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Resource: Issues for Globalization and Localization  
April 11-13, 2011 –Utah State University  
Logan, Utah USA



FEDERAL  
UNIVERSITY OF CEARA



**GREat**  
Group of Computer Network,  
Software Engineering  
and Systems.



**PROATIVA**

Group of Research and Production Environments  
Interactives and Learning Objects

# Research Groups

- **Proativa** - Group of Research and Production of Interactive Environments and Learning Objects
  - Coordinator: Professor Aires
  - Objective: Research, Production and Application of Educational Resources
- **Great** - Group of Computer Networks, Software Engineering and Systems
  - Coordinator: Professor Rossana
  - One of the Objectives: Research and Development in the fields of Software Engineering (development process, test, quality, etc) and mobile computing



# Guided Customization for Learning Objects

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# Open Software

- In the last years, the idea of open software
  - Expanded and involved new applications
    - More freedom to users
    - Democratizing information and Knowledge
- One kind of freedom provided by open software
  - Users can adapt them to their needs
    - However
      - Users need access to software codes and
      - Technical knowledge to perform the adaptation



# Open Software

- Even with this type of restriction
  - freedom to adapt this was a great evolution
- This idea evolved and included
  - Educational Environment
    - Open Educacional Resources (OER)



# Educational Resources

- In the case of OER
  - Adjustements are quite specific
    - focus on context and target audience
  - Requiring in this case, direct intervention of a teacher



# Educational Resources

- A teacher knows how to present the content so that it is better suited for his/her students
- However, teachers do not necessarily have the knowledge to modify at the level of the code
  - Thus, the possibility to modify only the code is not appropriate



