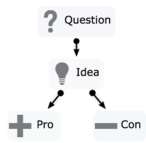


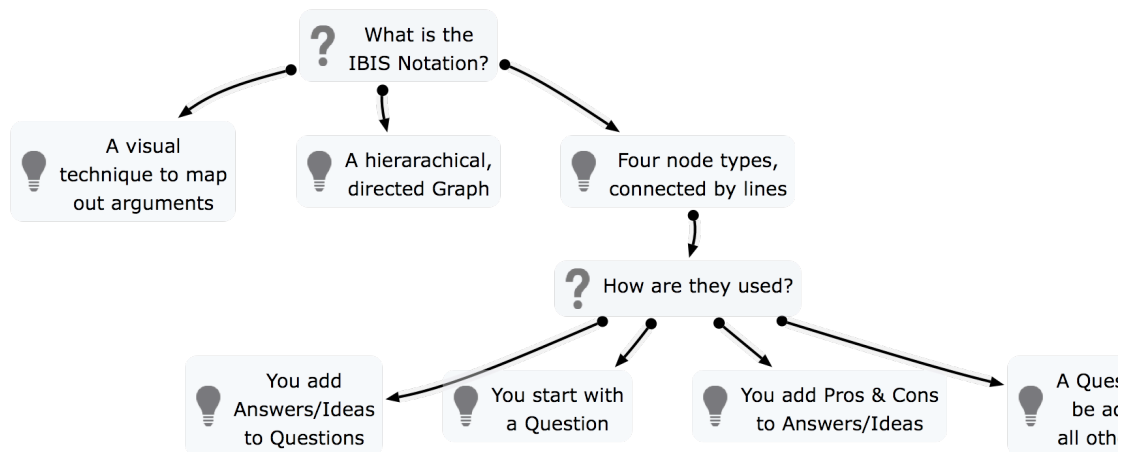
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# What is the IBIS Notation?

The Issue-Based Information System (IBIS) Notation was invented by Werner Kunz and Horst Rittel as an argumentation-based approach to support analysis of so-called "wicked" problems. However, IBIS Notation can be used for all problems, whether wicked or not.



The IBIS Notation is a simple graphical presentation of questions and answers with their respective advantages and disadvantages. A question can have any number of answers or ideas. Any answer/idea can have any number of arguments for each answer, split into the two categories of pros and cons. The result is a simple graphical representation of a question. You can use it for any kind of question and you have a short exploration of a topic. It would be of interest for all those that prefer a graphic instead of text. You might consider it to be easier to analyse than a text, or it might be prettier to look at, depending on your artistic abilities with the pencil or on the application that you used.

The concept of the IBIS notation are deliberately kept simple to make it useful for many use cases. The only so-to-say "complication" is that you can attach a question to any other item. As such you can

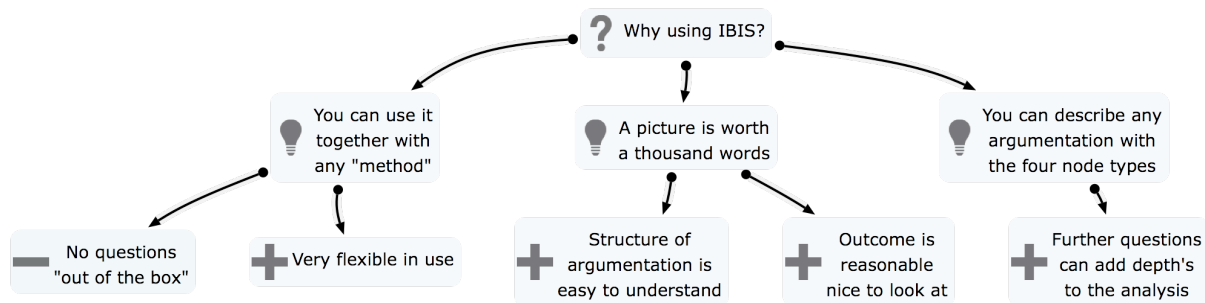
- question a question ("Shouldn't we rather discuss X?" or "What are the assumptions behind this question?"), or you can
- question an answer ("To follow this idea, what would we need to take into consideration?", "What proof do we have for this statement?"), or you can
- question a pro or con ("What could we do to overcome this disadvantage?").

