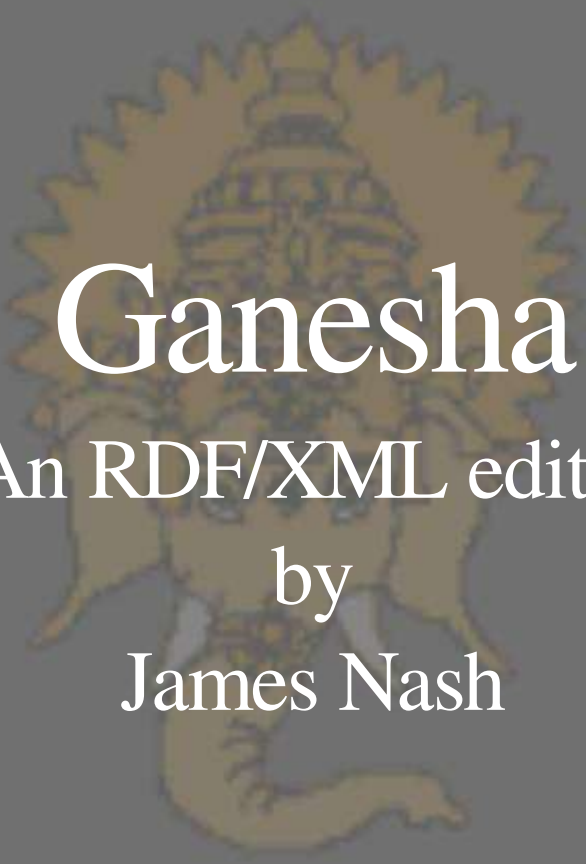


Ganesha

An RDF/XML editor

by

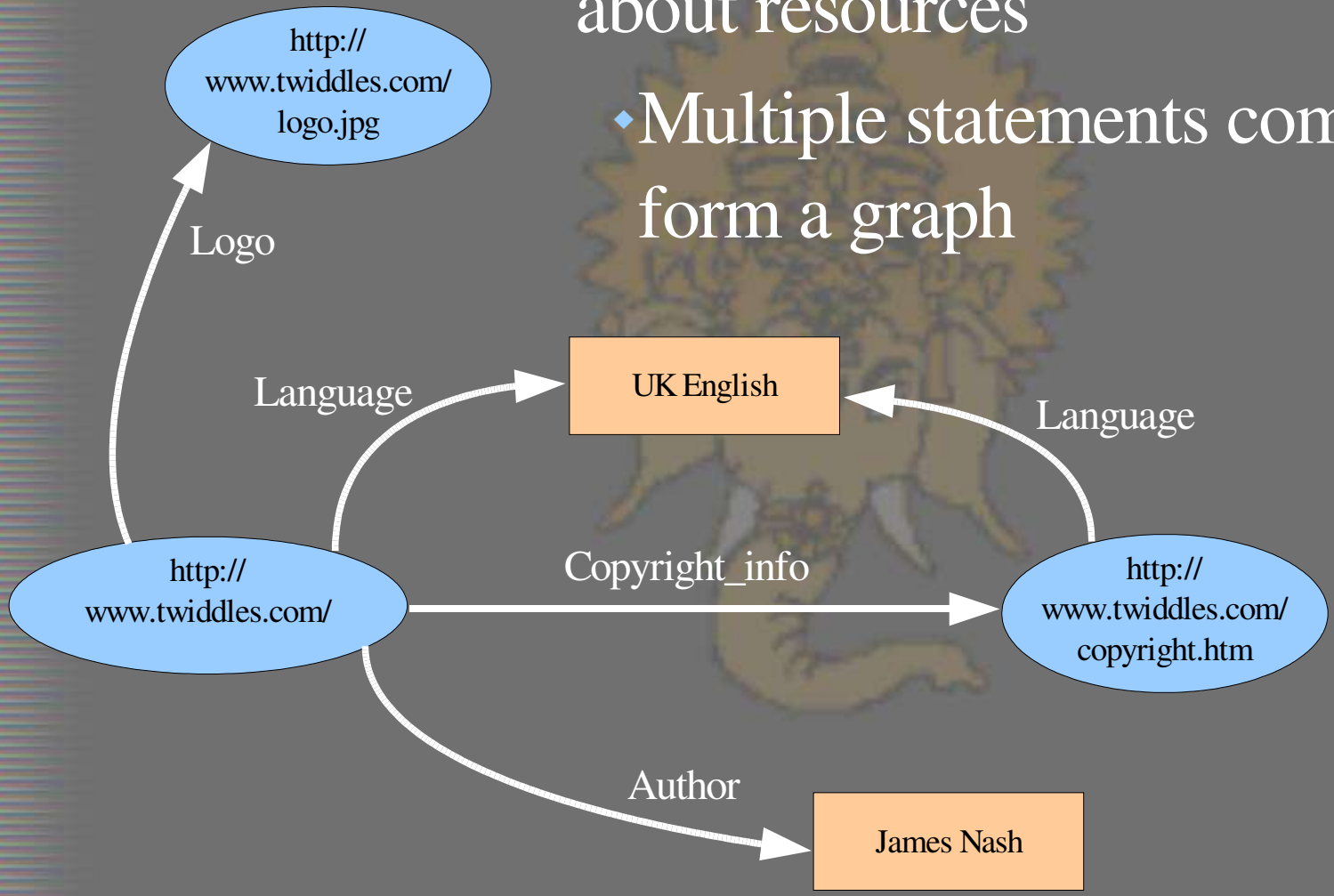
James Nash

What is RDF?

- RDF = Resource Description Framework
- Model for describing properties of resources and relations between them.
- Standardised by the World Wide Web Consortium (W3C)
