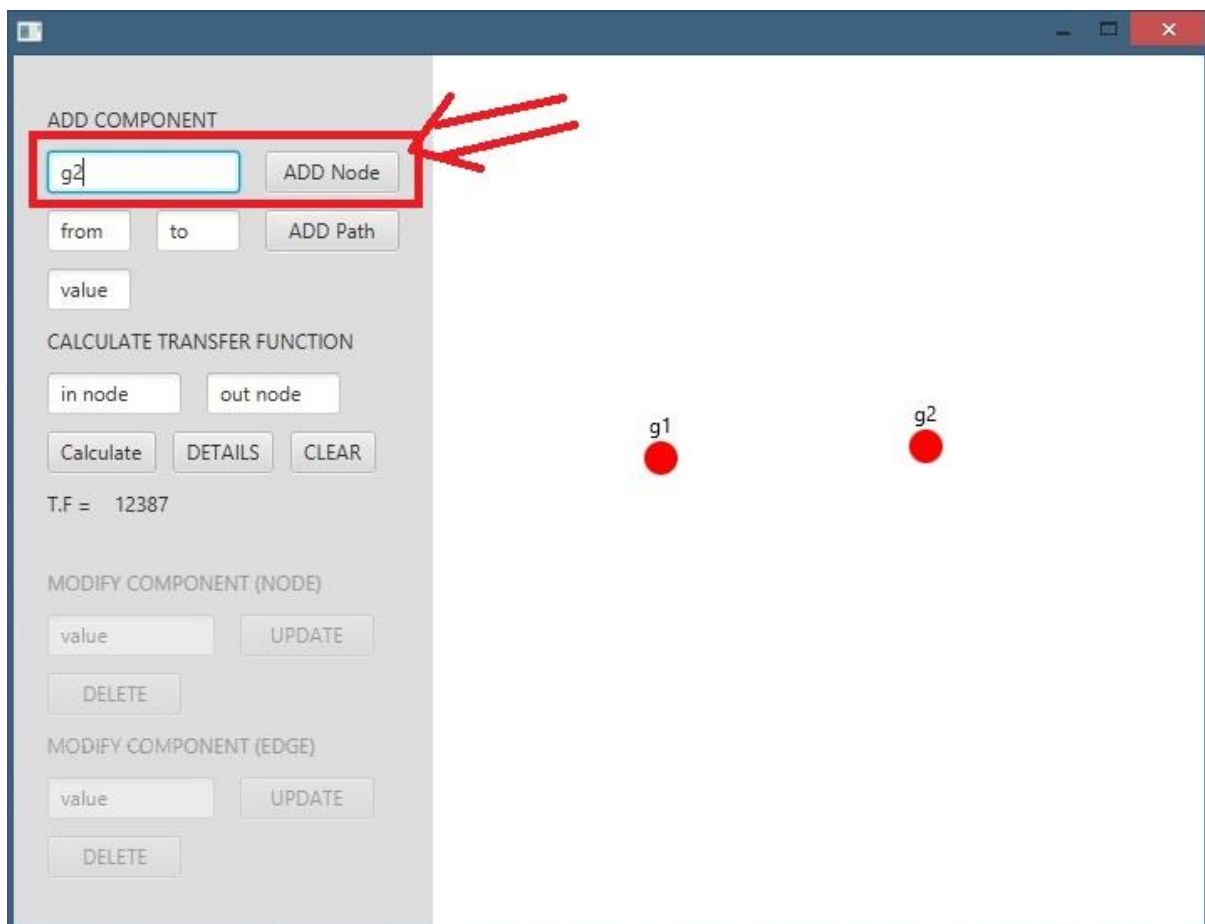
- ADD COMPONENT Panel (Red border):** Contains a 'node name' input field, an 'ADD Node' button, 'from' and 'to' input fields, an 'ADD Path' button, and a 'value' input field.
- CALCULATE TRANSFER FUNCTION Panel (Blue border):** Contains 'in node' and 'out node' input fields, 'Calculate', 'DETAILS', and 'CLEAR' buttons, and a display showing 'T.F = 12387'.
- MODIFY COMPONENT (NODE) Panel (Green border):** Contains a 'value' input field, an 'UPDATE' button, and a 'DELETE' button.
- MODIFY COMPONENT (EDGE) Panel (Green border):** Contains a 'value' input field, an 'UPDATE' button, and a 'DELETE' button.