Each of these questions would then have it's own structure with answers/ ideas and pros&cons. And of course can have further questions attached.

Only the size of your paper or electronic canvas limits how big an IBIS diagram might become. You as the creator decide how many questions you want to include and how “deep” you want to go with your diagram.

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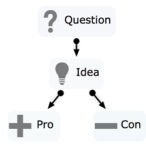
“A picture says more than 1000 words.” Did you ever hear this? Do you agree? The IBIS notation allows you to visualise the structure of an argument. Have you ever read an article where you have lost the overview? With IBIS the structure is graphical and hence easier to understand. And easier to change.

At the same time is the IBIS Notation very generic and can be used in order to express all arguments. That makes it very useful. Even the most complex discussions can be expressed as a simple IBIS graph. Whether it contains only the thoughts of one person or of many.

The only drawback is that IBIS doesn't come with any guidance on which questions to ask. On the plus it is able to be used with all methods/frameworks/approaches. Use it with the CATWOE “method” or use it together with the 5 Whys “method”. Choose your favourite method/framework/approach or choose the best for the given use case. Be ensured that the IBIS notation will be flexible enough to capture the structure of the outcome.

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# The IBIS Editor

Visual Thinking with IBIS is an editor for the IBIS Notation by allowing you to draw all four different node types (Question, Idea/Answer, Pro, Con) and connect them. The editor guides in order to keep the rules and let's you go through invalid IBIS graphs in order to do a bigger change.

IBIS Notation is a specialised graph that knows nodes and edges. Nodes have a text and a node type. Edges are directed (= they have a source and a target) and connect two nodes.

The following pages give you an idea of what you can do:

- A brief list of basic features
- Create the first node
- Change a node text
- Basic node actions
- Basic edge actions
- Dragging edges to change source or target
- Create a new edge

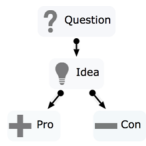
Please note that the editor supports highlighting of structural issues.

Concepts that might need extra explanations:

- Node and Node Types (Question, Idea / Answer, Pro, Con)
- Edge
- Invalid Edge
- Node Type Selection Dialog

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# Basic Editor Features

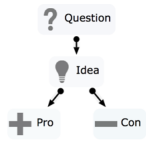
The Editor provides standard features that you would expect:

- The Editor supports undo & redo.
- The Editor maintains the status even if you just close it. If you open it again the previous state will be restored.
- The Editor allows printing.
- The Editor allows exporting to PNG.
- You can use Emojis in your text.

The current version (June 2017) doesn't support spellchecking. It will be added as quick as possible.

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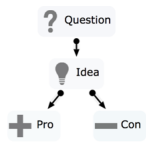


## Create the first Node

Click on the “+” symbol in the bottom right corner. Select the Question node to start with. The Node Text editor will automatically open.

