

# PRO 3475 – Gestão de Projetos

Aula Laboratório: **Super Decisions**

Monitores: Daniela e Lidiane



O quão racional você  
é ao decidir?

# Versão 3.2 do Super Decisions



Thomas L. Saaty (1926 - 2017) »



The **Super Decisions** is decision support software that implements the **AHP** and **ANP**.

The **Analytic Hierarchical Process (AHP)** and the **Analytic Network Process (ANP)** make it possible to include **intangibles** in decision making.

*AHP/ANP are the most powerful synthesis methodologies for combining judgment and data to effectively rank options and predict outcomes.*

## Super Decisions

SuperDecisions is decision making software based on the Analytic Hierarchy Process (AHP) and the Analytic Network Process (ANP). Decision making is all about setting priorities and the AHP and ANP, award-winning decision processes are the way to do that.

## AHP/ANP Vision Sponsors

MM

MaestroMeetings Inc is a nonprofit organization dedicated to promoting academic and social change collaborations by supporting its partners to plan, organize, and manage high-quality

# Passos do Analytic Hierarchy Process (AHP)

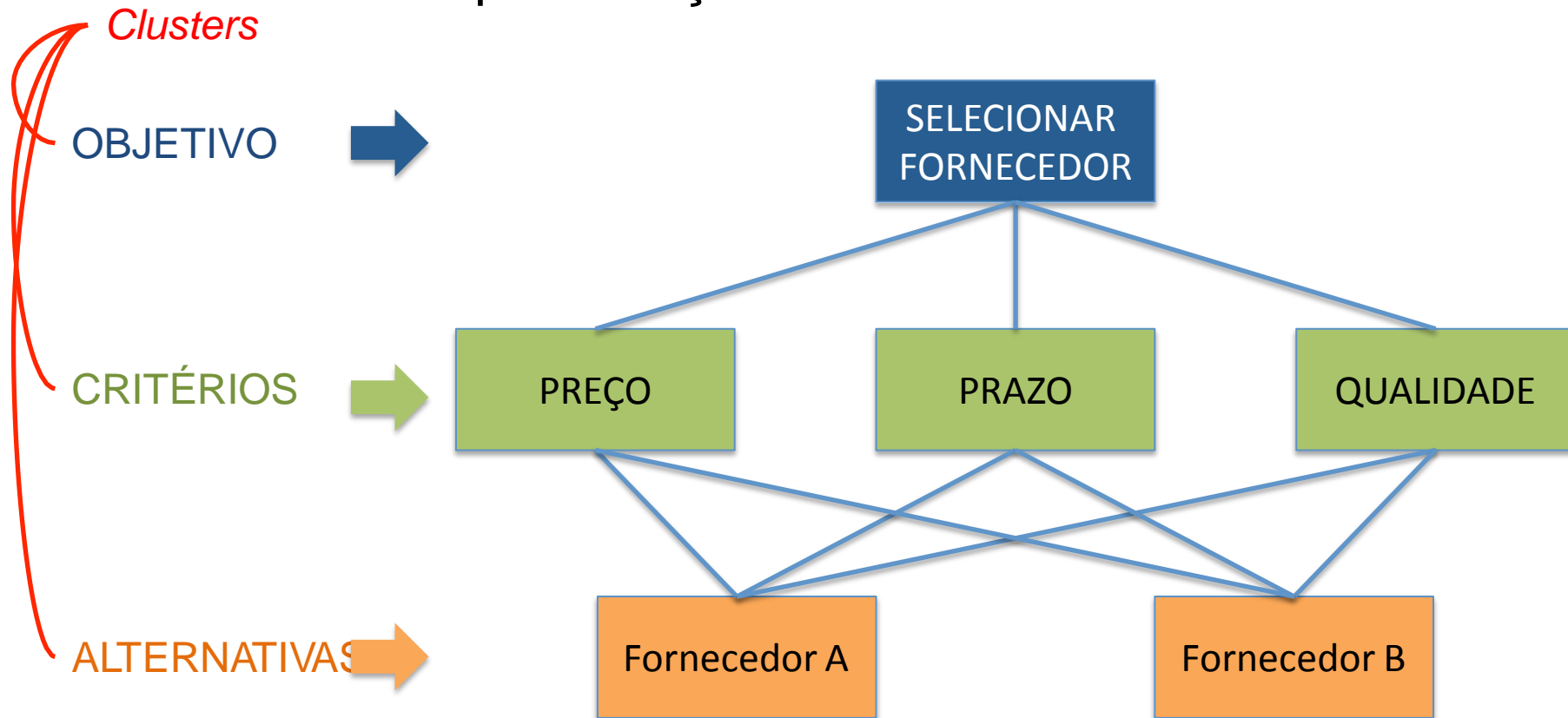


1. Definir o objetivo;
2. Estruturar os elementos em critérios, subcritérios, alternativas, etc.;
3. Comparar os elementos, de 2 em 2;
4. Calcular os pesos e verificar a taxa de consistência;
5. Avaliar as alternativas quanto à ponderação; e
6. Formar o ranking.

Vamos fazer isso no Super Decisions...

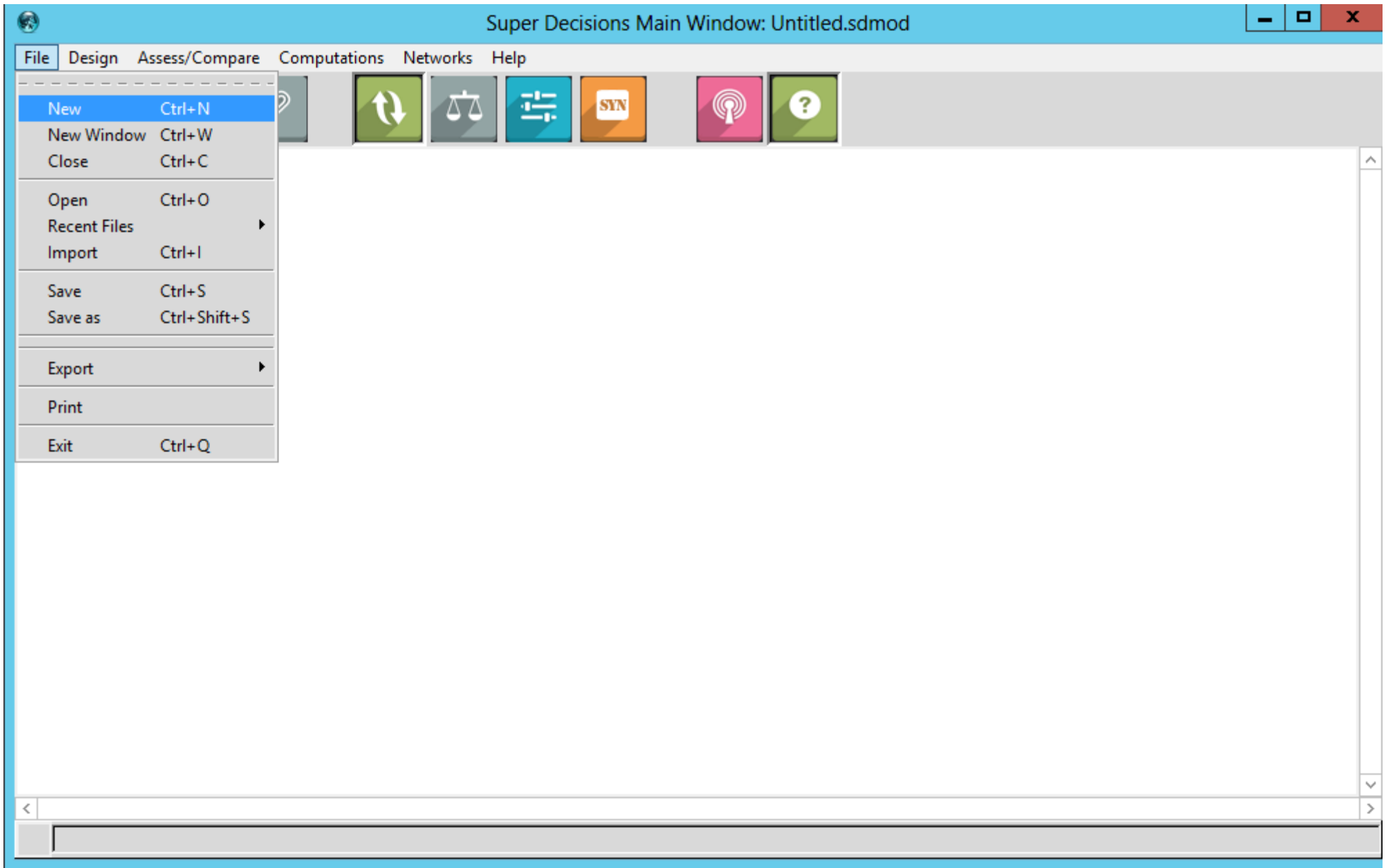
# Analytic Hierarchy Process (AHP)

Exemplo: seleção de um fornecedor...

