SimSys: Stability Within Chaos
Creating a Stable Tool in a Changing Environment

What is SimSys?
SimSys is an educational game—it teaches students. However, the educator may use the Preview Tool to carefully tune the game itself. The Preview Tool was the focus of this year’s research.

The Need for Stability
The Preview Tool functions according to the Schema (the rules defining the different elements of the game). The Schema will be changed. The Preview Tool needs to remain useful, with minimum maintenance, regardless of changes made to the Schema.

Solution
To achieve all the objectives, multiple solutions were needed. In the end, three combined architectures solved our problem. These are Naked Objects Architecture, a Mediator Pattern, and a Translator Pattern.

Naked Objects
An architecture where each object is responsible for its own data. The buttons, text boxes, and characters all keep track of their own data.

Mediators
The mediators keep the XML that is saved and the current representation of the Preview Tool up-to-date and in sync. They will need to be updated.

Translator
The translator loads the XML into the Preview Tool. It insulates the majority of the Preview Tool, and will need the most editing with future changes.

References
Jacob Dahleen, Alex Hunsberger, Ryan Weber, Dennis Brylow, C. Shaun Longstreet, Kendra M. L. Cooper

Moving Forward
The Preview Tool will have to change a lot in the future. However, since the Schema is decoupled from the Preview Tool, these changes should be minimal, and quick to implement. The Preview Tool has become a beacon of stability in a volatile environment.

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