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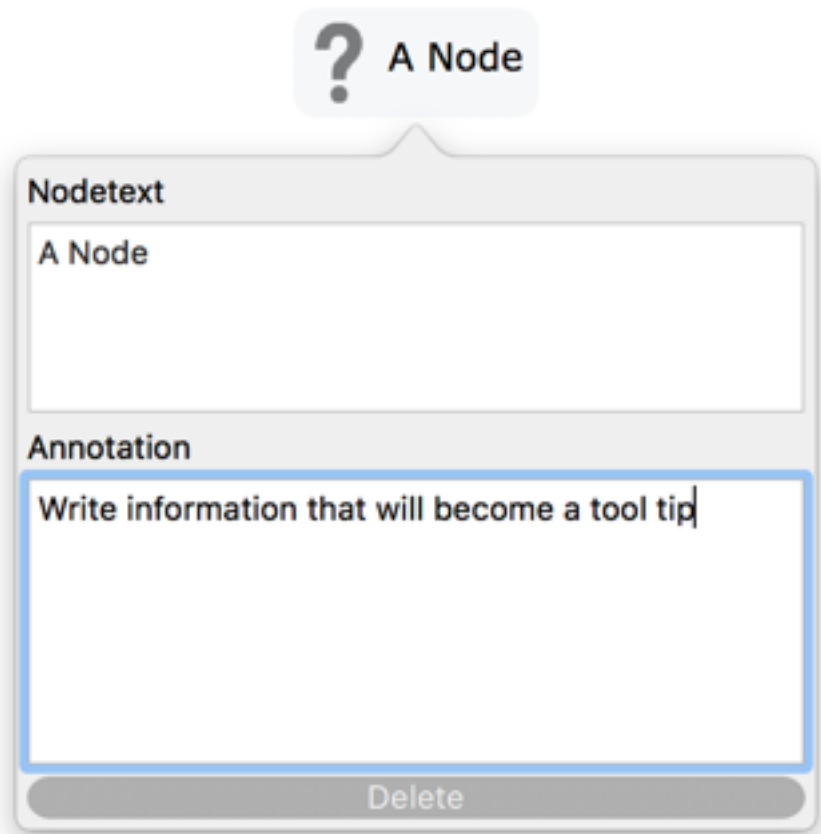
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## Change a Node Text

If you want to change a node, just double click it.

**Double Click a Node  
for text editing**



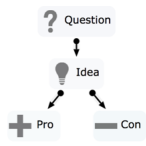
The upper box allows you to change the written content of the node. The second box provides the tooltip information that will become visible if you hover for a few seconds over the node with the mouse.

If you want you can delete the node with pressing on the delete button.

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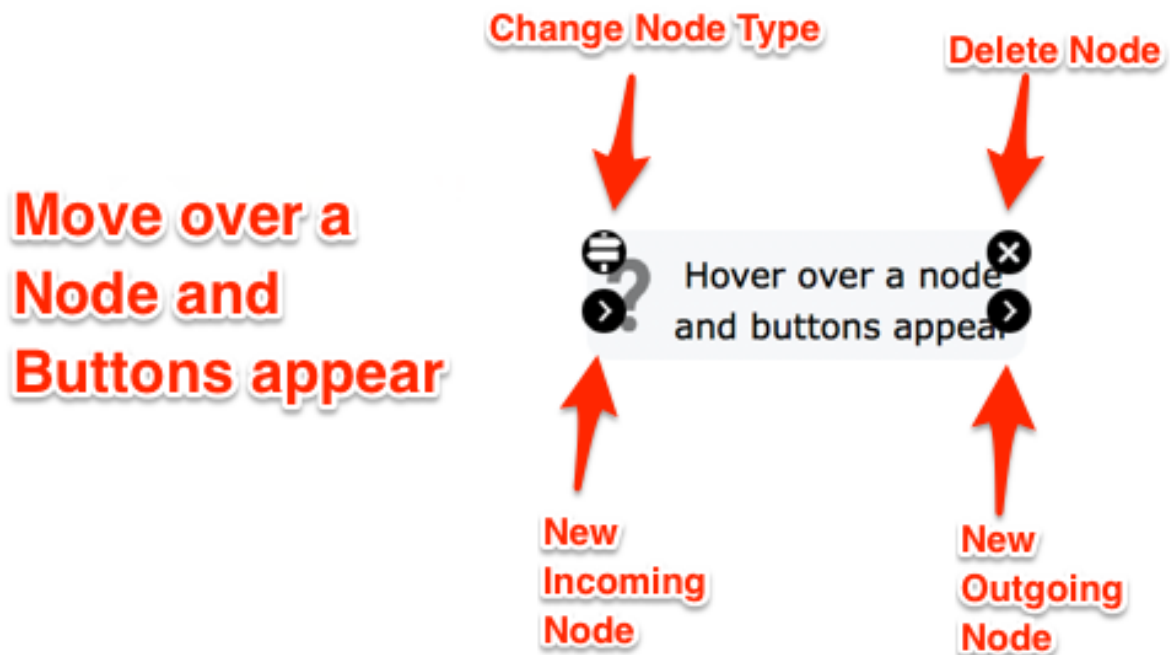
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# Basic Node Actions

Simply hover over a node and up to four buttons appear.

