

Guided Tours in ALeA

Assembling Tailored Educational Dialogues
from Semantically Annotated Learning Objects

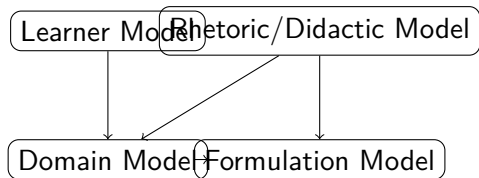
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[firstname].[lastname]@fau.de

AI4AI Workshop @ ECAI23
2023 – 09 – 30



Motivation

Context: ALEA



Semantic annotation on the *concept level* in course materials.

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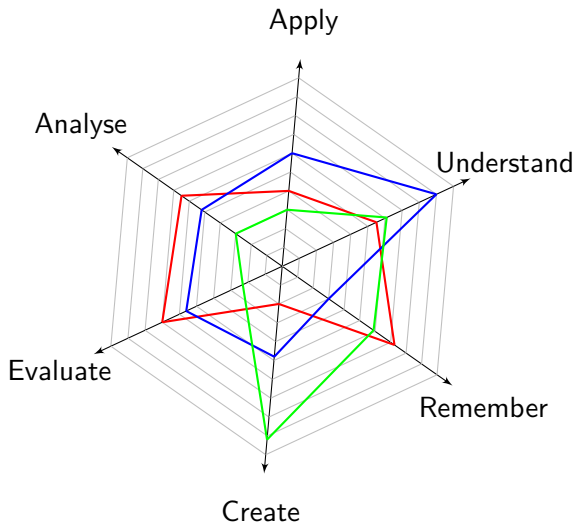
1 \begin{sassertion}[name=Pythagorean Theorem]
2   \importmodule[geometry]{right-triangle}
3   In a \symname{right triangle}, the \symname{square} of the
4   \symname{hypotenuse} is \symname{equal} to the \symref{plus}{sum}
5   of the \symnames{square} of the other two \symnames{side}.
6   Often, this is expressed as the formula
7   
$$\text{\definens{\equal{\plus{\square a}, \square b}, \square c}}.$$