The central canvas is a large white area with a yellow border. It contains the following text and annotations:

- (0) - Main Drawing Canvas** (Yellow text)
- (1) - Add graph components**
  - \* nodes & edges(Red text, with a red arrow pointing to the 'ADD COMPONENT' panel)
- (2) - Calculate Transfer Functoin & Show Systems details** (Blue text, with a blue arrow pointing to the 'CALCULATE TRANSFER FUNCTION' panel)
- (3) - Mofidy component**
  - \* edge value
  - \* node name(Green text, with a green arrow pointing to the 'MODIFY COMPONENT' panels)

## ADDING NODES

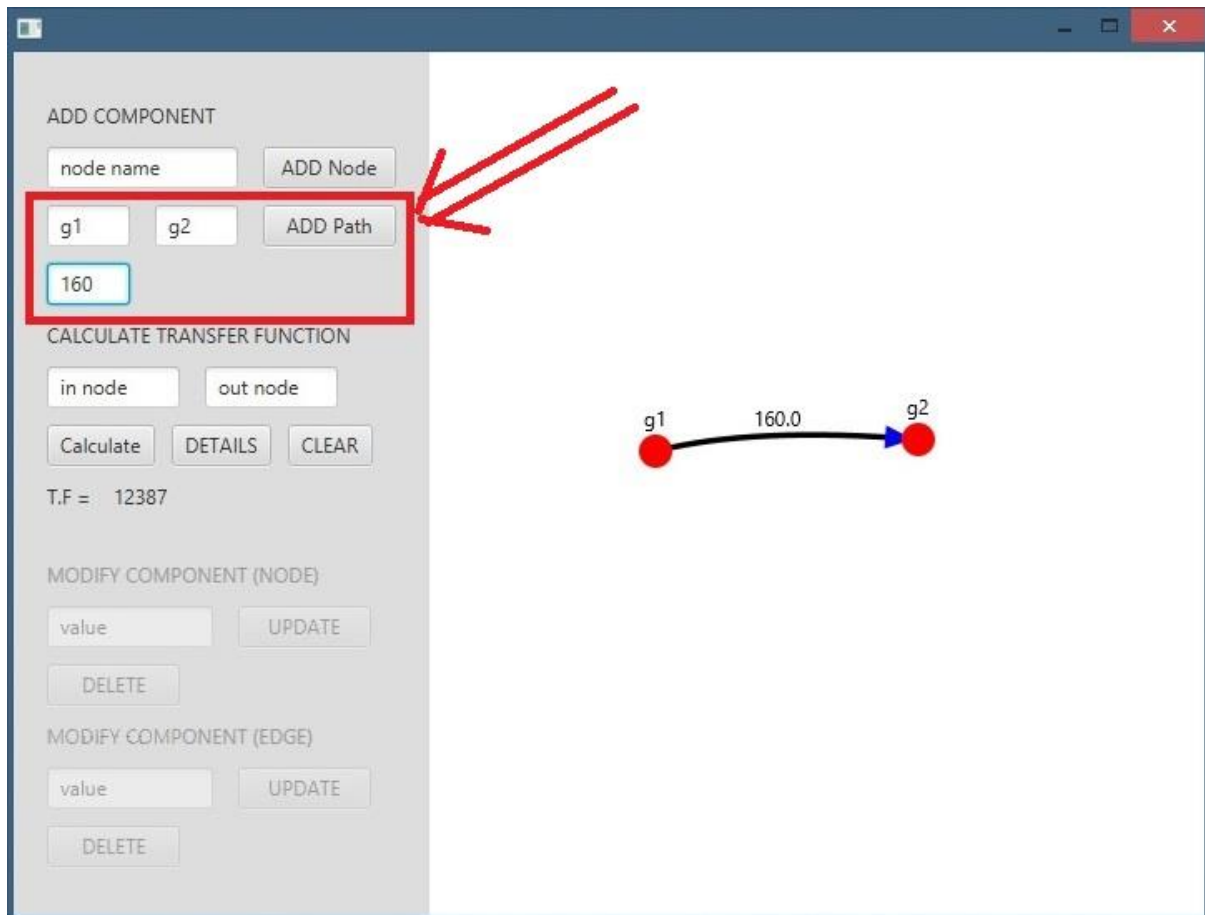
- 1) Type in node name in the “Node Name” text box
  - 2) Click “ADD Node” button
- And the node will appear in the working canvas