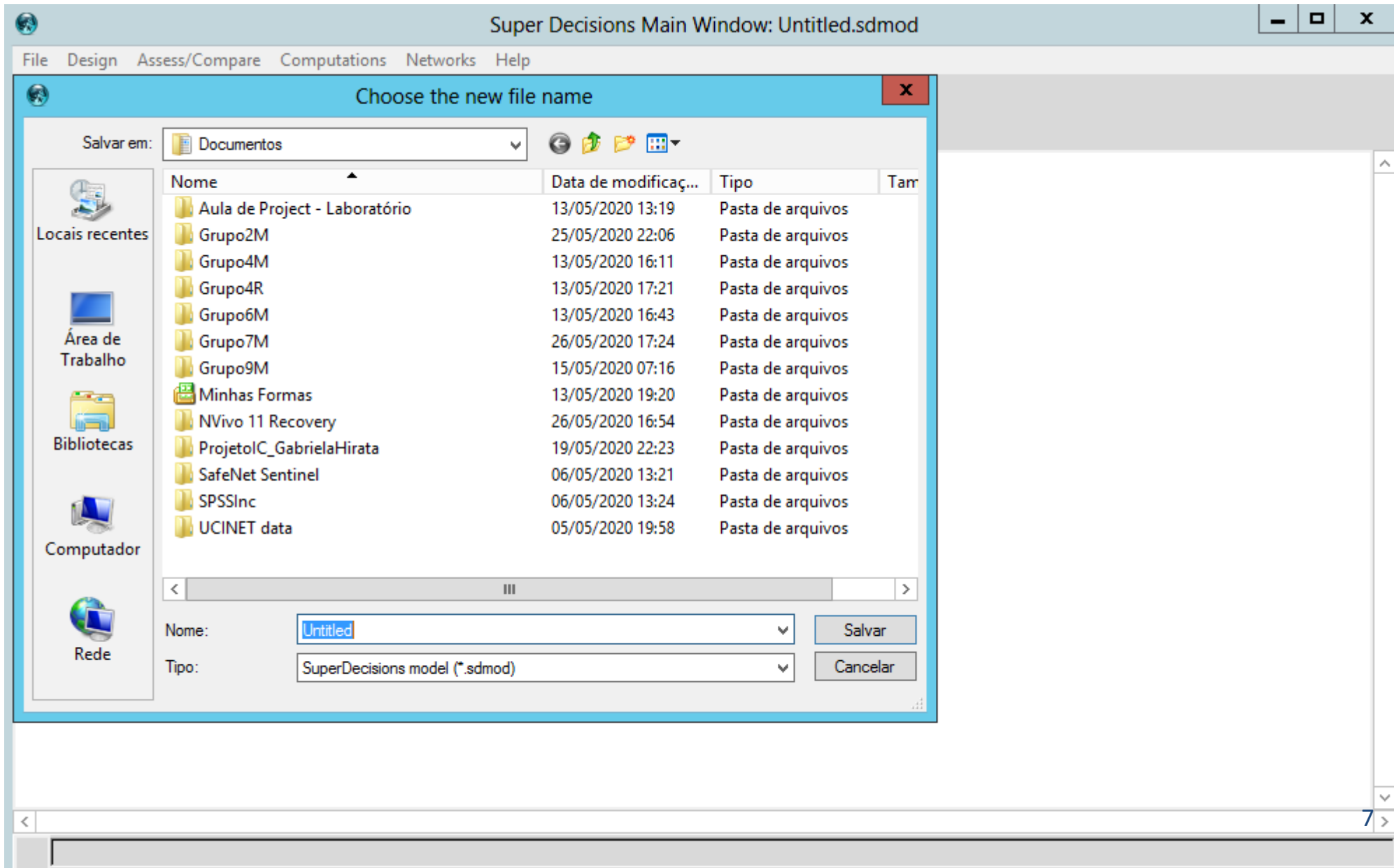


Vamos reproduzir esse modelo no software.

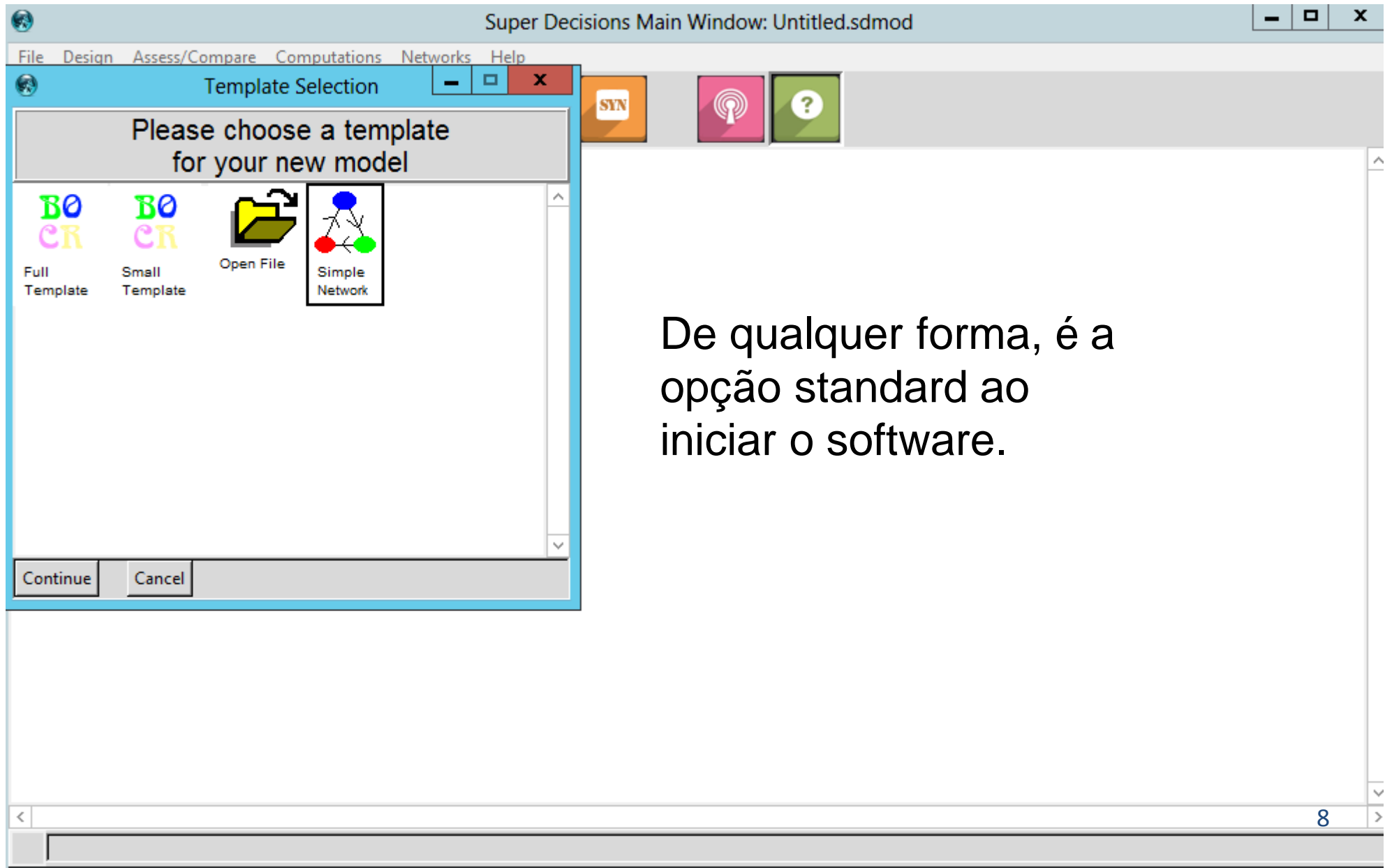
# Versão 2.1 do Super Decisions



# Versão 2.1 do Super Decisions



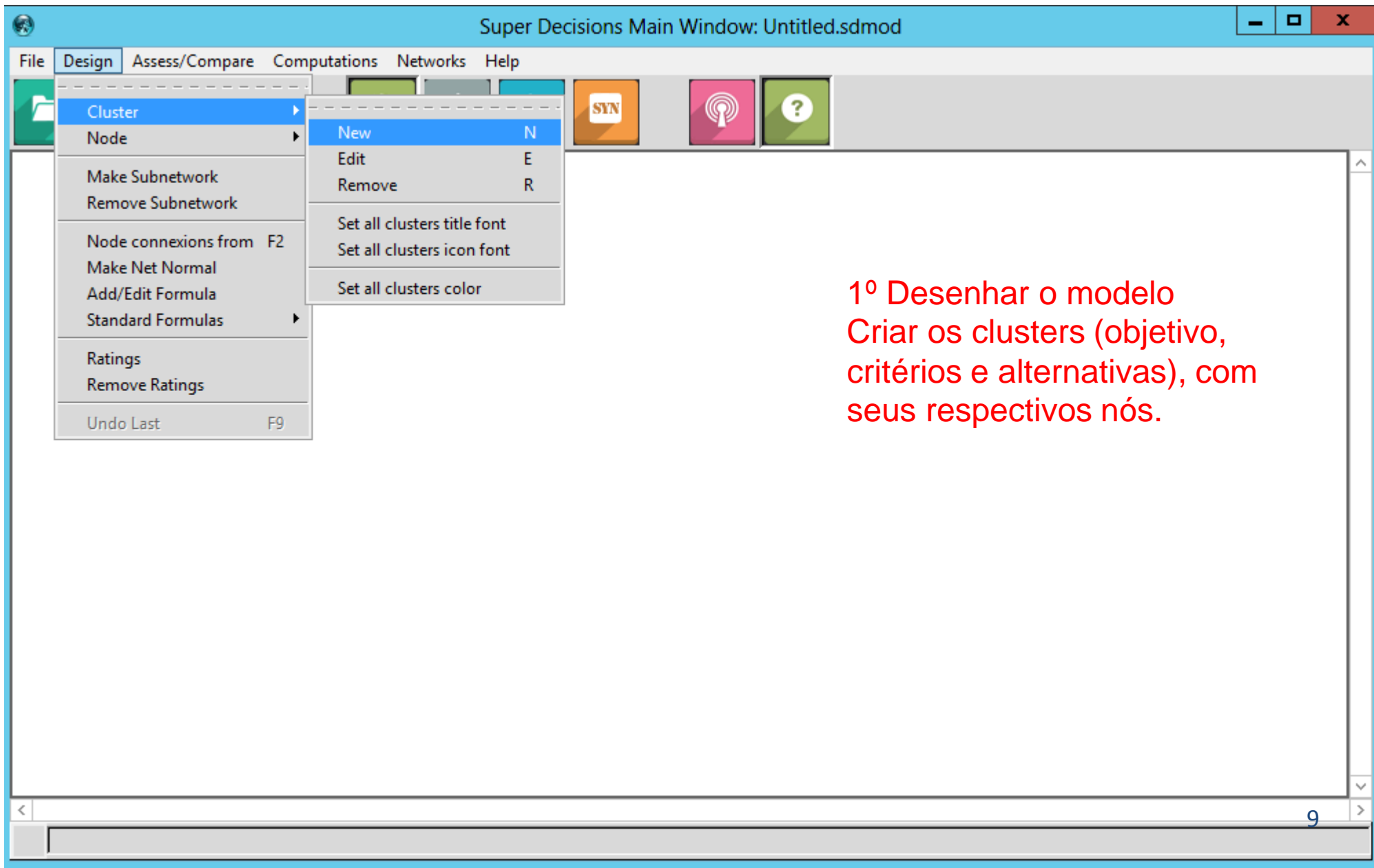
# Versão 2.1 do Super Decisions



De qualquer forma, é a opção standard ao iniciar o software.