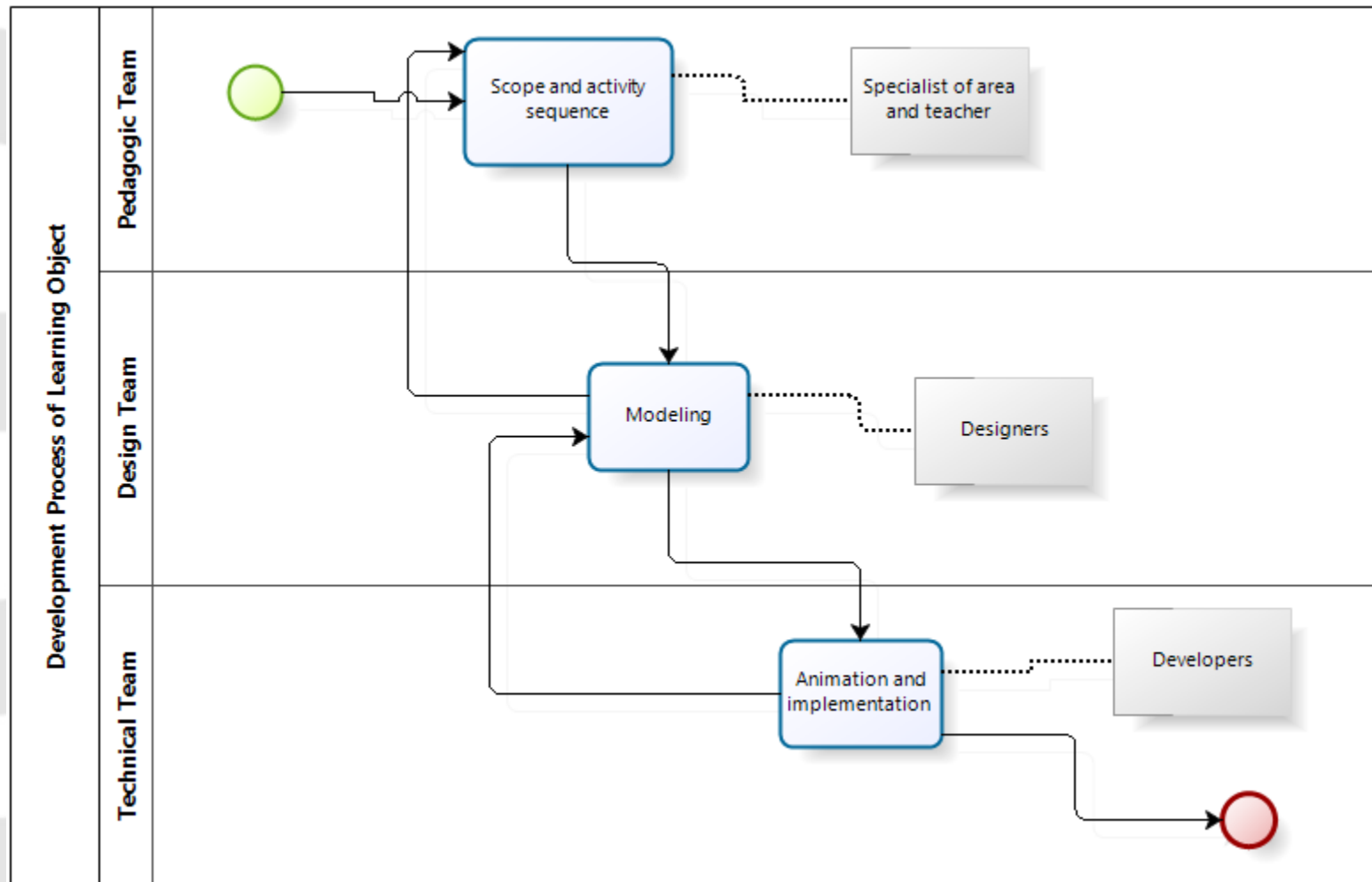


# Our Approach

- Strategy for Opening Educacional Resources
  - Specifically Learning Object (LO)
    - Guided Customization



