








Summer Internship

CHARLIE ROSS

Goals

1. Complete a Monte-Carlo simulation project utilizing java script. 
2. Employ a modified Agile work process, with daily stand-up and use of Kanban board to track tasks. 
3. Utilize Innoslate tool for development of all work products, to include relational database, diagrams, design reference mission (DRM) narrative, and discrete event and Monte-Carlo simulation model. 
4. Display knowledge of the Life-Cycle Modeling Language (LML) ontology by generating reports from the database showing the traceability/relationships between entities. 
5. Create PowerPoint briefing to document learning and final work products. 

What is Innoslate & LML ?

- *Innoslate* is model-based systems engineering (MBSE) software with integrated solutions for the full systems development life cycle (SDLC), requirements management, requirements analysis, DoDAF 2.02 compliant architectures, real-time collaboration, and simulation.
 - There is a free version of Innoslate at <https://cloud.innoslate.com/>
- Life Cycle Modelling Language is incorporated in Innoslate and is a simple ontology with common graphical notations that makes design make sense.
 - You can find more information here
<https://lifecyclemodeling.org/wp-content/uploads/2022/03/LML-specification-1.2.pdf>
https://lifecyclemodeling.org/wp-content/uploads/2021/01/LML_Relationships_Specification_1_1.pdf

What I've Learned: Innoslate

Creating requirements document

Creating Activity, Spider, and Asset Diagrams

LML standards

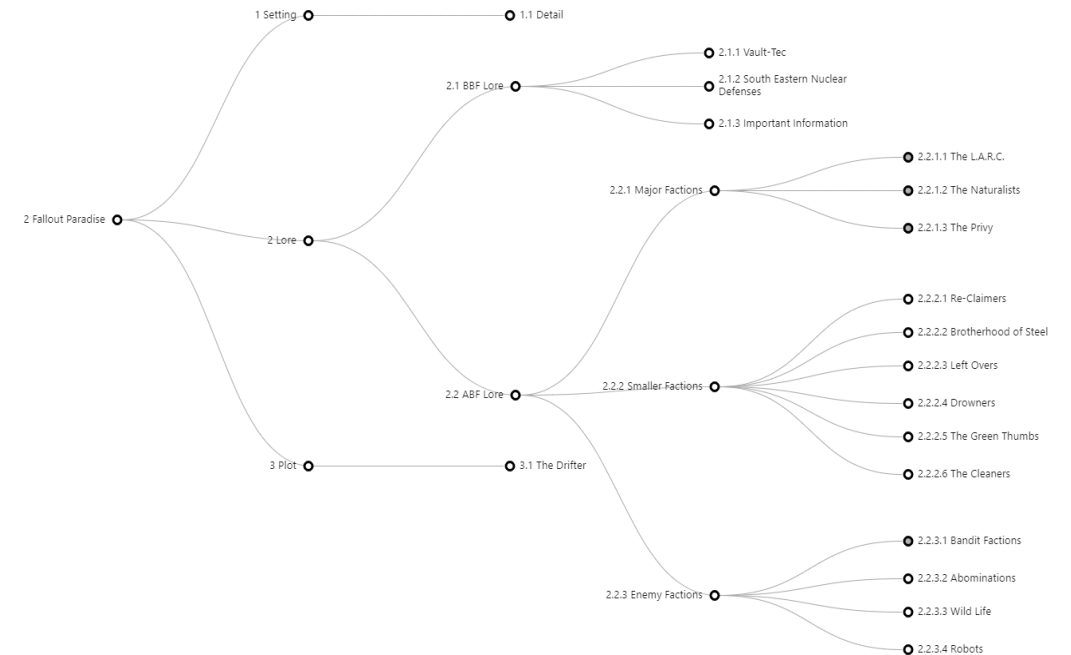
How to create an Entity table report from database