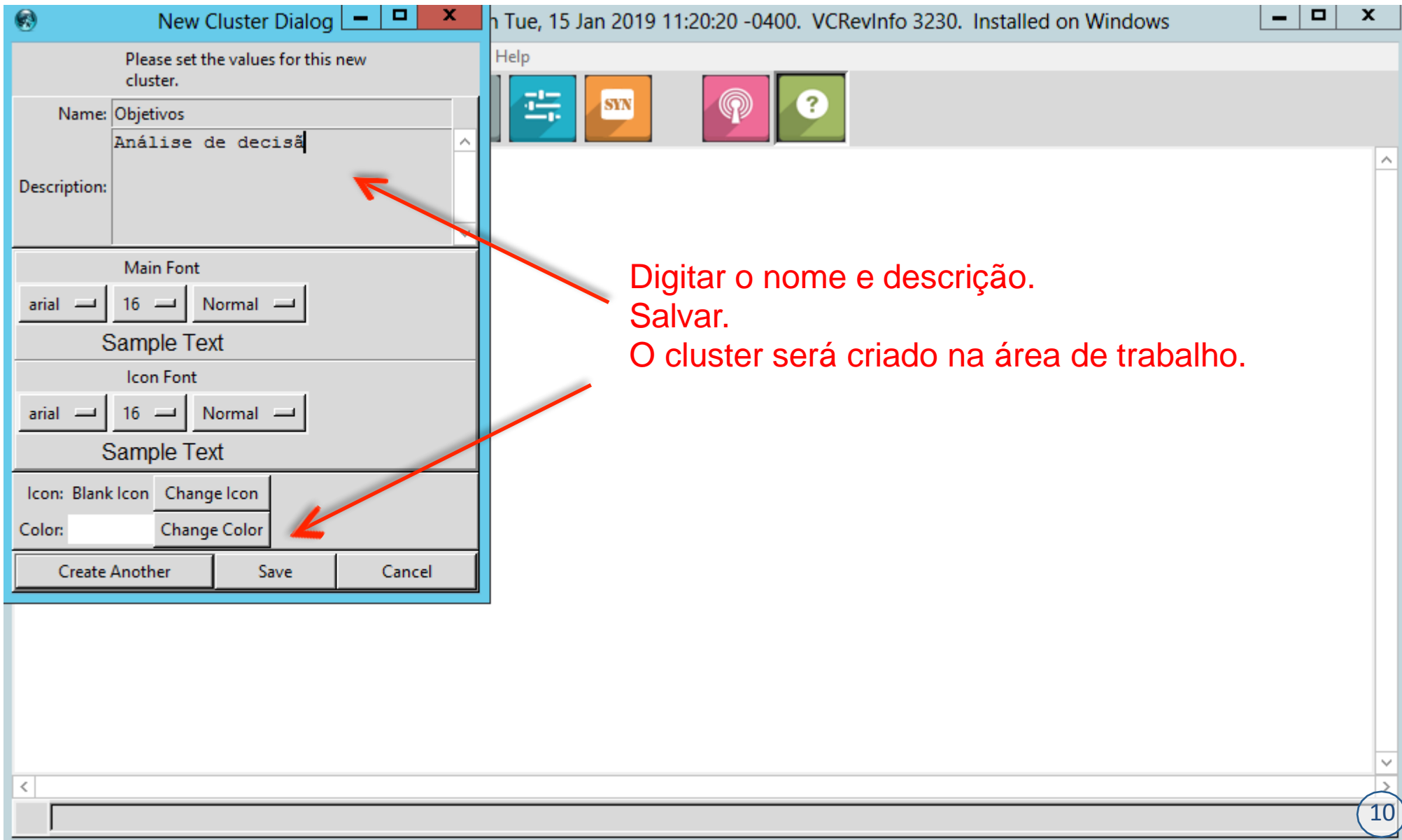


# Versão 2.1 do Super Decisions



1º Desenhar o modelo  
Criar os clusters (objetivo,  
critérios e alternativas), com  
seus respectivos nós.

# Versão 2.1 do Super Decisions



Please set the values for this new cluster.

Name:

Description:

Main Font  
arial 16 Normal

Sample Text

Icon Font  
arial 16 Normal

Sample Text

Icon: Blank Icon

Color:

h Tue, 15 Jan 2019 11:20:20 -0400. VCRvInfo 3230. Installed on Windows

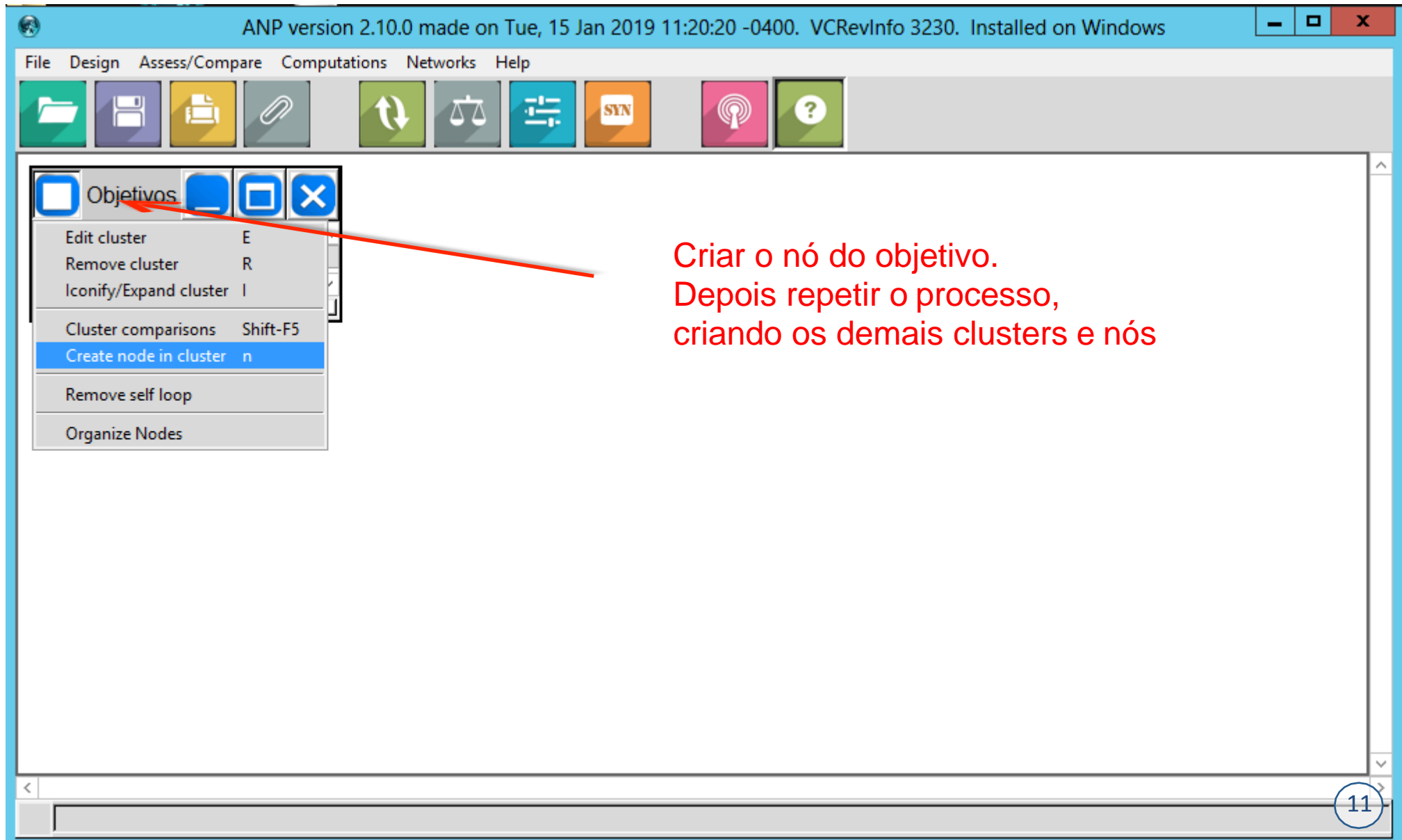
Help

10

Digitar o nome e descrição.  
Salvar.

O cluster será criado na área de trabalho.

# Versão 2.1 do Super Decisions



ANP version 2.10.0 made on Tue, 15 Jan 2019 11:20:20 -0400. VCRevInfo 3230. Installed on Windows