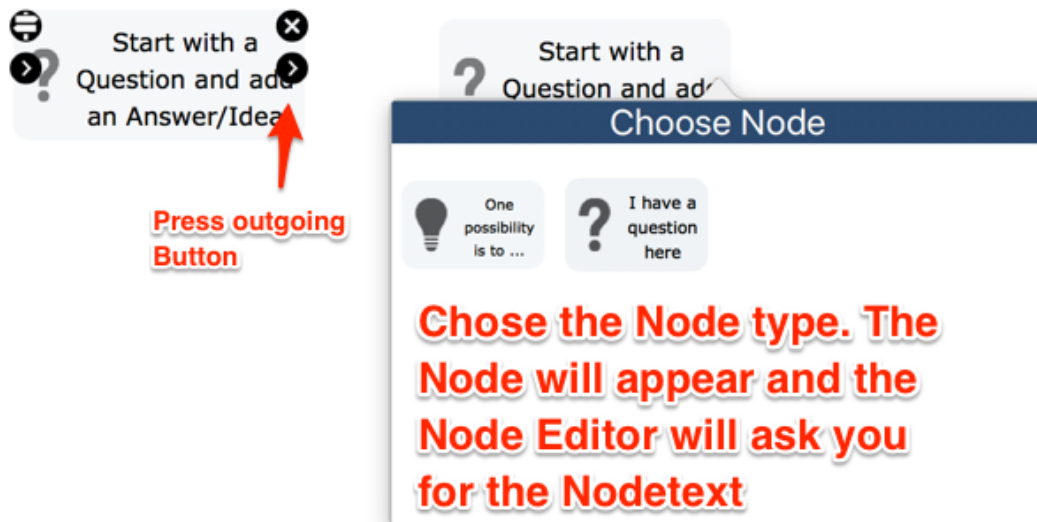


Some explanations:

- The meaning of “Delete Node” should be self explanatory. All edges to or from this node will be deleted together with the node.
- The direction symbol opens the node type selection dialog in order to choose a different node type. Please note that you can create invalid edges this way.
- The “New Incoming Node” button is only available when it makes sense. As any Node can only be derived from one “parent node” it will be only available for the “root node”. If available and you click it will you be able to select a node type that will be created together with an edge from that node to currently selected.
- The “New Outgoing Node” button will be the standard way to create a new node. Note that the node type selection dialog will restrict the list of nodes that will allow valid edges. Once a node type is selected a corresponding node will be created together with an edge from the current node to the new node.

The picture below illustrates the use of the outgoing node button.

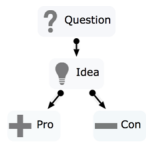
## How to create an outgoing Node



Please note that the new node buttons are now located at the bottom of the Node.