**Note : You Can Drag Nodes Around Freely**

## ADDING PATHS

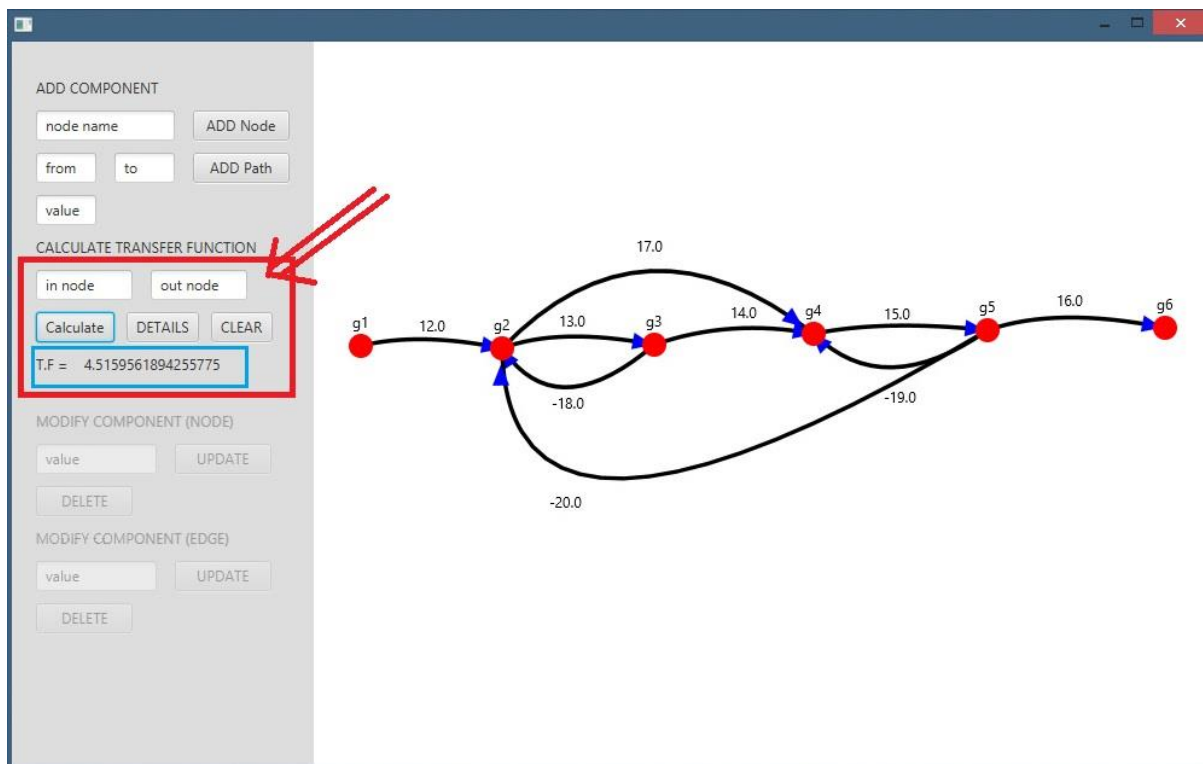
- 1) Specify "From Node" name & "To Node" name in "from" & "to" text boxes respectively
  - 2) Specify the "Gain" of the EDGE in the "value" text box
  - 3) Click "ADD Path" button
- And the path will appear in the working canvas as specified