- Vocabularies define standard sets of properties
- Can be encoded in a variety of formats – the most popular is RDF/XML

The RDF model

- RDF lets you make statements about resources
  - Multiple statements combine to form a graph



Uses of RDF data

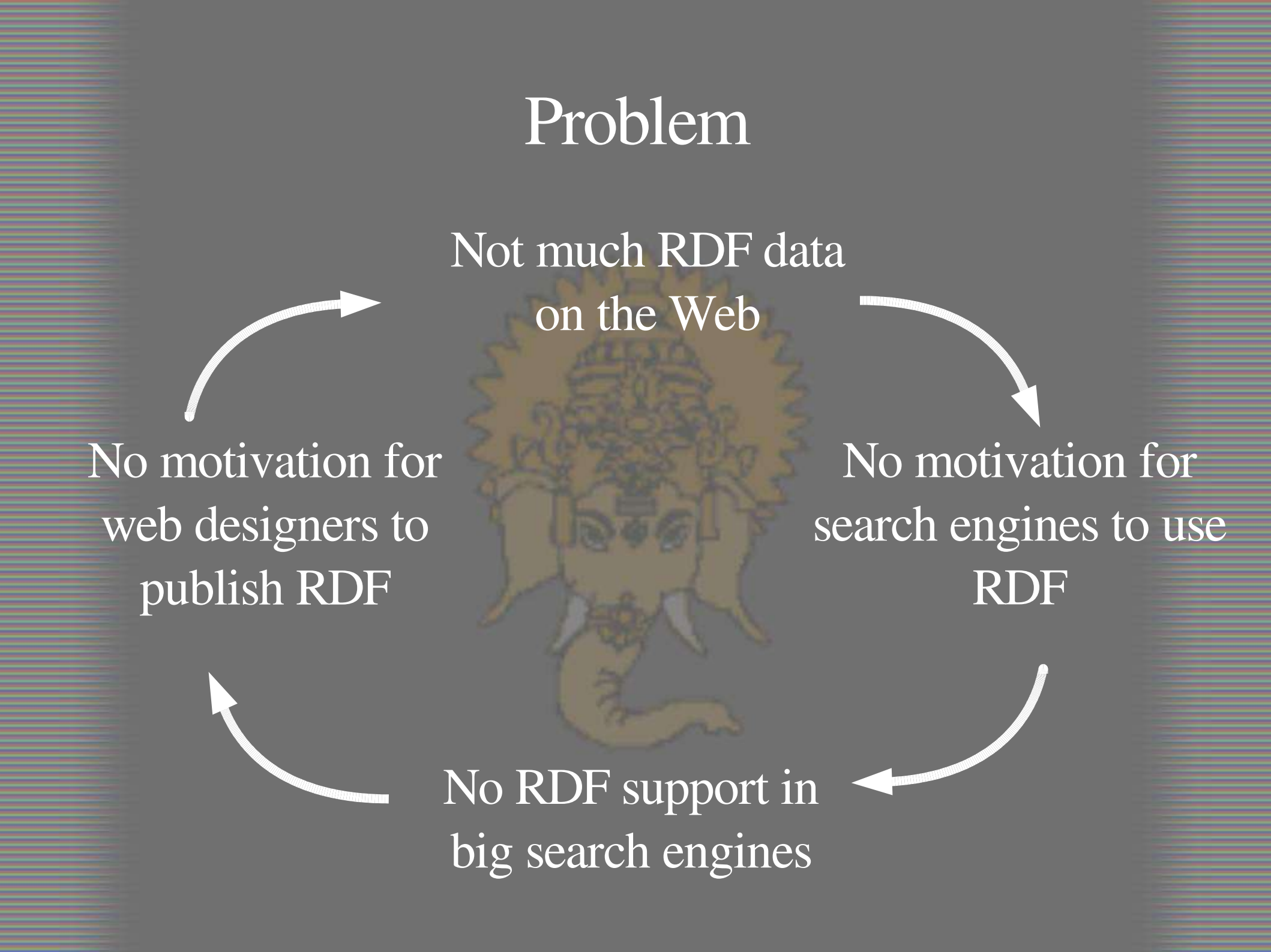
- "Semantic Web"