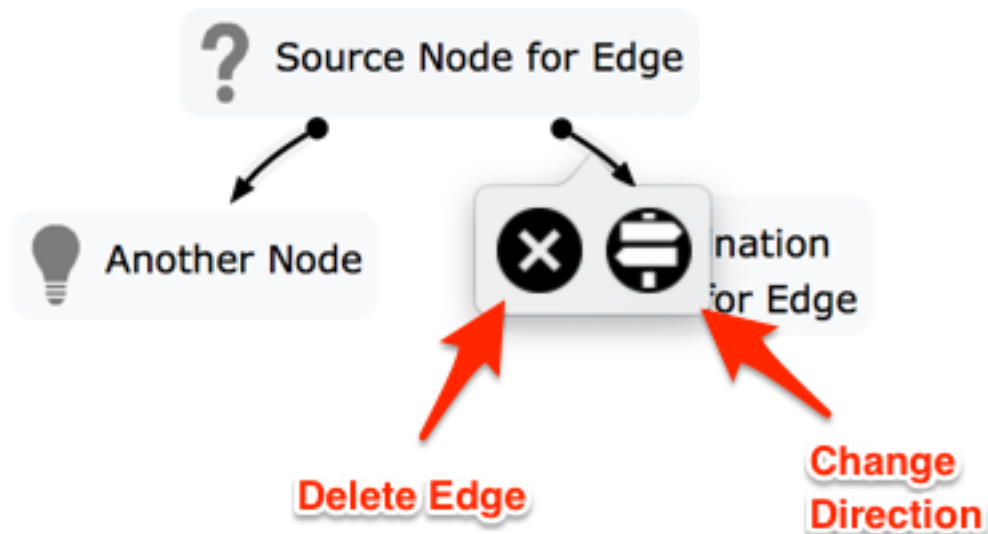
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# Basic Edge Actions

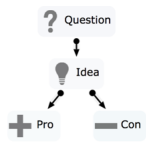
Click on an edge (avoid arrow head and tail) and you can either delete the edge or invert the direction. Inverting the edge will in most cases create an invalid edge.



**Click on the Edge  
and get options**

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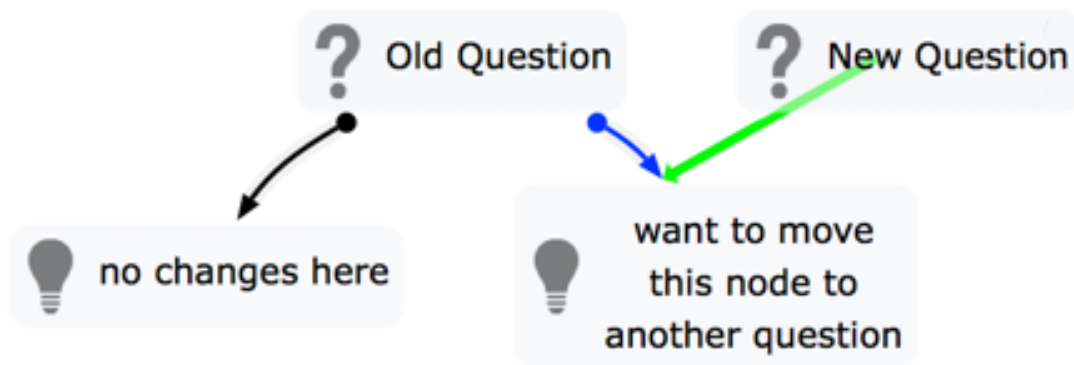
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## Drag Edge to new Nodes

Click on the head or arrow of an edge and drag it to another node. In the picture below the edge is dragged from the old question to new question.

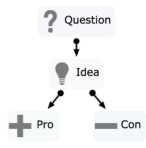
Please note that only valid edges can be created like this. A valid edge will be green, an invalid edge red.



**Drag the arrowtail or arrowhead from the Edge to new Nodes. Green indicates that the Edge is valid, red indicates an invalid Edge**

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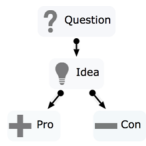


# Draw new Edge

You can create a completely new edge

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# Structural Issues

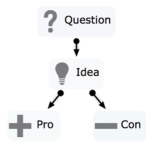
The Editor highlights when the IBIS Notation structure is violated. Violations are highlighted in **red**. The following are considered the rules of IBIS.

- A question can have any number of ideas / answers.
- Any answer/idea can have any number of arguments for each answer, split into the two categories of pros and cons.
- A question can follow on any other node, including questions.
- Any node can have only one incoming edge.

See how invalid edges are highlighted and how the wrong multiplicity is shown.