**Note : You Can Drag Paths Around Freely**

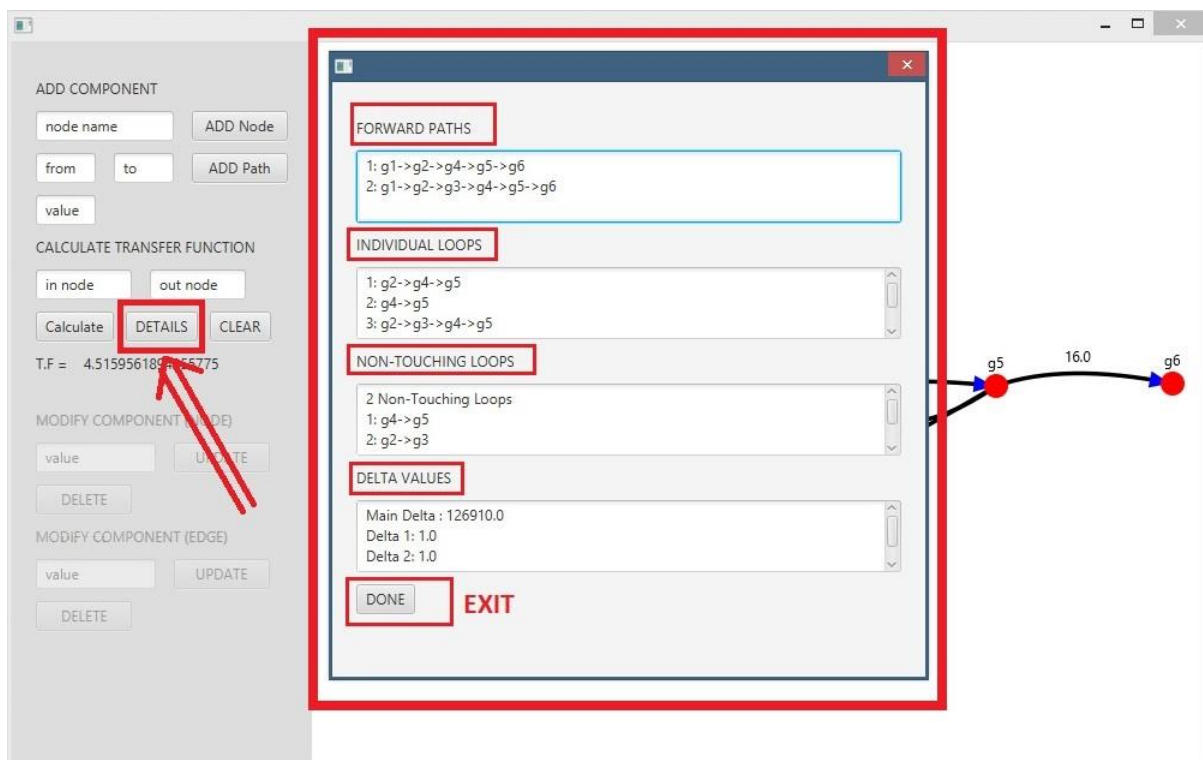
## CALCULATE TRANSFER FUNCTION

- 1) Specify "Input Node" name & "Output Node" name in "input node" & "output node" text boxes respectively
  - 2) Click "Calculate" button
- And Transfer Function value will show up in the value text box