File Design Assess/Compare Computations Networks Help

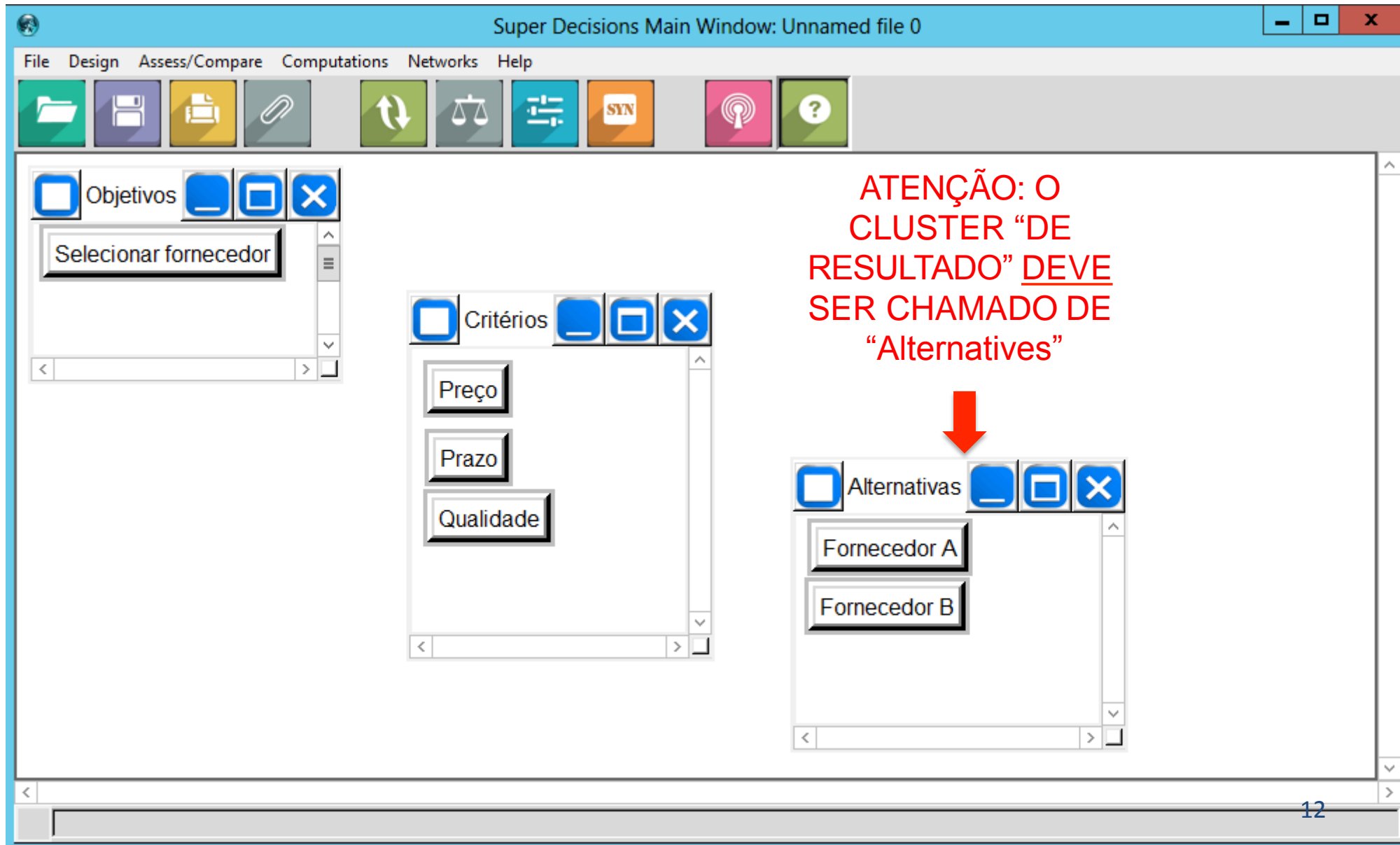
Objetivos

- Edit cluster E
- Remove cluster R
- Iconify/Expand cluster I
- Cluster comparisons Shift-F5
- Create node in cluster n**
- Remove self loop
- Organize Nodes

Criar o nó do objetivo.  
Depois repetir o processo,  
criando os demais clusters e nós

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# Versão 2.1 do Super Decisions



The screenshot displays the 'Super Decisions Main Window: Unnamed file 0'. The menu bar includes 'File', 'Design', 'Assess/Compare', 'Computations', 'Networks', and 'Help'. The toolbar contains icons for file operations, a refresh button, a balance scale, a list icon, a 'SYN' button, a signal icon, and a help icon.

Three panels are visible:

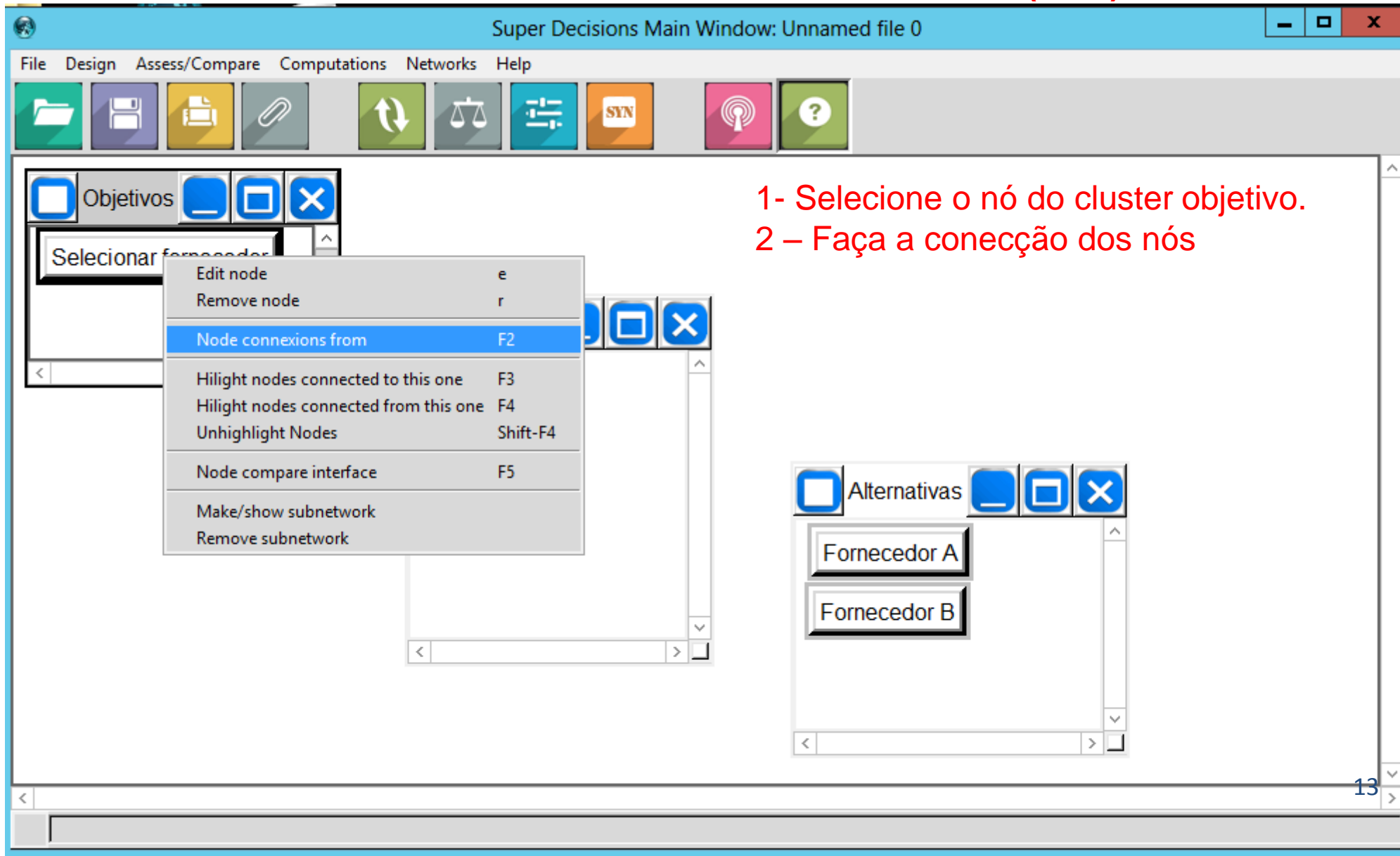
- Objetivos:** Contains a text box with 'Selecionar fornecedor'.
- Critérios:** Lists 'Preço', 'Prazo', and 'Qualidade'.
- Alternativas:** Lists 'Fornecedor A' and 'Fornecedor B'.

A red arrow points from the text 'ATENÇÃO: O CLUSTER "DE RESULTADO" DEVE SER CHAMADO DE "Alternatives"' to the 'Alternativas' panel.

**ATENÇÃO: O CLUSTER "DE RESULTADO" DEVE SER CHAMADO DE "Alternatives"**

# Versão 2.1 do Super Decisions

## PARA CRIAR OS RELACIONAMENTOS ENTRE VARIÁVEIS (NÓS) DO MODELO....



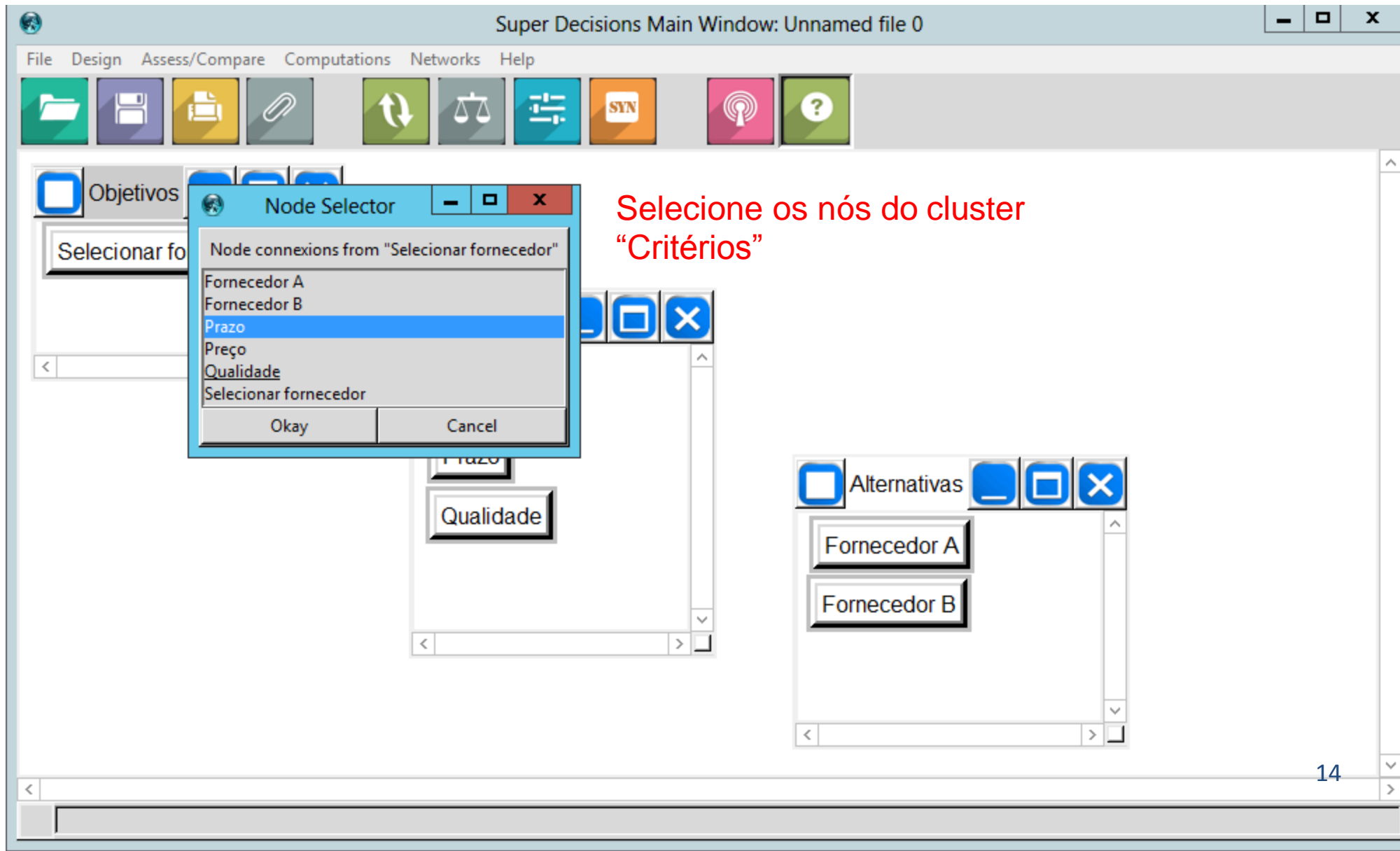
The screenshot shows the Super Decisions Main Window with the following elements:

- Menu Bar:** File, Design, Assess/Compare, Computations, Networks, Help.
- Toolbar:** Includes icons for file operations (Folder, Save, Print, Paperclip), navigation (Refresh, Undo, Redo), and analysis (Scales, Flowchart, SYN, Signal, Help).
- Objetivos Window:** A window titled 'Objetivos' with a search bar containing 'Selecionar fornecedor'. A context menu is open over it, listing actions such as 'Edit node', 'Remove node', 'Node connexions from' (highlighted), 'Hilight nodes connected to this one', 'Hilight nodes connected from this one', 'Unhighlight Nodes', 'Node compare interface', 'Make/show subnetwork', and 'Remove subnetwork'.
- Alternativas Window:** A window titled 'Alternativas' containing a list of nodes: 'Fornecedor A' and 'Fornecedor B'.

1- Selecione o nó do cluster objetivo.  
2 – Faça a conexão dos nós

# Versão 2.1 do Super Decisions

**PARA CRIAR OS RELACIONAMENTOS ENTRE VARIÁVEIS (NÓS) DO MODELO....**



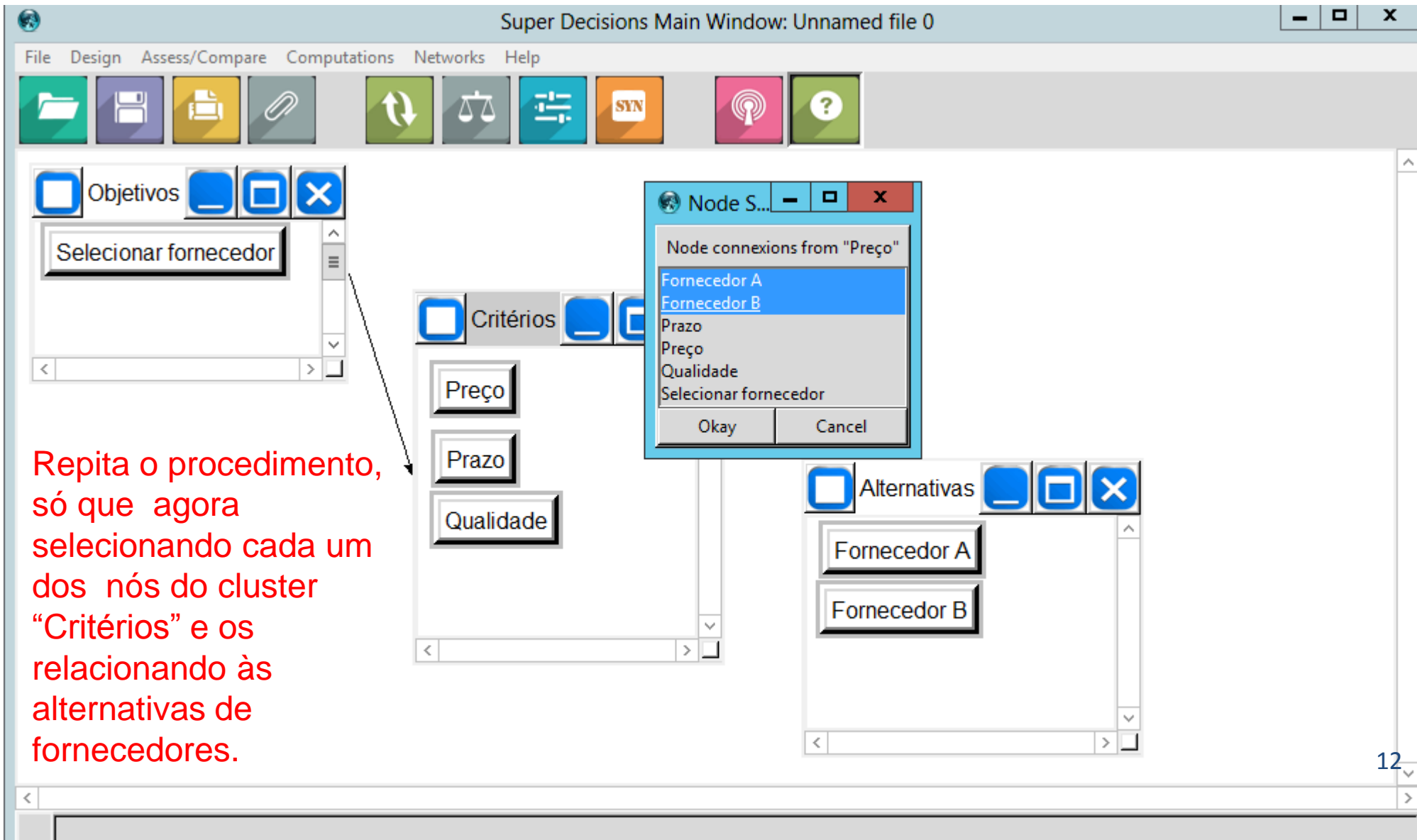
The screenshot displays the Super Decisions Main Window with the following elements:

- Menu Bar:** File, Design, Assess/Compare, Computations, Networks, Help.
- Toolbar:** Includes icons for file operations, a refresh button, a balance scale, a list icon, a SYN button, a network icon, and a help icon.
- Objectives Panel:** Titled "Objetivos", it contains a "Selecionar fornecedor" node.
- Node Selector Dialog:** A modal dialog box titled "Node Selector" is open, showing "Node connexions from 'Selecionar fornecedor'". The list includes "Fornecedor A", "Fornecedor B", "Prazo" (highlighted), "Preço", "Qualidade", and "Selecionar fornecedor". "Okay" and "Cancel" buttons are at the bottom.
- Cluster of Nodes:** A cluster of nodes is visible, including "Prazo" and "Qualidade".
- Alternatives Panel:** Titled "Alternativas", it contains "Fornecedor A" and "Fornecedor B" nodes.

Selezione os nós do cluster "Critérios"

# Versão 2.1 do Super Decisions

**PARA CRIAR OS RELACIONAMENTOS ENTRE VARIÁVEIS (NÓS) DO MODELO....**



Super Decisions Main Window: Unnamed file 0

File Design Assess/Compare Computations Networks Help

Objetivos

Selecionar fornecedor

Critérios

Preço

Prazo

Qualidade

Node S...

Node connexions from "Preço"

Fornecedor A

Fornecedor B

Prazo

Preço

Qualidade

Selecionar fornecedor

Okay Cancel

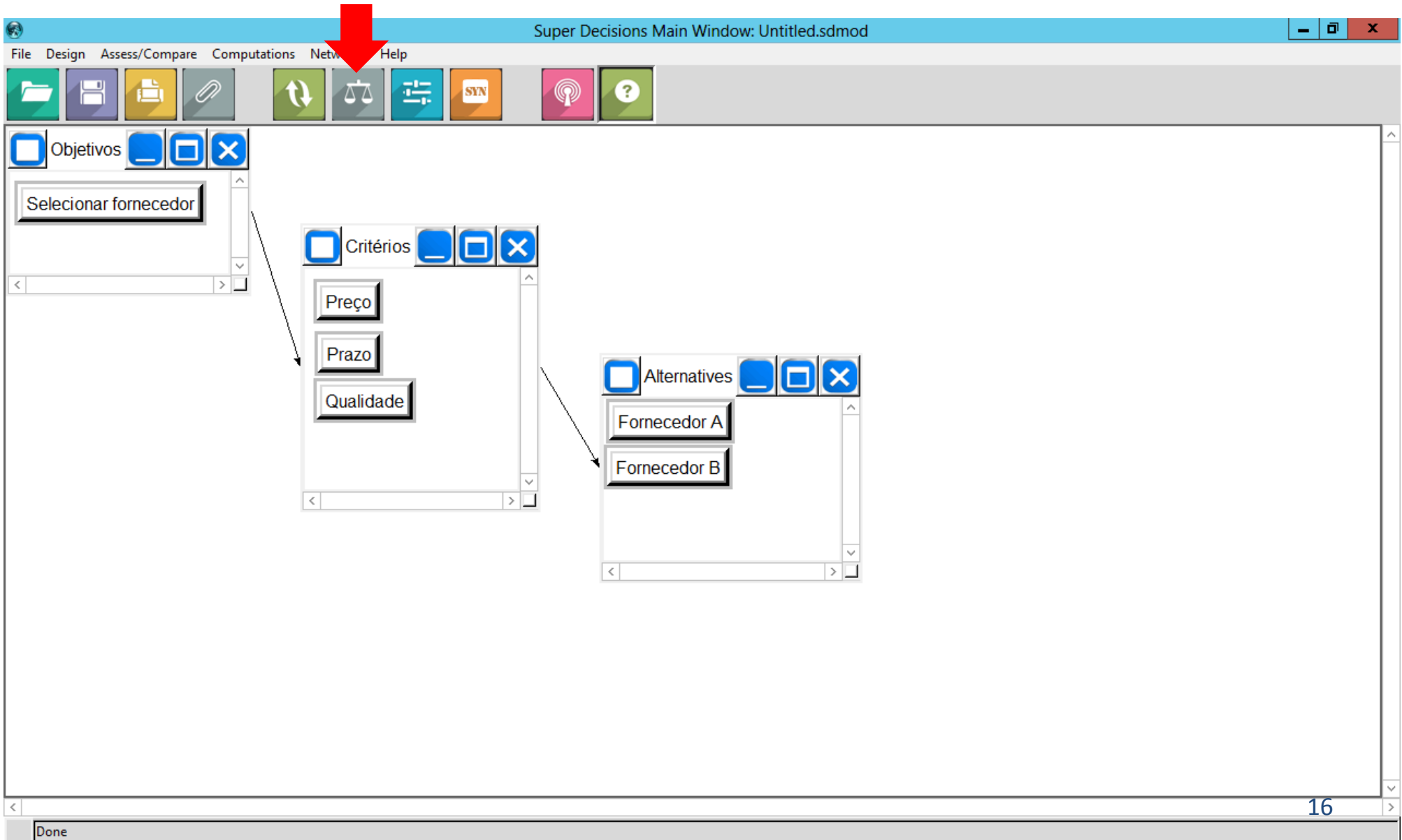
Alternativas

Fornecedor A

Fornecedor B

Repita o procedimento, só que agora selecionando cada um dos nós do cluster "Critérios" e os relacionando às alternativas de fornecedores.

