Working With Volatile Data

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Introduction

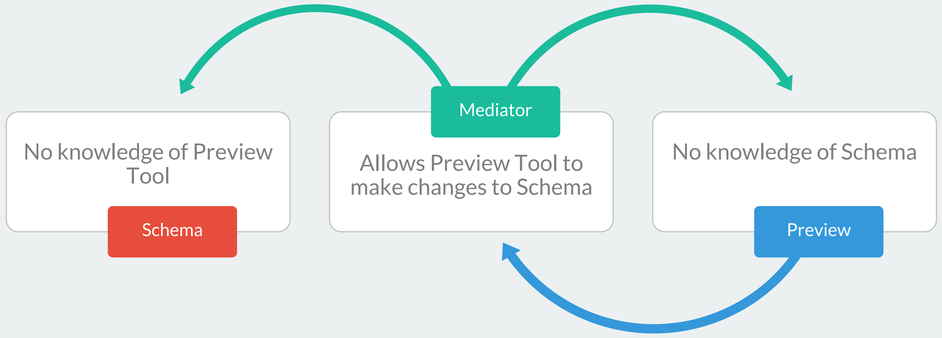
- SimSYS is a collection of tools which is used to create content agnostic games that automatically adjust to a user's skill level.
- One of the tools is the "Preview Tool". It allows content experts to preview games made by a generator, revise content, and make adjustments to customize a game.

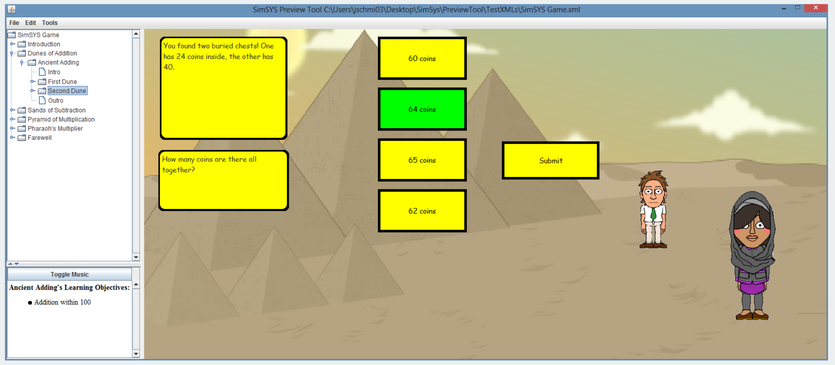
Problem Definition

- Needs to be able to withstand unknown changes in the underlying structure of a game, also known as the **schema**.
- Those unknown changes will also occur during the development of the tool.

Solution

- The Preview tool uses a **Naked Objects Architecture**. Each game element is responsible for representing itself. All business logic and rendering code is handled by the element.
- **Translators** provide initial conversion from the schema to the Preview Tool's architecture. This allows the tool obtain only the data it needs from the schema.
- **Mediators** keep the Preview Tool architecture in sync with the schema. When an object moves or is resized, it contacts a mediator to make the change to both the schema and itself.
- This combination of Translators, Mediators, and Naked Objects Architecture yields a tool that is decoupled from the schema.





Future Work

- Different types of challenges should be supported. Currently only multiple choice is supported. More dynamic gameplay should be available.
- Generate traceability reports which prove to educators that all learning objectives are sufficiently taught.
- Content should be swapped intelligently to maintain narrative structure.

References

- [1] Jacob Dahleen, Alex Hunsberger, Ryan Weber, Dennis Brylow, C. Shaun Longstreet, Kendra M. L. Cooper
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  VLC 2014: International Workshop on Visual Languages and Computing, in Proceedings of the Twentieth International Conference of Distributed Multimedia Systems, pages 329-334, Pittsburgh, Pennsylvania, August 2014.

SimSYS

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