# Traditional Development Process of LO

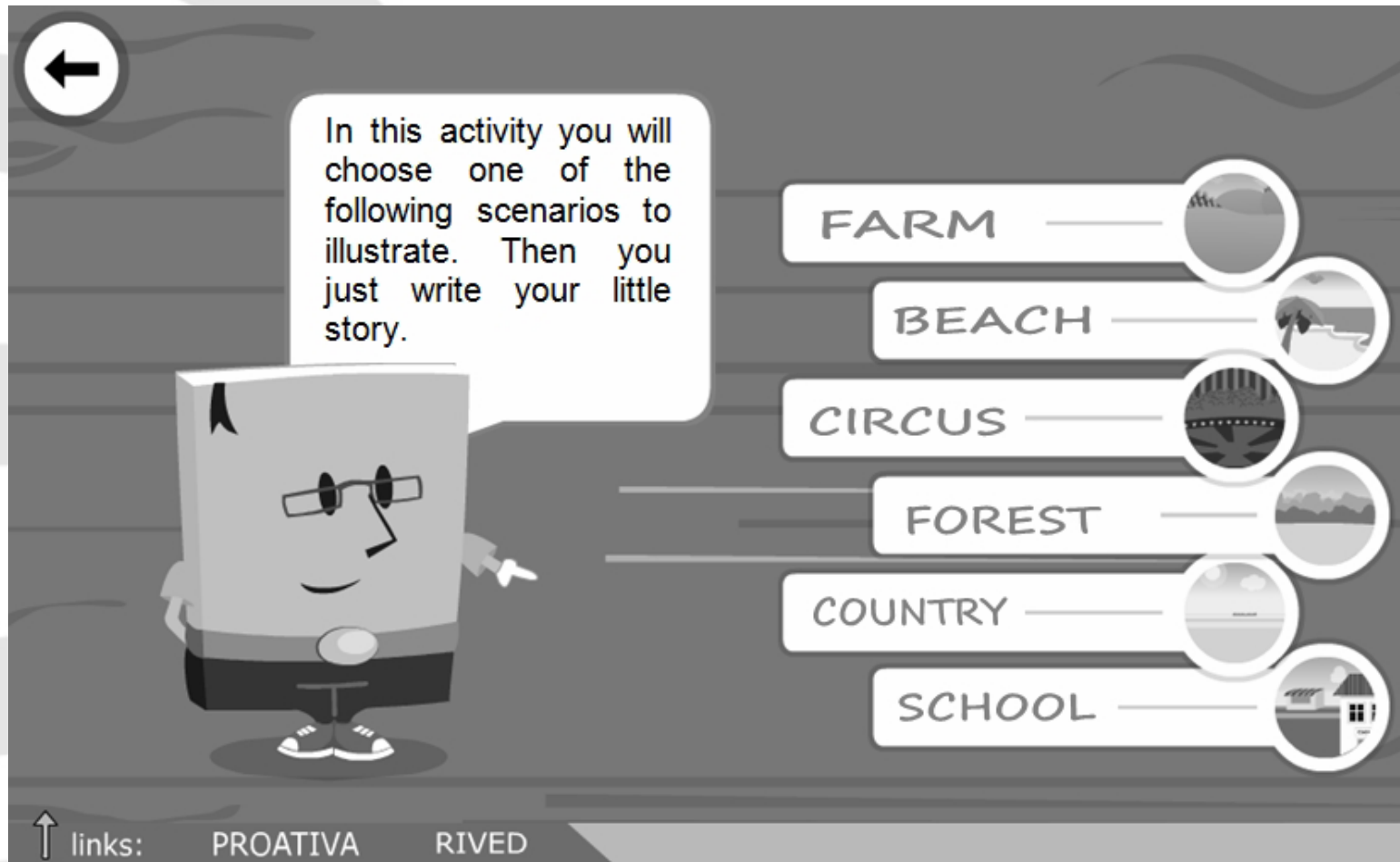


# Guided Customization for LO (CLO)

- Guided Customization
  - What can be adapted in the resources at the design step
- The development team can then build customizable educational resources



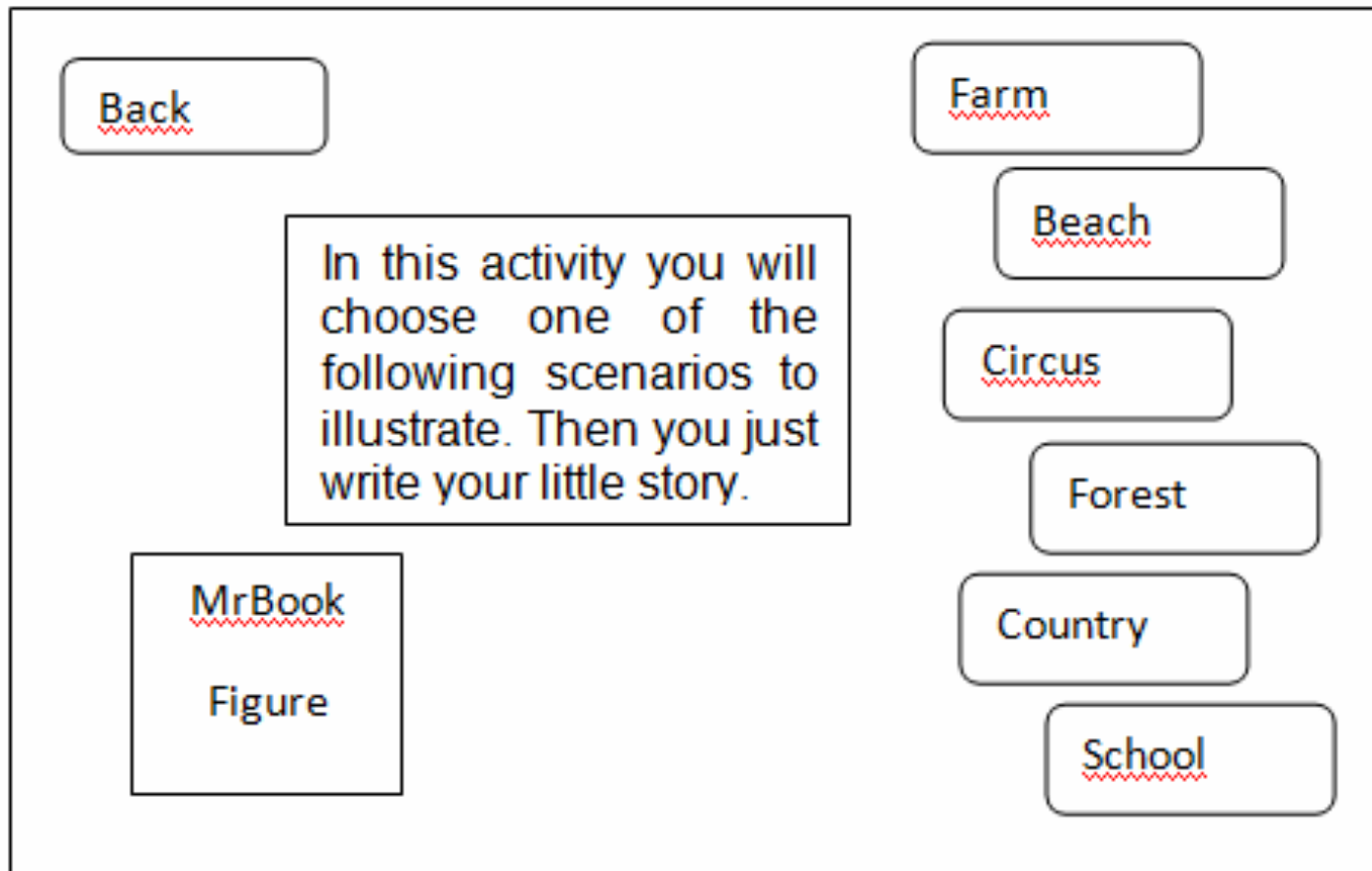
# Example (before CLO)