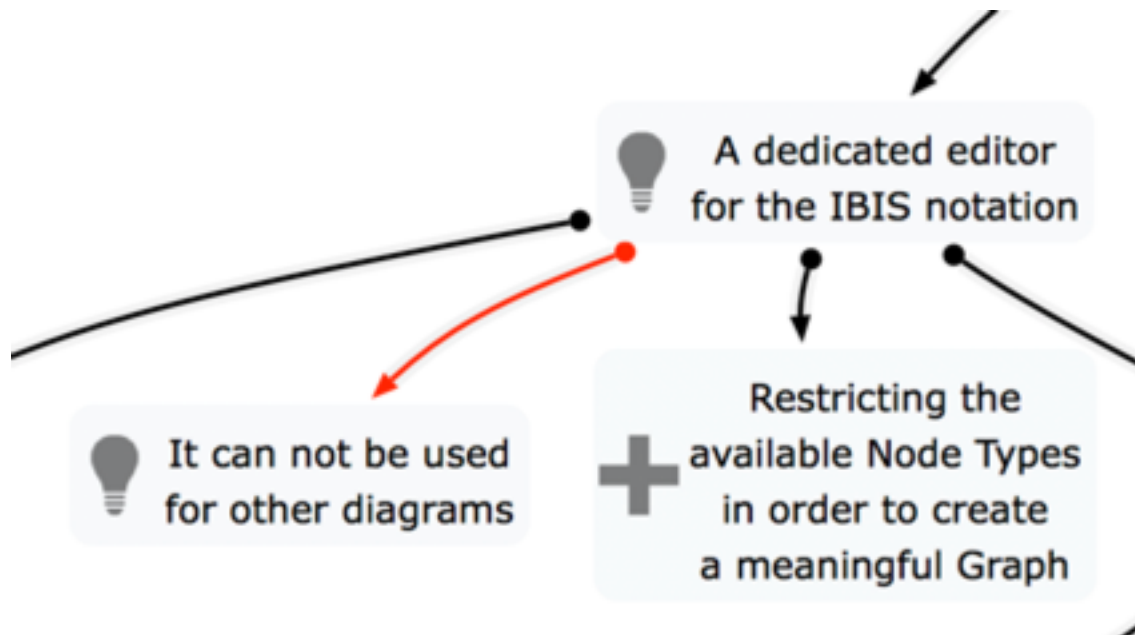
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# Invalid Edge Highlight

Invalid edges are highlighted in red. In the example below we have an edge from an idea / answer to an idea / answer node. This is considered a structural issue.

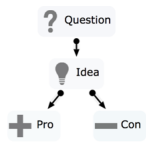


You can either:

- delete the edge
- delete any of the two nodes which will delete the edge as well
- inverse the edge
- drag either source or target to a new node.

