SimSys Educational Game Design: XML Game Generation

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Background

The purpose of SimSys is to create serious educational games that are specific to the learning needs of the user

- ❑ The SimSys project has been in development for several years
- ❑ The Learning Objectives make the tool specific enough and flexible enough to cover a range of educational levels and a variety of subjects
- ❑ All games are created and run in XML format

Past Work

- ❑ There were three tools originally being developed:
  - ❑ Game Generator – Creates a random game
  - ❑ Game Engine – Runs the game
  - ❑ Preview Tool – Gives the user a preview of the game

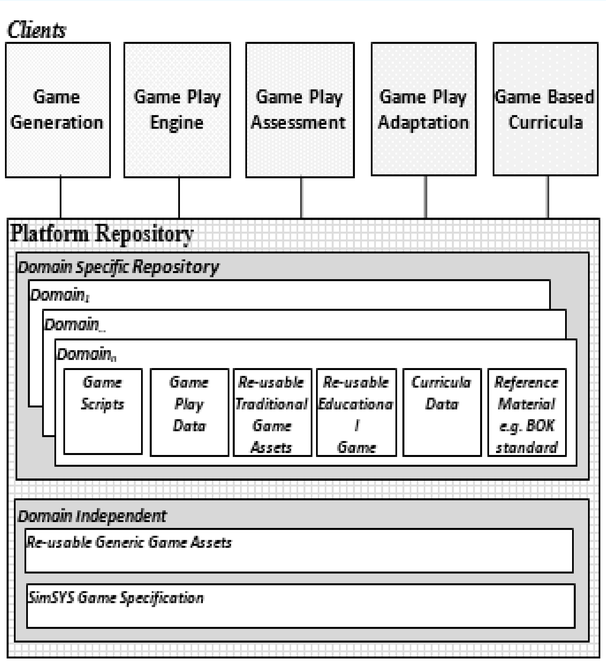


Figure 1 Overall Architecture for the SimSYS Game Development Platform

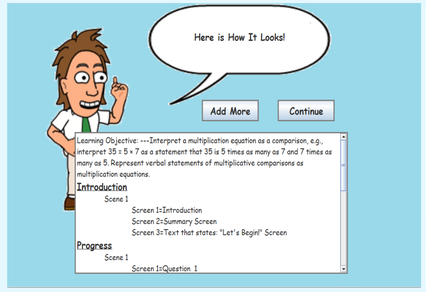
Objective

The main goal was to create a Game Design Tool that generates an XML File that will be imported by the game engine and playable for the user

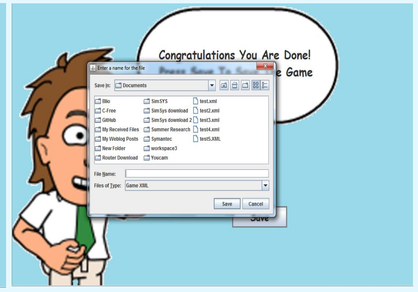
- ❑ The Wizard Tool allows the user to design a game specific to what they want to teach
- ❑ After the user selects all of their desired components the tool generates the game to an XML file

Results

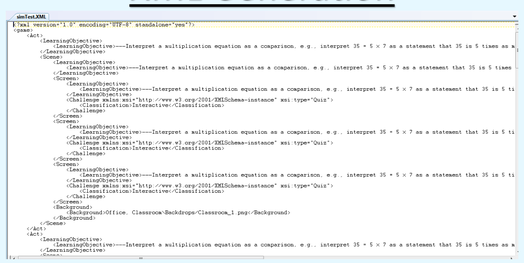
Progress



Save Game Option



XML Generation



Difficulties

- ❑ Familiarizing ourselves on years of work from different teams
- ❑ Status updates with UT Dallas
- ❑ Leveraging a new untested schema to generate an XML file that works for all tools
- ❑ Our tool would be the first to use this new structure

Conclusion & Benefits

- ❑ The Wizard Tool will help separate SimSys from other products as the user can focus on the learning needs of their students and check their progress
- ❑ The user is able to create many different games with ease using the Wizard Tool
- ❑ This will be the first tool that generates a game that is specific to the user's needs
- ❑ This will provide multiple test cases for all of the different SimSys tools currently in progress
- ❑ Since the schema is untested, the tool will give a structure for other tools to use

Future Work

- ❑ Once able to create a complete XML file, the updated Preview Tool and Game Engine can be used to test our work
- ❑ The modified tool will then be able to create an even larger variety of games
- ❑ A repository must be created for use in importing questions, standards, and other information

References

- ❑ Past Work photo was received from Dr. Cooper and Dr. Longstreet
- ❑ Dr. Cooper, Dr. Longstreet, and Dr. Brylow have all been a significant help in creating this design tool
- ❑ This work was supported by alumni donations to the Systems Lab at Marquette University's Department of Math, Stats, and Computer Science