Main Screen of an activity 1

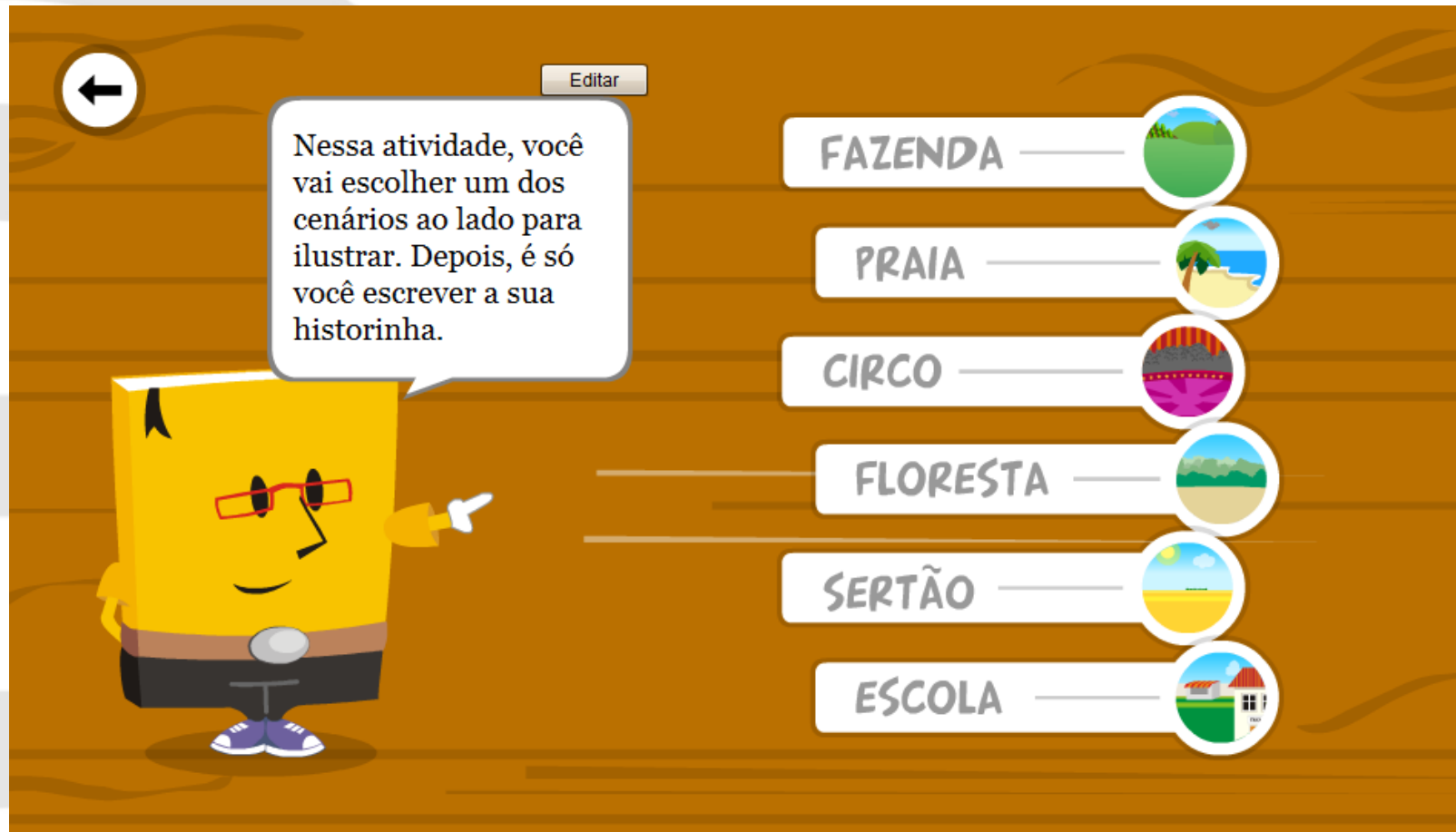


# Example (before CLO)



Main scene architecture

# Customizable LO



Versão: Versão 3

Usuário: Professor Teste  
Grau de Liberdade: 1

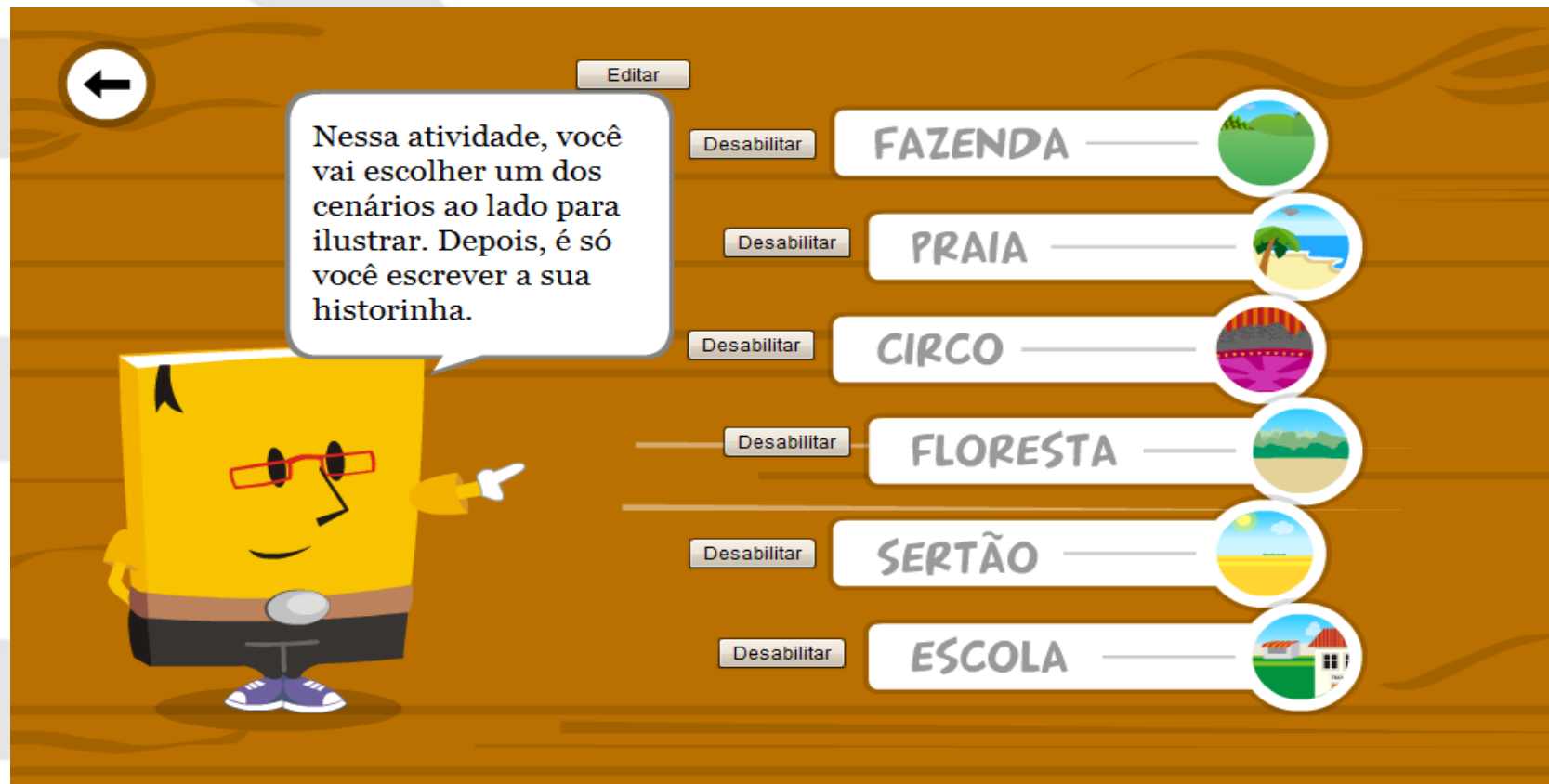
Customizar

Sair