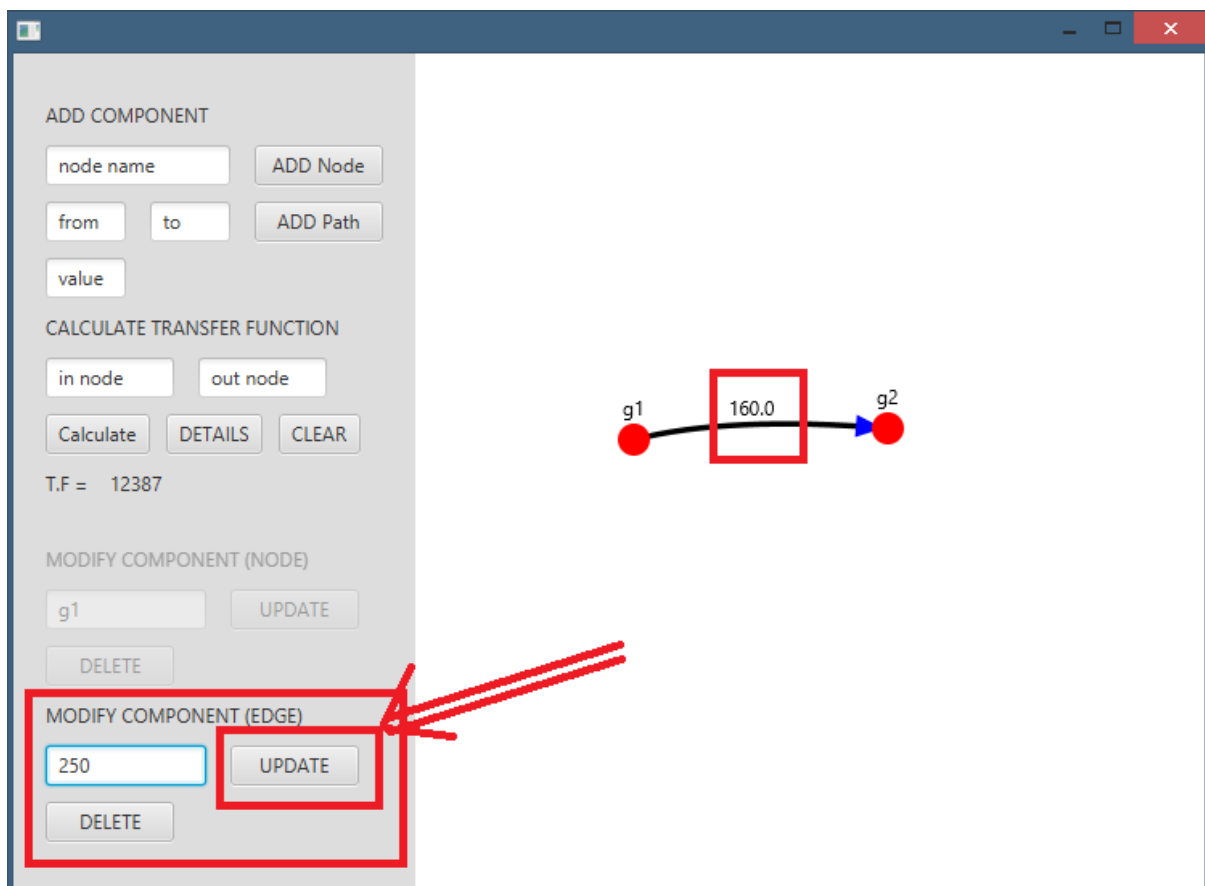
## VIEW SYSTEM DETAILS

- 1) Click on “Details” button
- 2) Popup window will show up containing Control Systems info
  - Forward Paths
  - Individual Loops
  - Non-Touching Loops
  - Delta Values



## UPDATE PATH GAIN VALUE

- 1) Double click the path you wish to modify
- 2) “Modify Path” module in the side panel will get enabled
- 3) Enter path’s new gain value and click “Update” button



## UPDATE NODE NAME

- 1) Double click the node you wish to modify
- 2) "Modify Node" module in the side panel will get enabled
- 3) Enter node new name and click "Update" button