8
9   \includegraphics{right_triangle.png}
10 \end{sassertion}

```

An Example STEX Fragment

The Learner Model



foo bar

Educational Dialogues

Educational Dialogues good!

Educational Dialogues

Hello, Jonas. It seems like you want to learn more about the Pythagorean Theorem.

This topic concerns right-angled triangles. Do you already feel comfortable with that topic?

Educational Dialogues good!

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I'm not sure

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Hello, Jonas. It seems like you want to learn more about the Pythagorean Theorem.

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I'm not sure

That is okay. We can do a small exercise and find out. Please try to answer the following problem:

In a right-angled triangle, one of the angles at the longest side is 60° . What would that make the other angle on the longest side?

Educational Dialogues

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30°

Educational Dialogues

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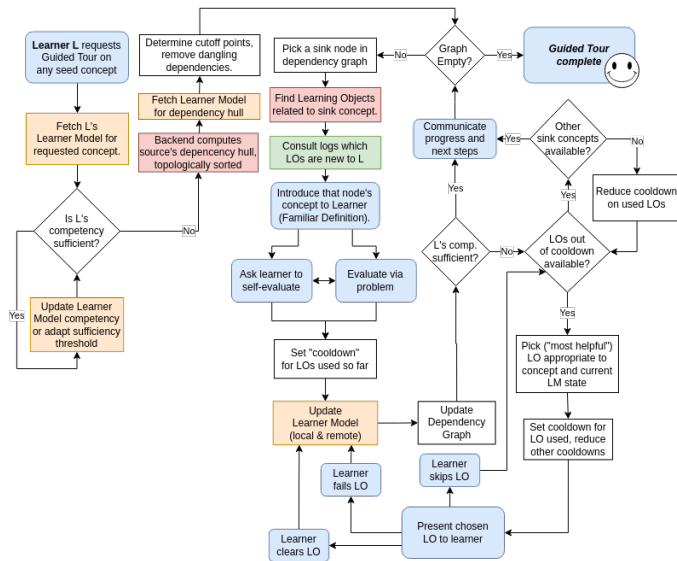
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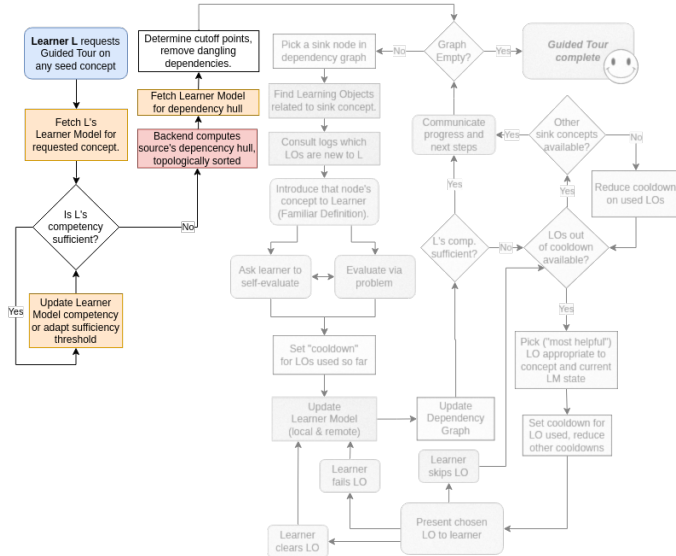
That is correct! Okay, let's talk about the Pythagorean Theorem.

Overview

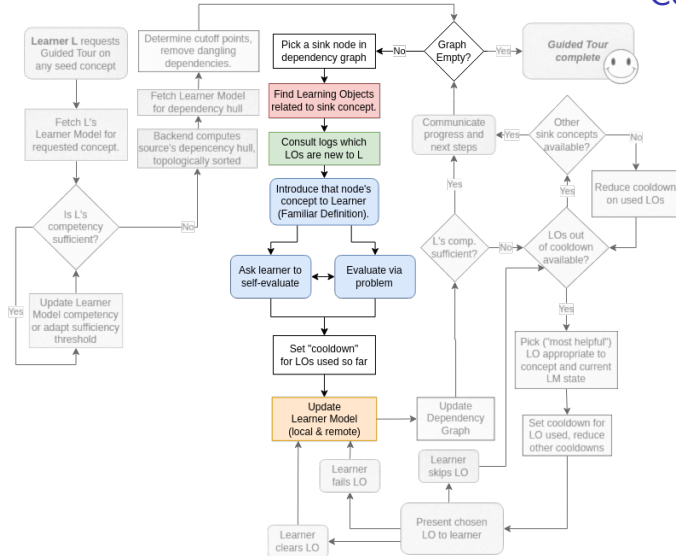


The complete algorithm for guided tours in ALEA.

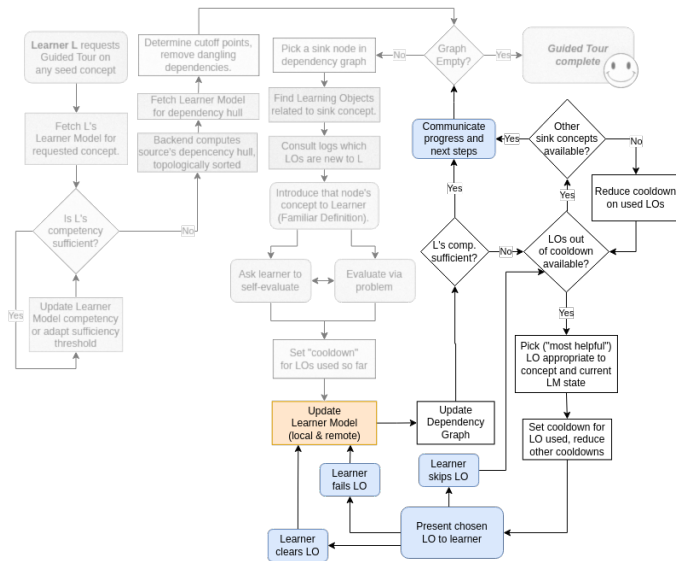
Initialisation



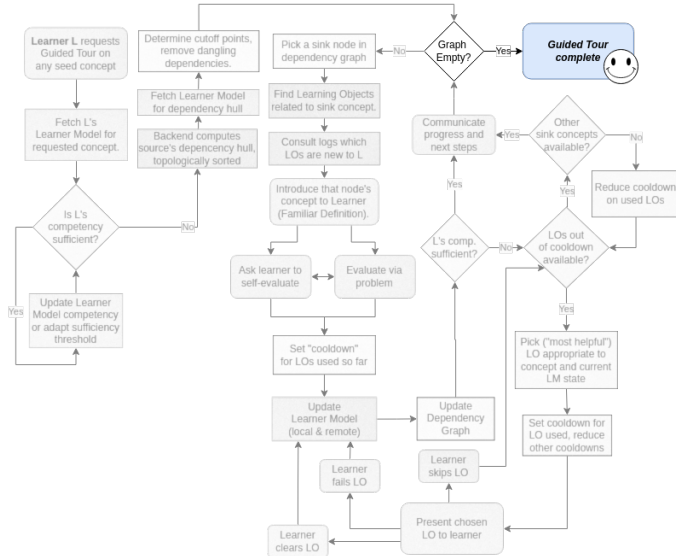
Concept Introduction



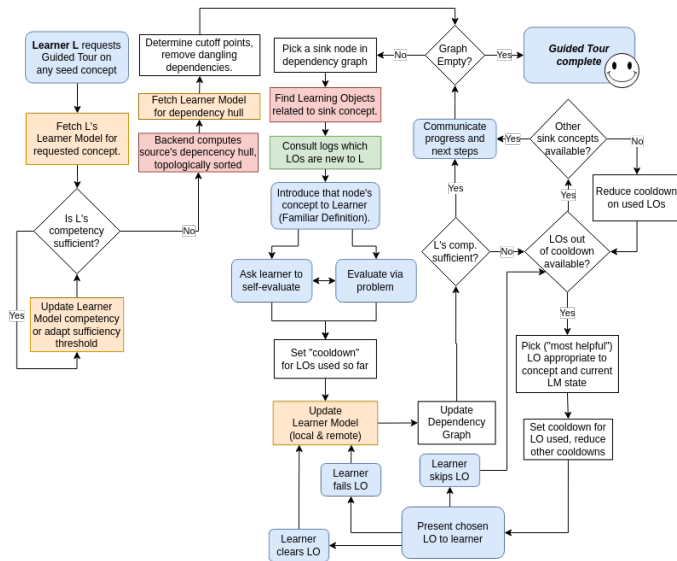
Learning



Finish



Recap



The complete algorithm for guided tours in ALEA.