Navigating an Innoslate database with queries

Creating a traceability matrix

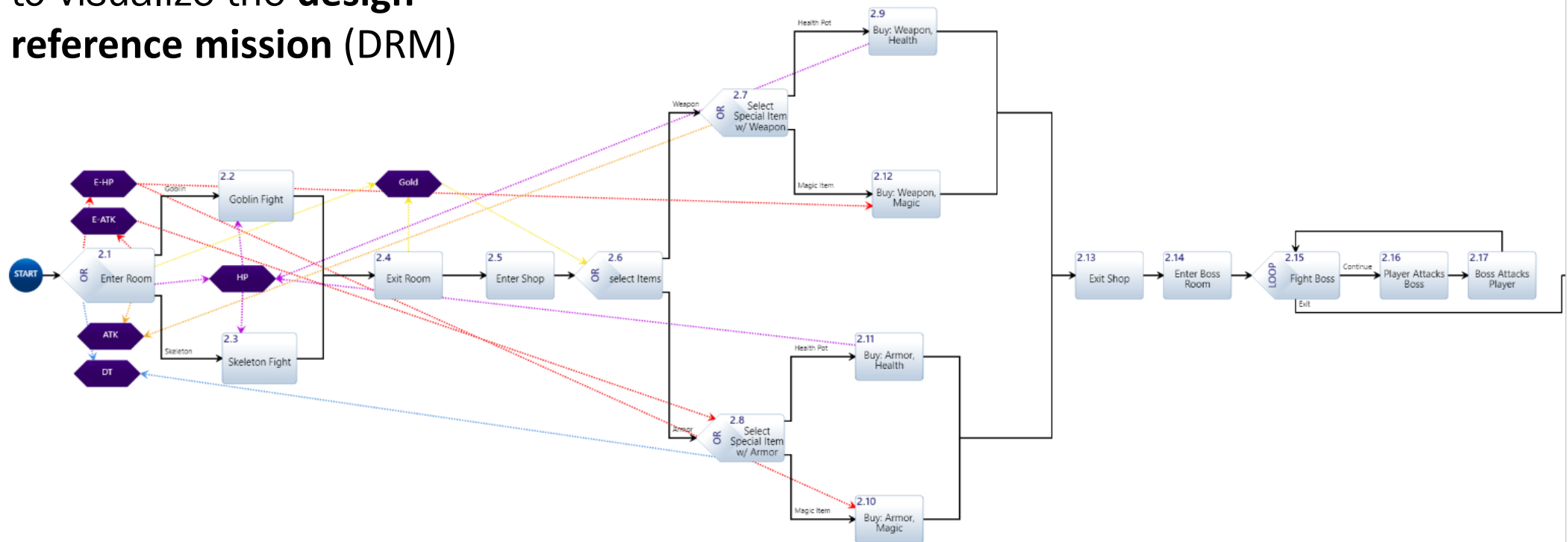
Creating a tree diagram from a document

User's guide: [User's Guide | Innoslate Help Center](#)