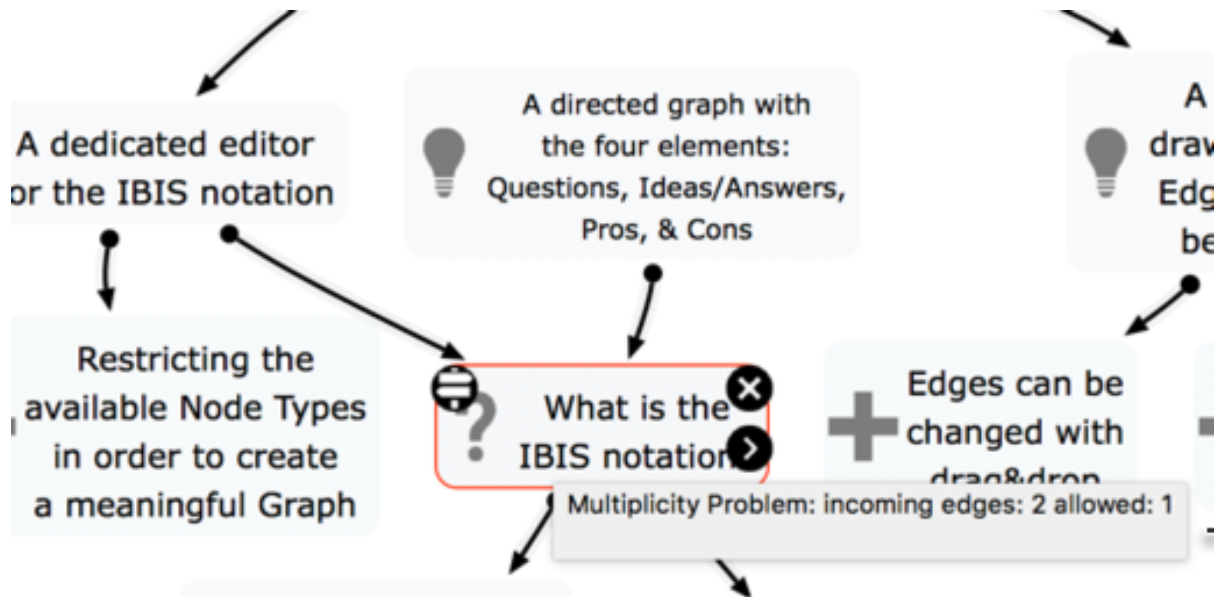
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# Wrong Multiplicity

If you have created two edges or more that have the same target you created a structural issue. The issue will be added to the tooltip text.



You can either:

- delete an edge
- delete any of the involved nodes which will delete connected edge as well
- inverse an edge
- drag either source or target to a new node for involved edge.

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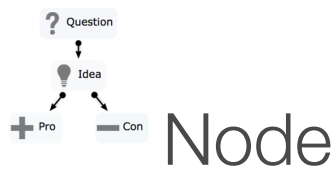
# Concepts

In the next pages I will explain a few concepts that might need extra explanations:

- Node and Node Types (Question, Idea / Answer, Pro, Con)
- Edge
- Invalid Edge
- Node Type Selection Dialog

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A Node has

- a type, either Question, Idea / Answer, Pro, Con (change it)
- a text (change it)
- a tooltip text for annotations etc. It will be displayed when you hover over the node. (Change it)
- in- and outgoing edges

The graphic below shows a question node with the node editor.

**? A Question**

**Node Text**

A Question

**Annotation**

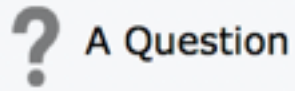
Delete

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A question is the type of a node that represents a question. It has a question mark as an icon.



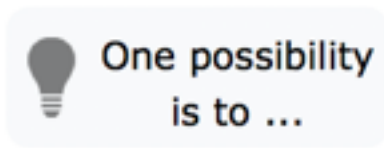
Questions can follow on any other node type. They are followed by ideas / answers.

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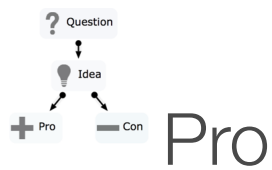
An idea / answer is the type of a node that follows a question and which normally only makes sense in the context of the preceding question. Depending on the exact formulation of the question it might represent an idea or an answer. It has a lightbulb as an icon.



They are followed by Pros and Cons. Or by a question.

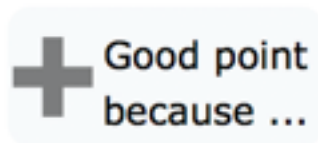
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A Pro is the type of a node that follows an idea / answer and which normally only makes sense in the context of the preceding idea / or answer. Use it when you want to represent a positive quality of the idea / answer.

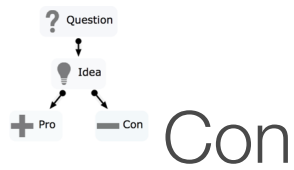
It has a plus as an icon.



Pros can be followed by Questions.