  "The Semantic Web is an extension of the current web in which information is given well-defined meaning, better enabling computers and people to work in cooperation."

  (Tim Berners-Lee, James Hendler, Ora Lassila, The Semantic Web, Scientific American, May 2001)

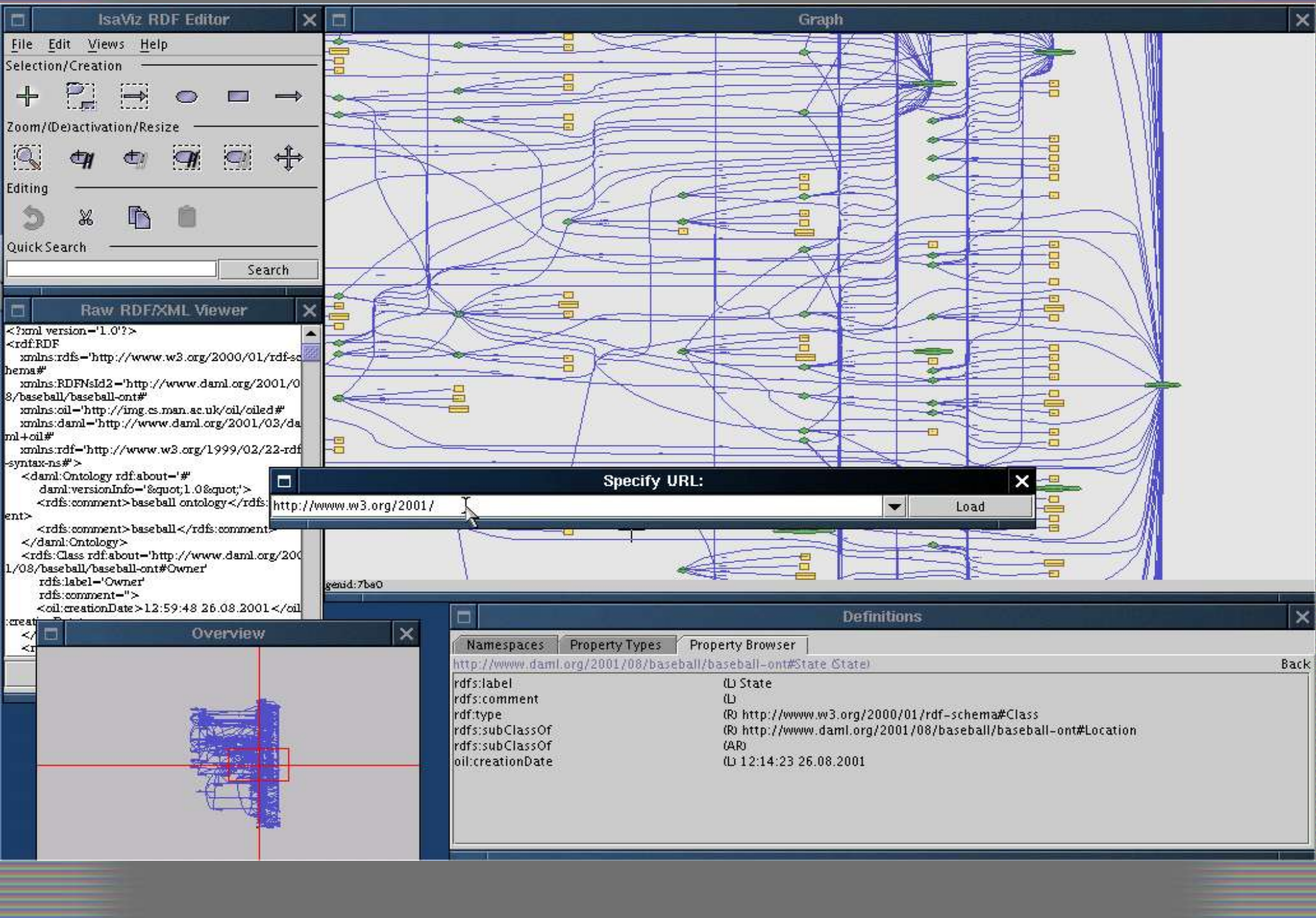
- More powerful search tools
- Social networking
- Who knows what else!

Problem


Not much RDF data on the Web
No motivation for search engines to use RDF
No RDF support in big search engines
