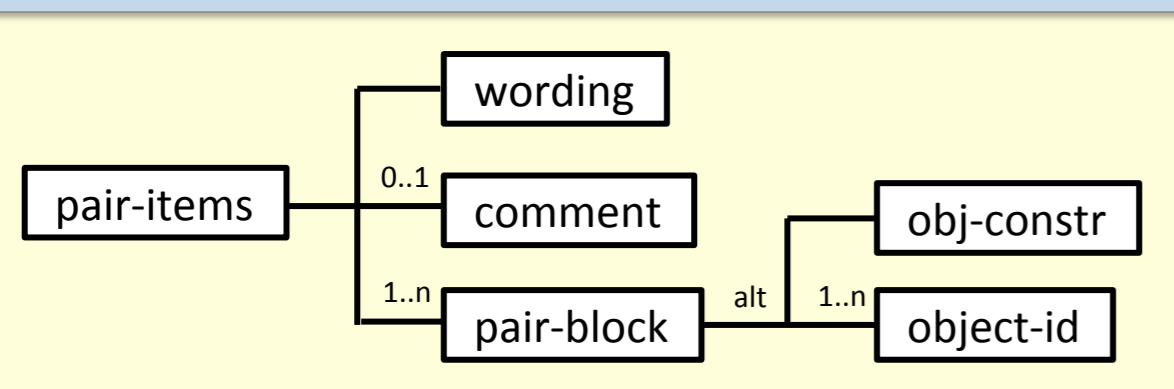


Baptiste CABLÉ, Nathalie GUIN, Marie LEFEVRE
LIRIS, Université Lyon 1, UMR5205, F-69622, France

Expected features: (1) the author controls the content, (2) the exercise is different every time, (3) the tool can be used in many subjects, (4) the diagnostic is instant, (5) the authoring is quick and (6) requires no technical skills.

Knowledge about the types of exercises

- Constrains the content of an exercise model
- 1 definition per type of exercises
 - + multiple choice
 - + pair items
 - + cloze test, ...



Exercise model

- Represents author's preferences
- Instantiates one type of exercises
- Makes reference to resources
- Is relating to a domain through its content

```

<pair-items>
  <wording>Associate each electronic component
  with its name.</wording>
  <pair-block
    number-of-pairs="4"
    pair-type="meta-resource"
    meta-key= "name">
    <object-constraint type="picture">
    <metadata-constraint key="author">
    <equals>Smith</equals>
    ...
  </pair-block>
</pair-items>
  
```

Exercise and diagnostic

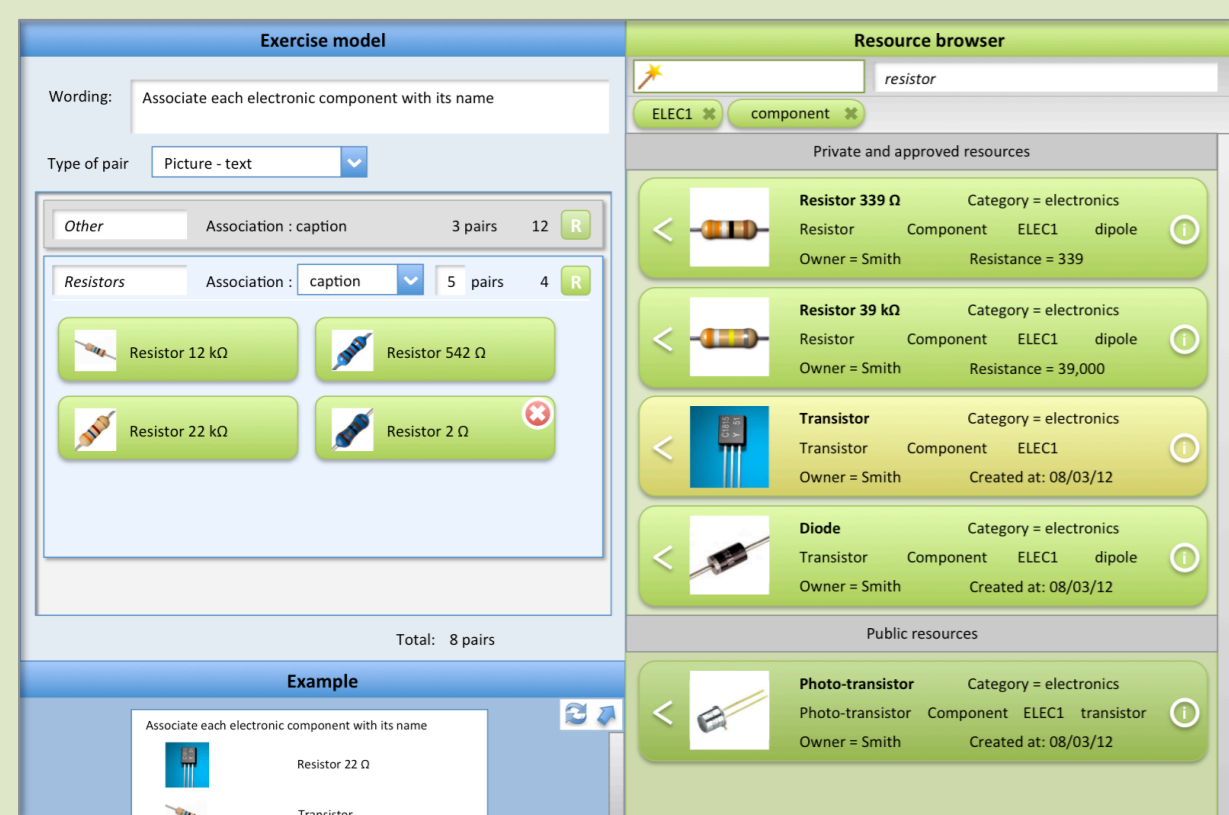
- 1 instance of static exercise
- Contains the solution
- Matches author's preferences

```

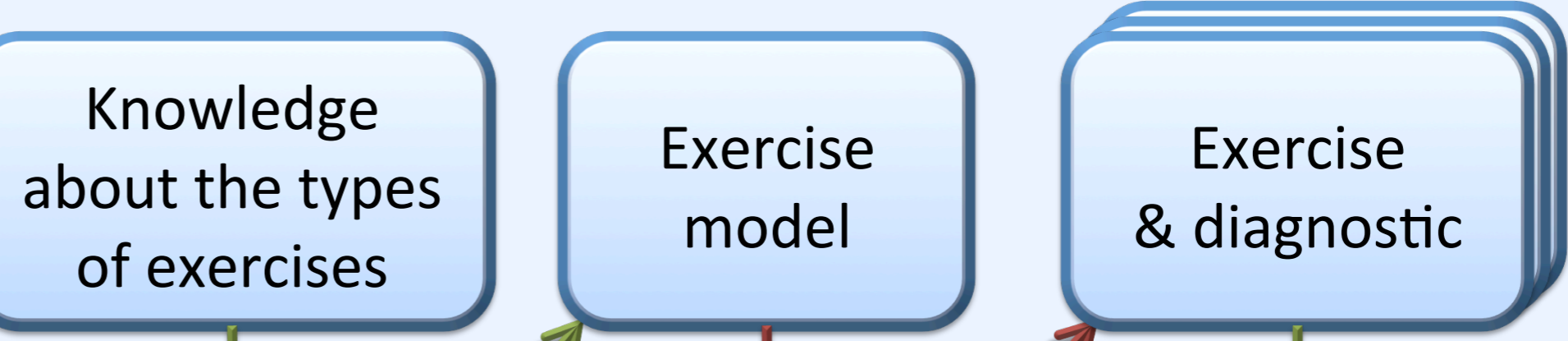
<pair-items>
  <wording>Associate each electronic
  component with its name.</wording>
  <pair>
    <object type="picture"
      id="234">
    <text>Resistor</text>
  </pair>
  <pair>
    <object type="picture"
  ...
  </pair>
</pair-items>
  