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A Pro is the type of a node that follows an idea / answer and which normally only makes sense in the context of the preceding idea / or answer. Use it when you want to represent a negative quality of the idea / answer.

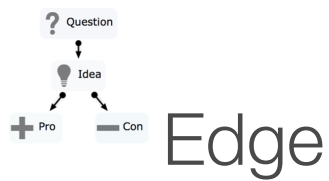
It has a minus as an icon.

**— A problem here is ...**

Cons can be followed by Questions.

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Edge are the lines with “arrowheads” on one side and a small circle on the other side (the “arrowtail”).

Edges have a source node (tail side) and a target node (head side).

You can:

- inverse or delete the edge
- drag edge to new source or target

**Red** edges have a structural issue: they became invalid.

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**Red** edges have a structural issue: they became invalid.

What that means is that the edge connects two nodes that don't make sense within the IBIS notation. Example would be a Pro that qualifies a question. A Pro should only qualify an idea / answer.

Allowed edges connect

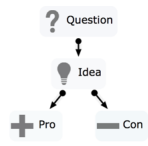
- A question can have any number of ideas / answers, or further questions.
- Any answer/idea can have any number of arguments for each answer, split into the two categories of pros and cons.
- A question can follow on any other node, including questions.

See here for your options how to fix the issue.

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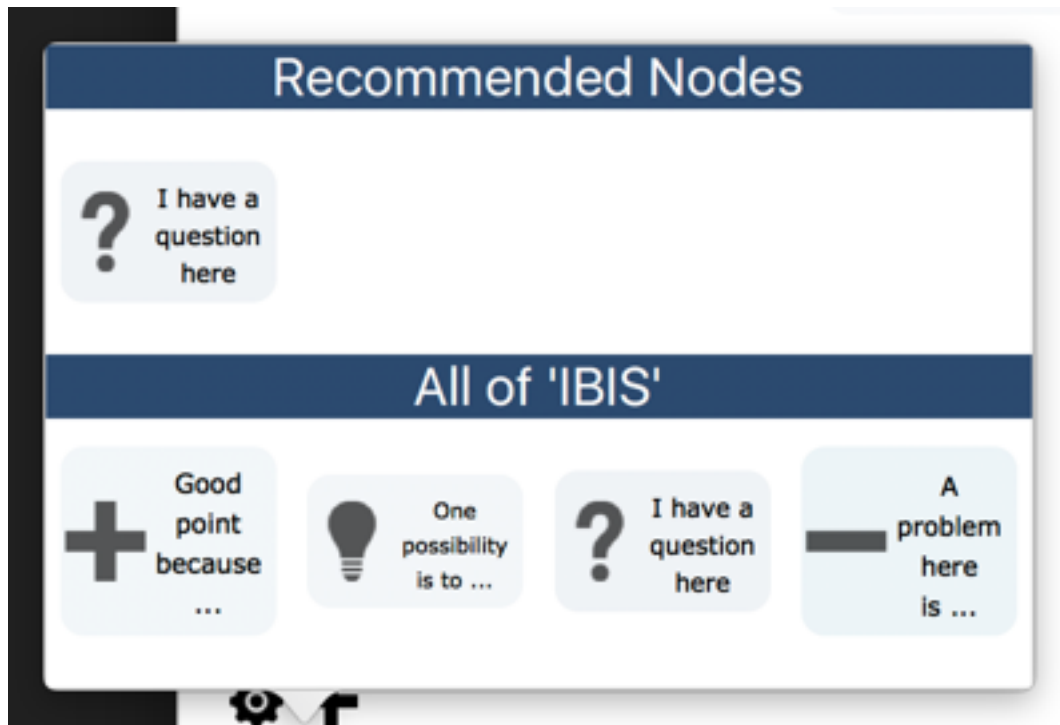
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# Node Type Selection Dialog

The node type selection editor looks like below.



Not all options are provided at all times. In most case you will only want to use recommended notes.

The editor can be accessed when you:

- create the first node
- change the type of a node
- create incoming or outgoing nodes.

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