Main Screen of an activity 1



# Customizable LO



Versão: Versão 3

Usuário: Fatima Souza  
Grau de Liberdade: 2

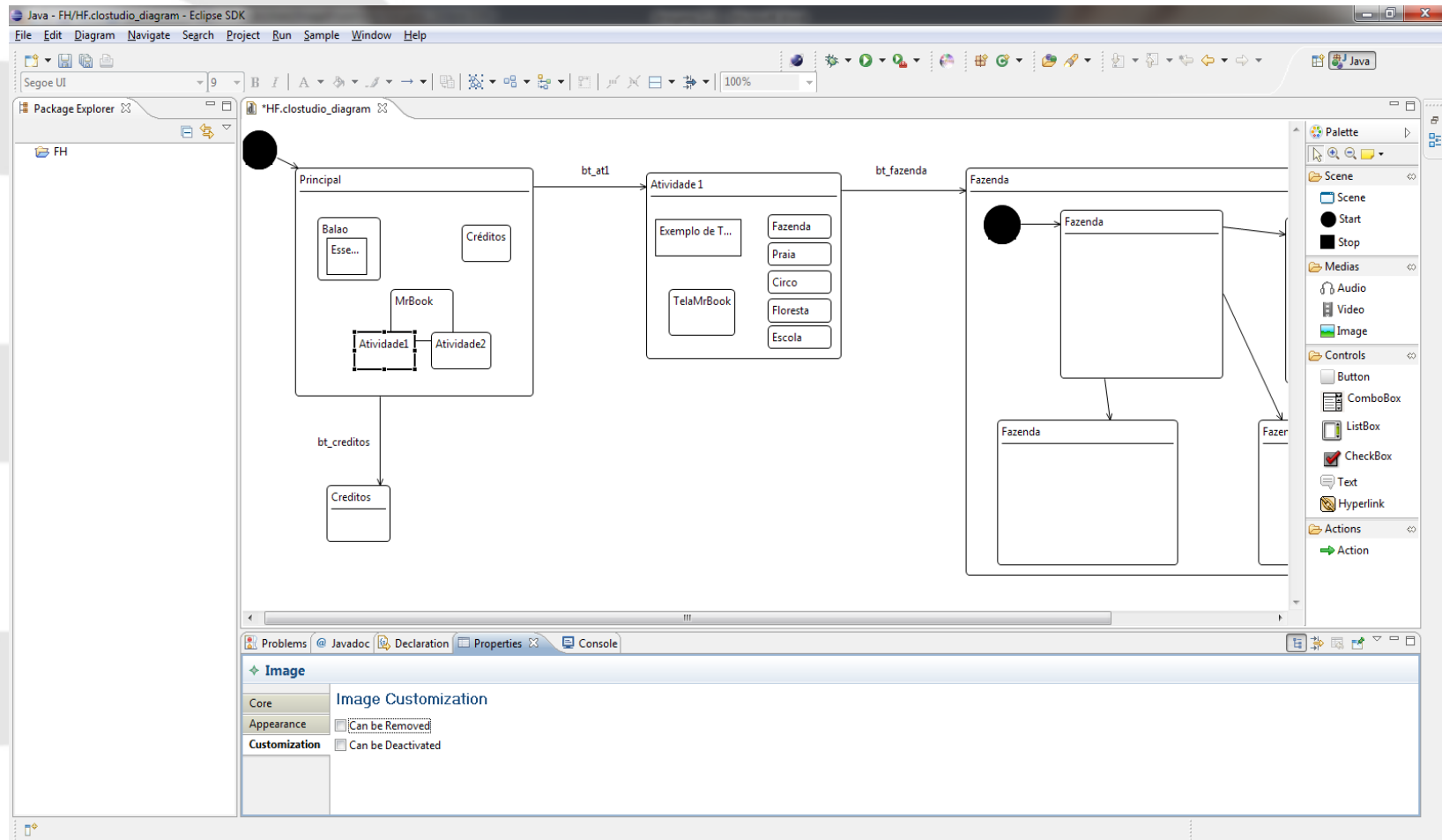
Customizar

Sair

Main Screen of an activity 1



# Authoring Tool



CLO Studio





# Final Remarks

- Thus, with our approach the resources can be
  - Customized by users, in this case, teacher
    - Modification when using the LO
    - Without compromising the content



# Final Remarks

- The real benefits of this opening strategy can be reflected in practice
  - giving more autonomy to teachers