# Versão 2.1 do Super Decisions



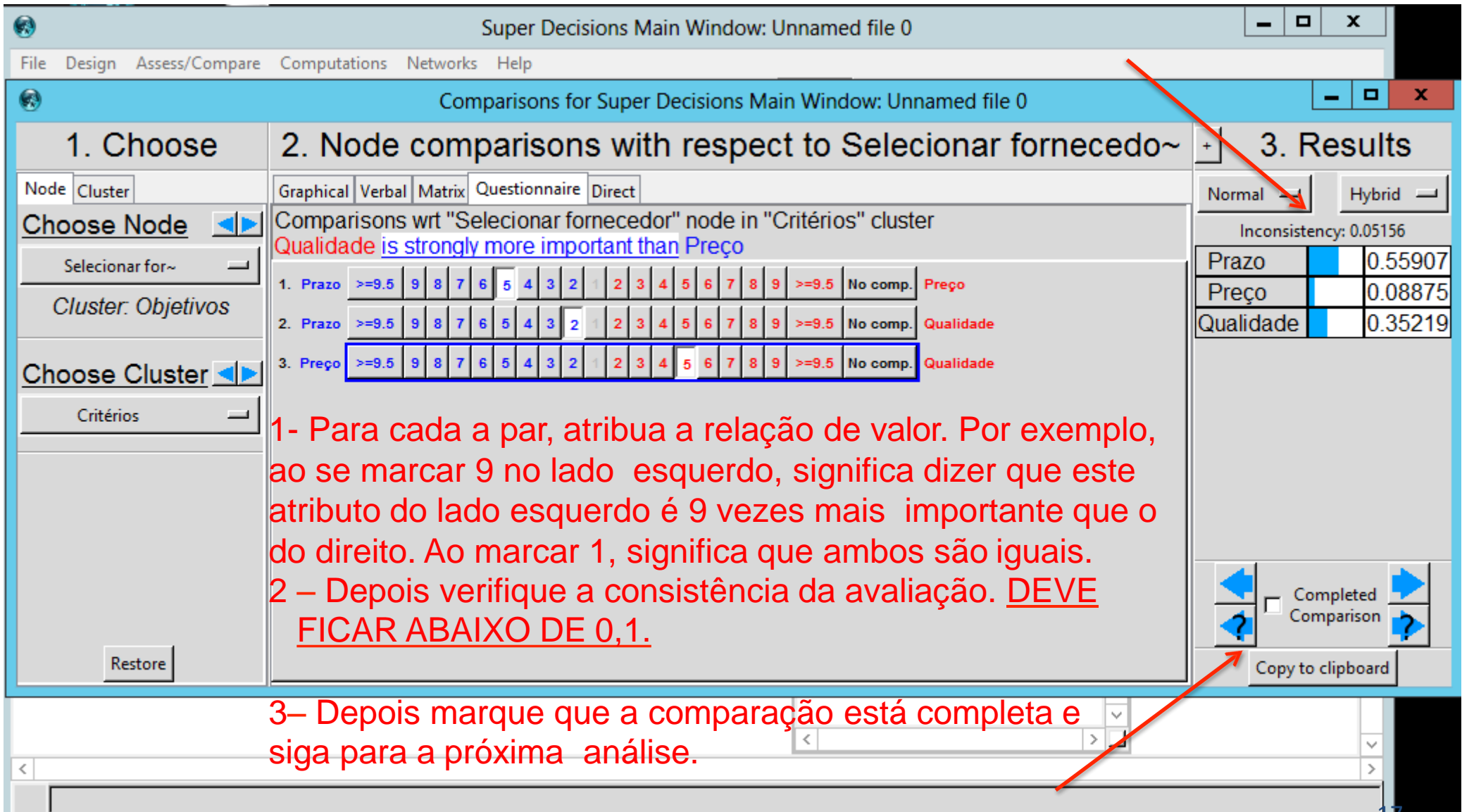
The screenshot displays the Super Decisions Main Window titled "Untitled.sdmod". The interface includes a menu bar (File, Design, Assess/Compare, Computations, Network, Help) and a toolbar with various icons. A red arrow points to the 'Network' icon in the toolbar. The main workspace contains three floating panels:

- Objetivos:** A panel with a search box containing the text "Selecionar fornecedor".
- Critérios:** A panel containing a list of criteria: "Preço", "Prazo", and "Qualidade".
- Alternatives:** A panel containing a list of alternatives: "Fornecedor A" and "Fornecedor B".

Arrows indicate the flow of information from the search box to the criteria list, and from the criteria list to the alternatives list. The status bar at the bottom shows "Done" and the page number "16".



# Versão 2.1 do Super Decisions



The screenshot shows the 'Comparisons for Super Decisions Main Window: Unnamed file 0' interface. It is divided into three main sections: 1. Choose, 2. Node comparisons with respect to 'Selecionar fornecedor', and 3. Results.

**1. Choose**

Node: Cluster  
Choose Node: Selecionar for~  
Cluster: Objetivos  
Choose Cluster: Critérios  
Restore

**2. Node comparisons with respect to Selecionar fornecedor**

Graphical Verbal Matrix Questionnaire Direct  
Comparisons wrt "Selecionar fornecedor" node in "Critérios" cluster  
Qualidade is strongly more important than Preço

1. Prazo	>=9.5	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	>=9.5	No comp.	Preço
2. Preço	>=9.5	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	>=9.5	No comp.	Qualidade
3. Preço	>=9.5	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	>=9.5	No comp.	Qualidade

**3. Results**

Normal Hybrid  
Inconsistency: 0.05156

Prazo	0.55907
Preço	0.08875
Qualidade	0.35219

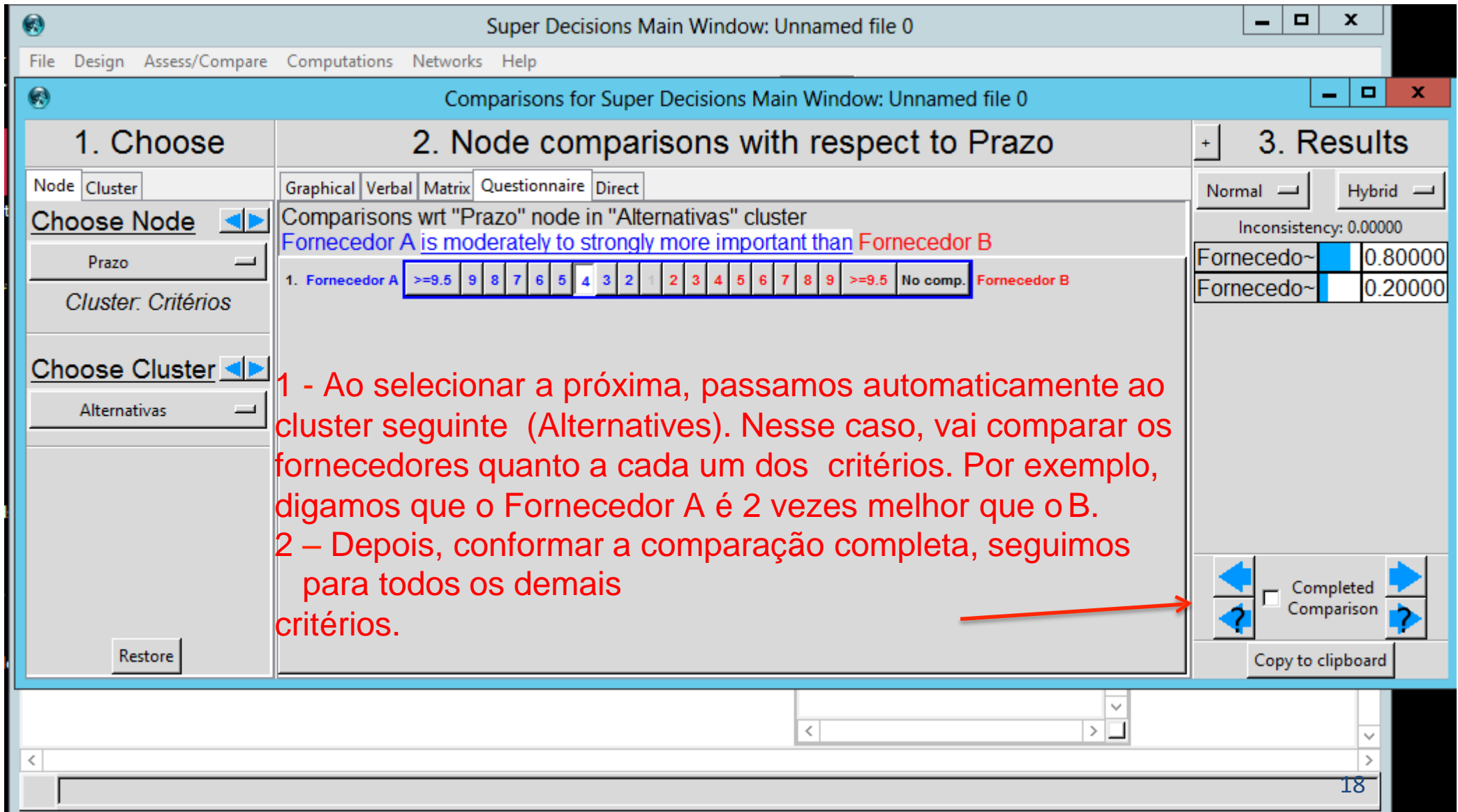
Completed Comparison  
Copy to clipboard