Activity Diagram

The activity diagram is used to visualize the **design reference mission (DRM)**

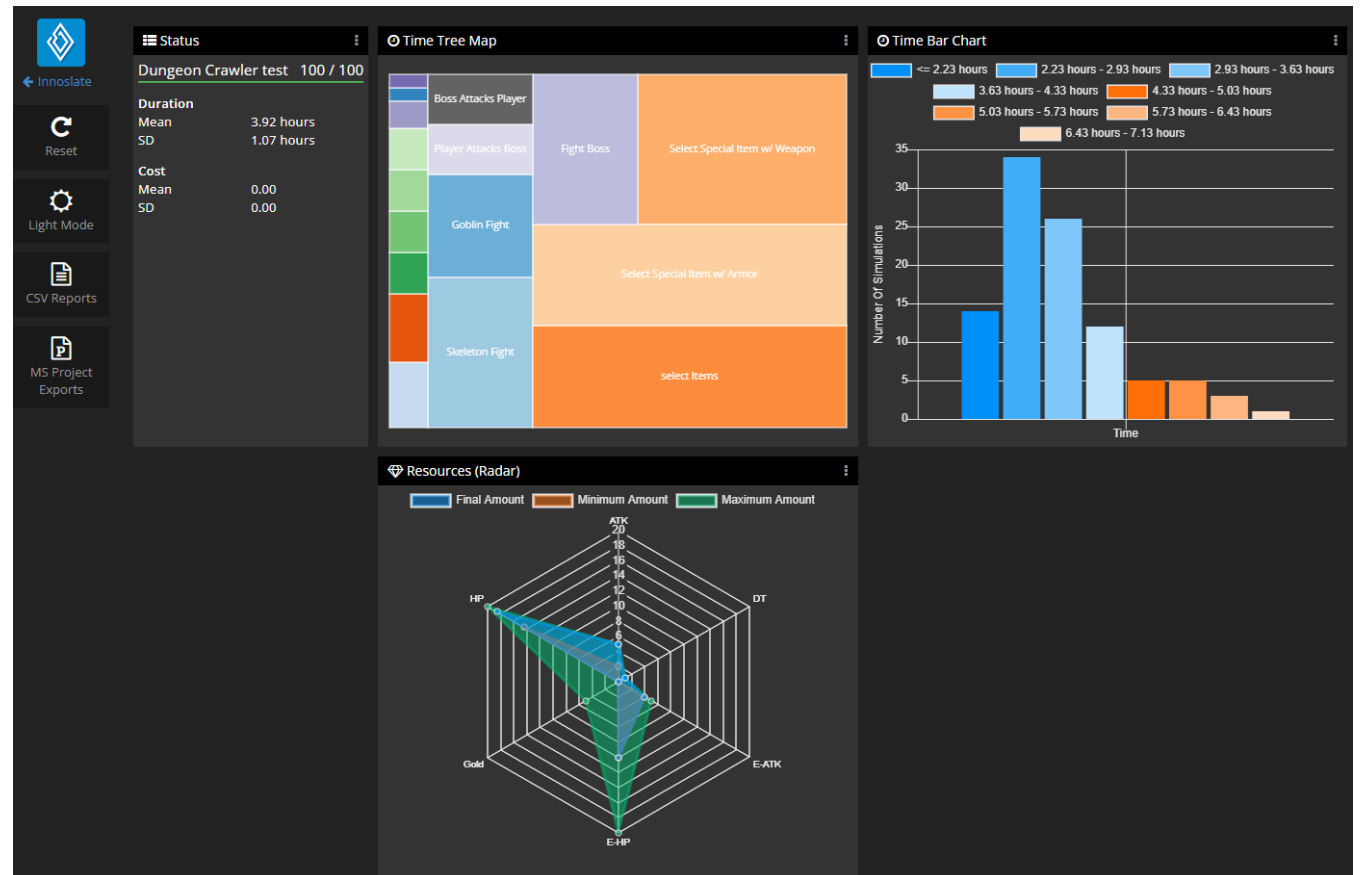


Important Lessons

- How to decompose a diagram in another diagram
- Using and uses of Resources
- Importance of prefixes
- Different timing distributions
- Creating custom relations in the schema editor

