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Context Sensitive Interaction Annotation Langue and Visualization Application

Taylor E. Berger

Sandia National Laboratories

Exceptional

service

in the

national

interest

U.S. DEPARTMENT OF ENERGY

NNSA
National Nuclear Security Administration

Outline

- Motivation
- Annotations
- Visualization
- Demo
- Questions

Motivation

- Part of larger project at SNL
  - Models the transfer of money and assets across the entire financial system
  - Simulates the physical communications network underneath the financial system structure
- We want to see it…
- Context sensitivity?
  - InformationNetwork<S, R>
    - One directional message passing
    - Multiple networks of the same type are possible

Annotations

- Java 1.7 Annotation Classes
- Visualization is consistent with the model
- Runtime Availability
- Only three types of annotations
  - Entities, information, interactions

Annotation: Entities

- Target: Types
- Fields:
  - Name
  - Value
  - Record flag
  - Tags

Annotation: Information

- Target: Class Fields
- Fields:
  - Value
  - Record Flag

Annotation: Interaction

- Target: Class Fields or Function Parameters
- Fields:
  - Name
  - Value
  - From
  - To
  - Intermediates

Visualization

- Class, Superclass, Interface → Annotations → JSON
- Javascript
  - JQuery
  - Bootstrap
- Data Driven Documents (D3)
- Local Webapp server

Demo

Questions?