**1- Para cada a par, atribua a relação de valor. Por exemplo, ao se marcar 9 no lado esquerdo, significa dizer que este atributo do lado esquerdo é 9 vezes mais importante que o do direito. Ao marcar 1, significa que ambos são iguais.**

**2 – Depois verifique a consistência da avaliação. DEVE FICAR ABAIXO DE 0,1.**

**3– Depois marque que a comparação está completa e siga para a próxima análise.**

# Versão 2.1 do Super Decisions



The screenshot shows the 'Super Decisions Main Window: Unnamed file 0' with a menu bar (File, Design, Assess/Compare, Computations, Networks, Help). The main window is titled 'Comparisons for Super Decisions Main Window: Unnamed file 0' and is divided into three panes:

- 1. Choose:** Contains 'Choose Node' (Prazo) and 'Choose Cluster' (Alternativas) buttons.
- 2. Node comparisons with respect to Prazo:** Shows a comparison between 'Fornecedor A' and 'Fornecedor B'. The text reads: 'Comparisons wrt "Prazo" node in "Alternativas" cluster' and 'Fornecedor A is moderately to strongly more important than Fornecedor B'. Below this is a scale from 1 to 9, with '4' selected. The scale is labeled '>=9.5' on both ends and 'No comp.' in the middle.
- 3. Results:** Shows 'Inconsistency: 0.00000' and a table of results:

Fornecedo~	0.80000
Fornecedo~	0.20000

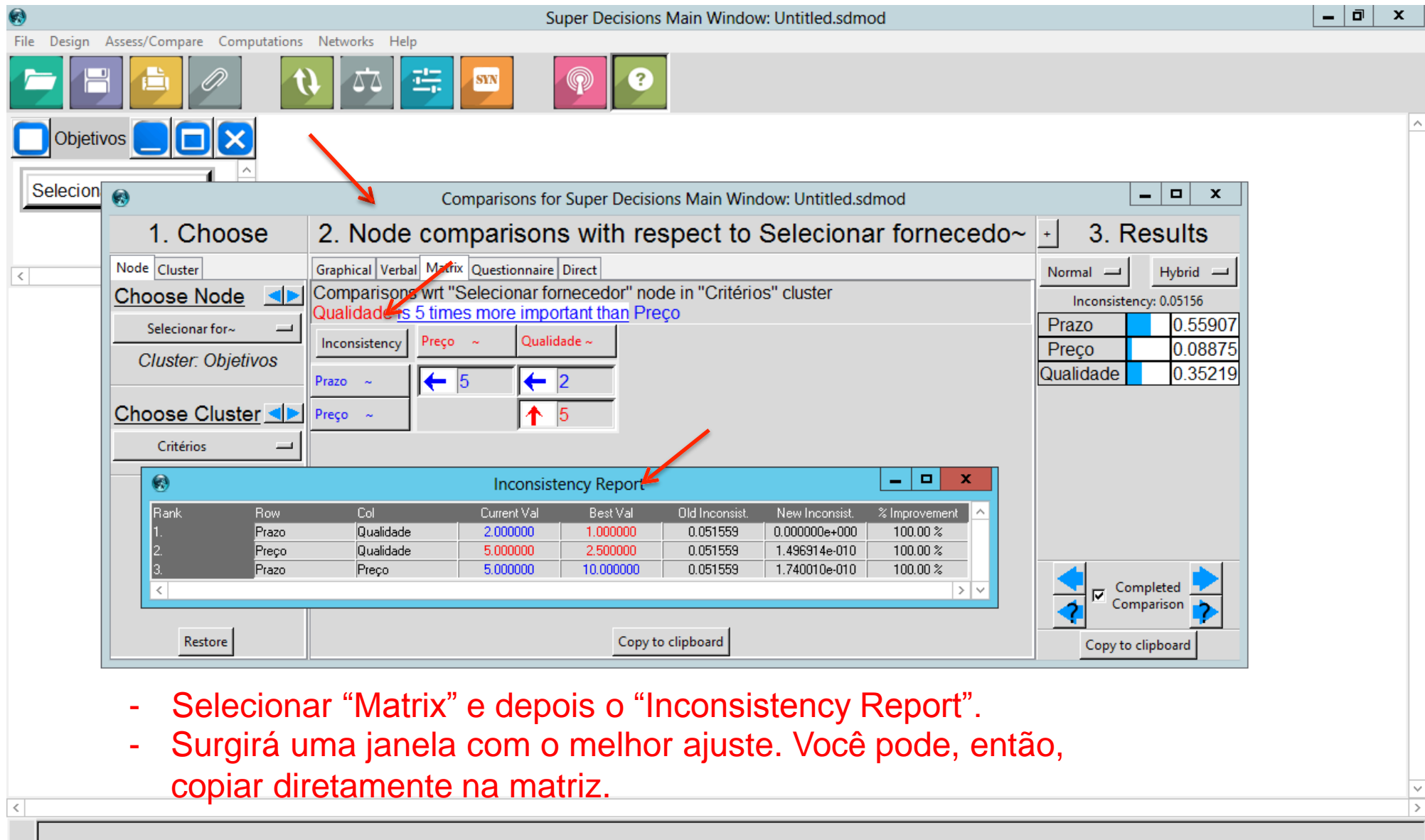
Red text annotations explain the workflow:

- 1 - Ao selecionar a próxima, passamos automaticamente ao cluster seguinte (Alternatives). Nesse caso, vai comparar os fornecedores quanto a cada um dos critérios. Por exemplo, digamos que o Fornecedor A é 2 vezes melhor que o B.
- 2 - Depois, conformar a comparação completa, seguimos para todos os demais critérios.

An orange arrow points from the red text to the 'Completed Comparison' checkbox in the bottom right of the interface.

# Versão 2.1 do Super Decisions

**AJUSTE “FINO”, SE NECESSÁRIO...**



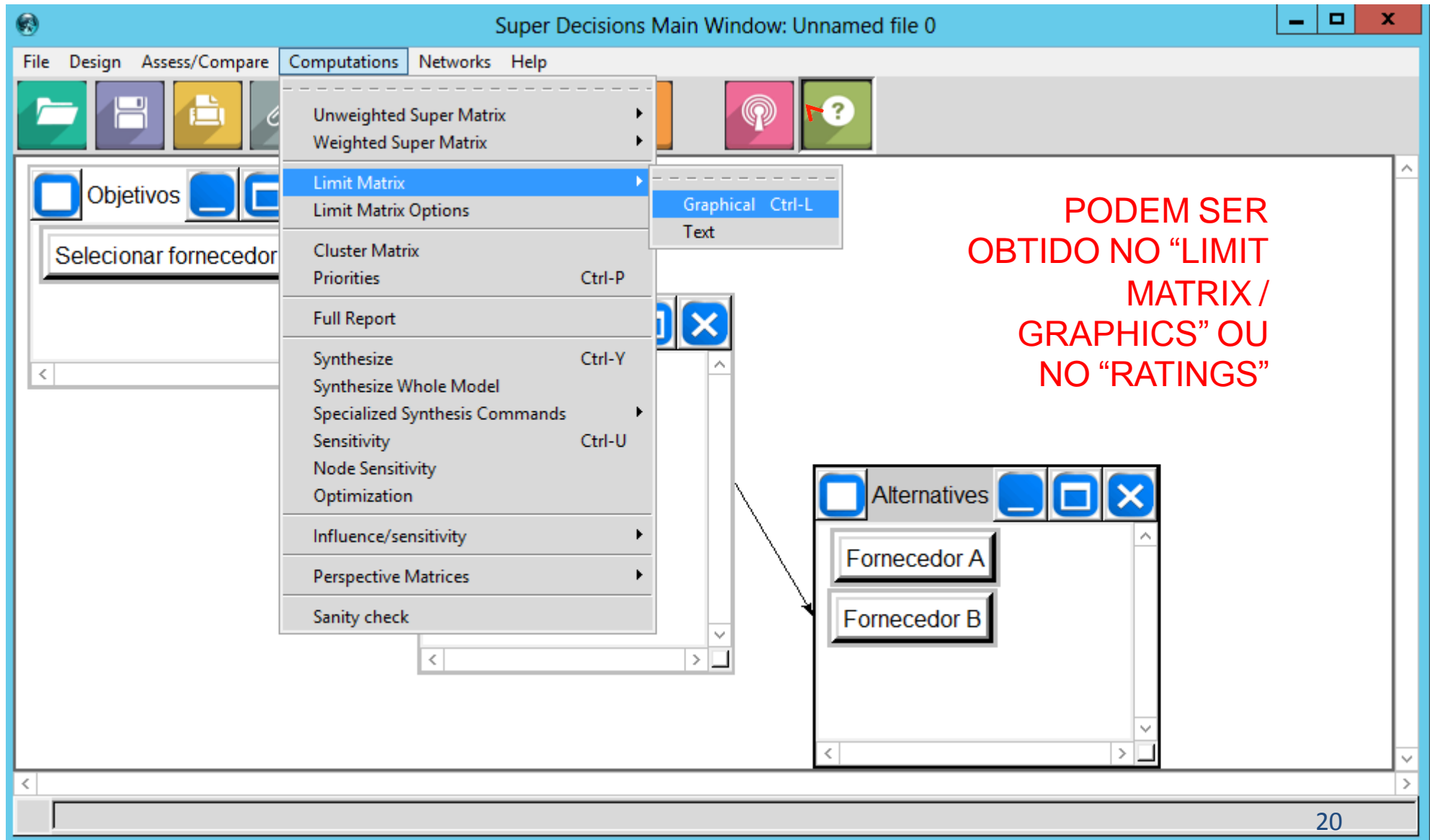
The screenshot displays the Super Decisions Main Window with the 'Comparisons' dialog box open. The dialog is divided into three sections: '1. Choose', '2. Node comparisons with respect to Seleccionar fornecedor', and '3. Results'. In the '2. Node comparisons' section, the 'Matrix' tab is selected, and a comparison is being made between 'Qualidade' and 'Preço'. The current value is 5.000000, and the best value is 1.000000. The 'Inconsistency Report' window is also open, showing a table with the following data:

Rank	Row	Col	Current Val	Best Val	Old Inconsist.	New Inconsist.	% Improvement
1.	Preço	Qualidade	2.000000	1.000000	0.051559	0.000000e+000	100.00 %
2.	Preço	Qualidade	5.000000	2.500000	0.051559	1.496914e-010	100.00 %
3.	Preço	Preço	5.000000	10.000000	0.051559	1.740010e-010	100.00 %

Below the table, there are buttons for 'Restore' and 'Copy to clipboard'. The '3. Results' section shows the inconsistency value of 0.05156 and a comparison matrix for 'Prazo', 'Preço', and 'Qualidade'.