```

Exercise model creation tool

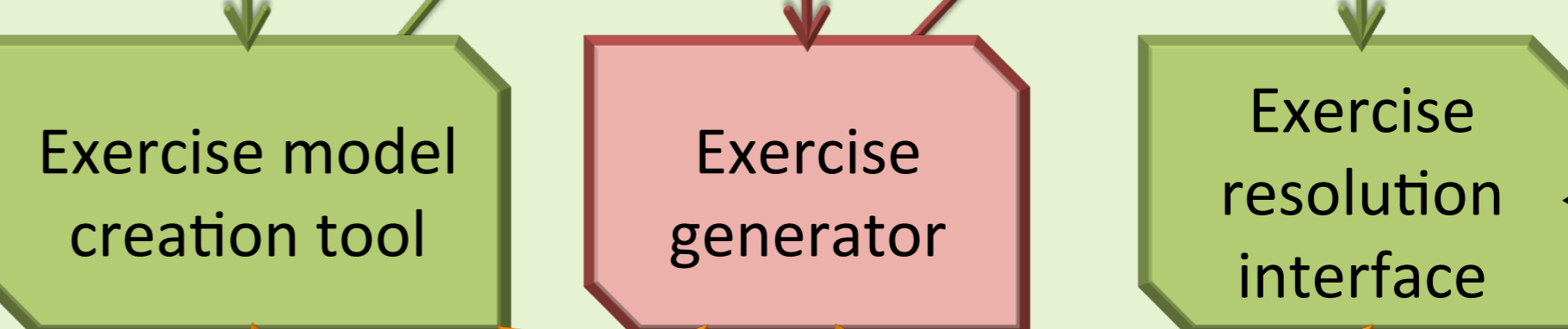
- Authoring tool
 - User-friendly interface
- Main functionalities
- Editing the model
 - Navigating in the resources
 - Visualizing examples of exercises



EXERCISE REPRESENTATIONS



TOOLS



Author

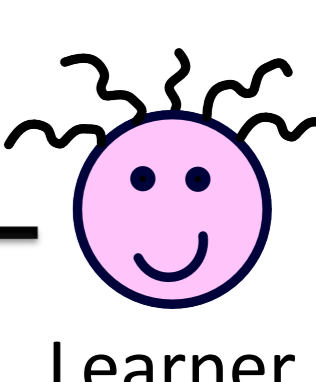
uses

creates

creates

creates

uses



Learner

creates

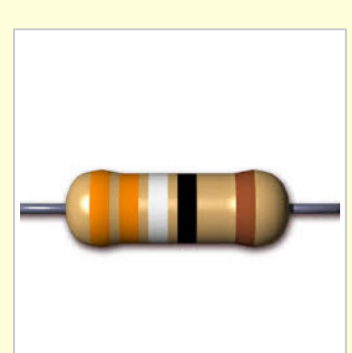


Expert

SUPPLEMENTARY KNOWLEDGE

Resources

- Many types : text, pictures, questions
- Metadata
 - + used for research
 - + used to generate exercises



Resistor Resistance = 339
Owner = Smith dipole
Category = electronics ELEC1
Component

Domain knowledge

- Every piece of knowledge that is not a resource and that can be useful to create exercises
- Is independent of the type of exercises
- Facilitates the edition of domain specific models

Examples

- List of the keywords of a programming language
- Value of a constant
- Function to determine the nature of a word

Exercise resolution interface