Monte Carlo Simulation

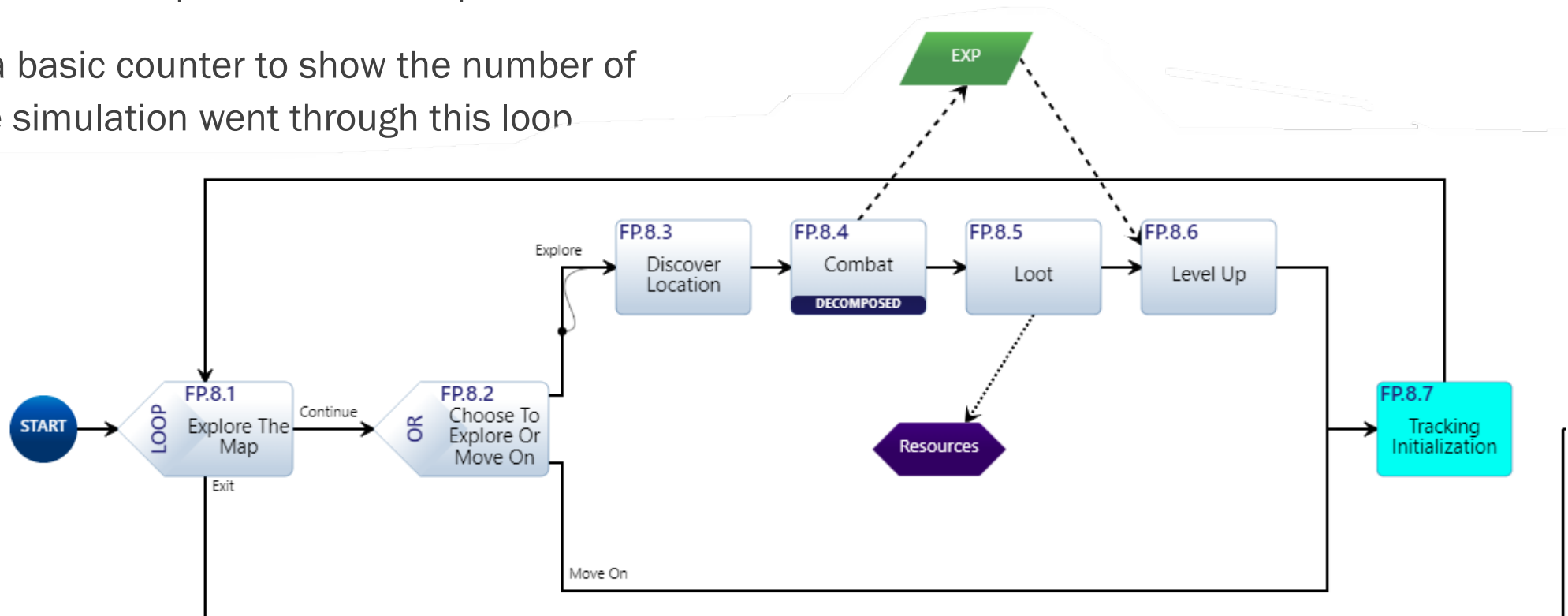
- A Monte Carlo simulation, goes through the activity multiple times.
- Helps to determine the possibility of branching paths and their probability
- Gives users information about their activity diagram



Java scripting

Learned how to implement Javascript in an action

Create a basic counter to show the number of time the simulation went through this loon



Sopatra

Sopatra is a digital assistant designed to improve the way Standard Operating Procedures (SOP) are designed and analyzed. *Sopatra* takes advantage of best-practice SOP heuristics to help the user develop more effective and efficient SOPs and allows for simulating the models to verify that each step is both accurate and can reliably be completed in the allowable amount of time.

I had some training in Sopatra nearing the end of the internship from Mr. S. Dam

Agile & DevSecOps

- Agile is a workflow based on breaking a large project into several phases while keeping to specified standards
- Attended agile training overview for 2 days
- Learned in what ways it improves business processes
- DevSecOps is an organizations culture and practices that allows an organization to reduce gaps between software developer, security, and operations teams
- DevSecOps can be used with Agile to improve daily work

People I Met

- KT – Computer Scientist: Modeling and Simulation
- RS – Lead IT
- EC – Senior Systems Engineer & Recruiter
- BL – Project Metrics & Reporting
- JB – Modeling & Simulations
- EJ – System Engineering & Project Management
- SD – CEO of Spec Innovations (Creator of Innoslate and Sopatra)