- Seleccionar “Matrix” e depois o “Inconsistency Report”.
- Surgirá uma janela com o melhor ajuste. Você pode, então, copiar diretamente na matriz.

# Versão 2.1 do Super Decisions



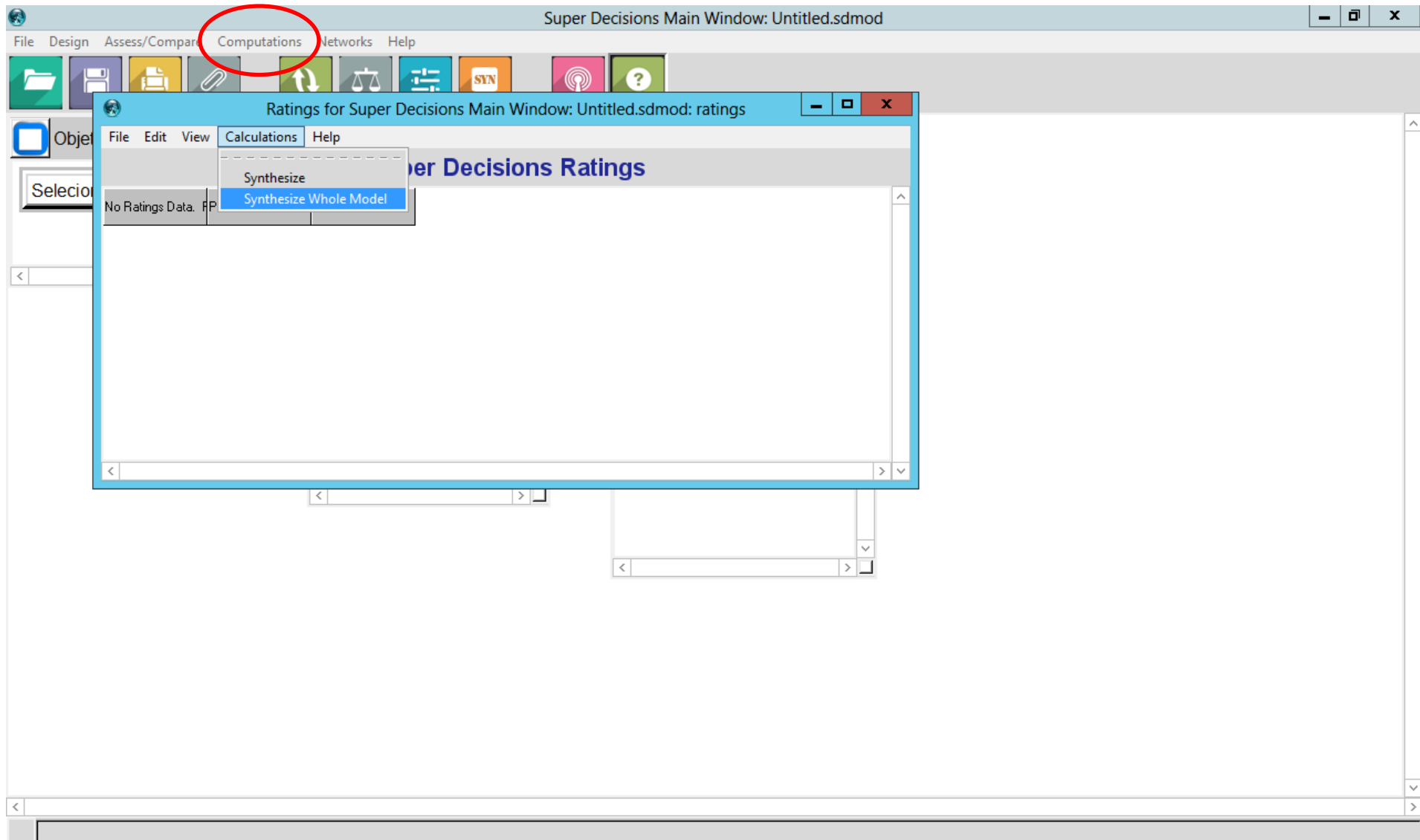
The screenshot displays the 'Super Decisions Main Window: Unnamed file 0'. The 'Computations' menu is open, showing options such as 'Unweighted Super Matrix', 'Weighted Super Matrix', 'Limit Matrix', 'Limit Matrix Options', 'Cluster Matrix', 'Priorities', 'Full Report', 'Synthesize', 'Synthesize Whole Model', 'Specialized Synthesis Commands', 'Sensitivity', 'Node Sensitivity', 'Optimization', 'Influence/sensitivity', 'Perspective Matrices', and 'Sanity check'. The 'Limit Matrix' option is selected, and its sub-menu is open, showing 'Graphical Ctrl-L' and 'Text'. The 'Alternatives' window is also visible, showing a list of alternatives: 'Fornecedor A' and 'Fornecedor B'. The 'Objetivos' window is also visible, showing 'Selecionar fornecedor'.

PODEM SER  
OBTIDO NO "LIMIT  
MATRIX/  
GRAPHICS" OU  
NO "RATINGS"



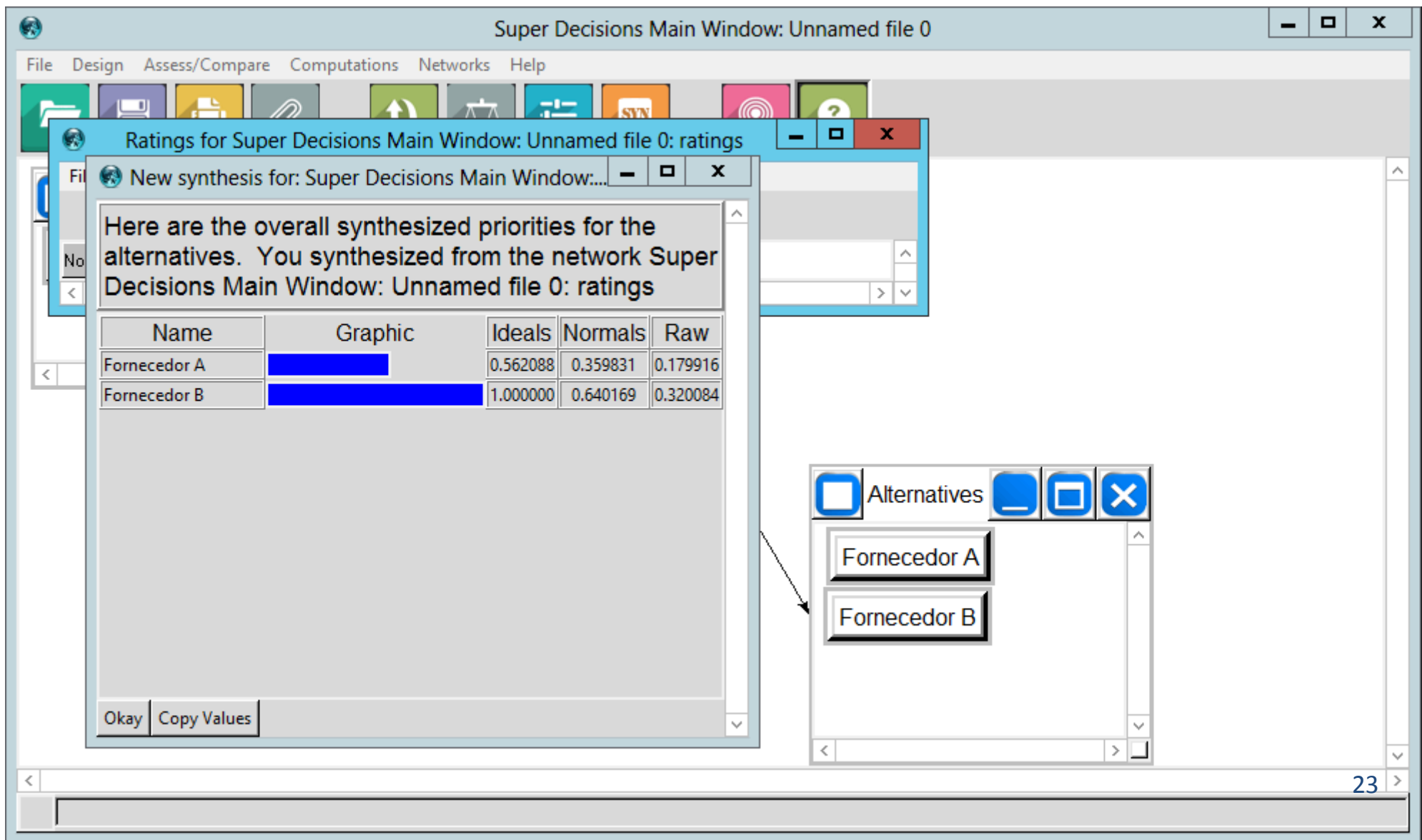
# Versão 2.1 do Super Decisions

**RESULTADOS NO “RATINGS” (MAIS CLARO)...**



# Versão 2.1 do Super Decisions

**RESULTADOS NO “RATINGS” (MAIS CLARO)...**





Super Decisions Main Window: Unnamed file 0

File Design Assess/Compare Computations Networks Help

Ratings for Super Decisions Main Window: Unnamed file 0: ratings

New synthesis for: Super Decisions Main Window: Unnamed file 0: ratings

Here are the overall synthesized priorities for the alternatives. You synthesized from the network Super Decisions Main Window: Unnamed file 0: ratings

Name	Graphic	Ideals	Normals	Raw
Fornecedor A		0.562088	0.359831	0.179916
Fornecedor B		1.000000	0.640169	0.320084

Alternatives

- Fornecedor A
- Fornecedor B

Okay Copy Values

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