No motivation for web designers to publish RDF

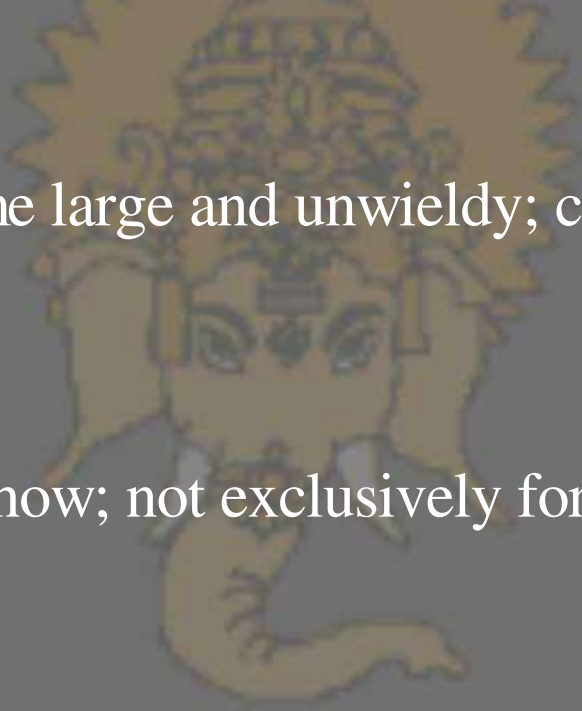
Current RDF tools

- Web-based editors (eg: FOAF-o-matic)
  Limited to particular vocabularies; too basic
- IsaViz


IsaViz RDF Editor
File Edit Views Help
Selection/Creation
Zoom/(De)activation/Resize
Editing
Quick Search
Search
Raw RDF/XML Viewer
<?xml version='1.0'?>
<rdf:RDF
xmlns:rdfs='http://www.w3.org/2000/01/rdf-schema#'
xmlns:RDFNsId2='http://www.daml.org/2001/08/baseball/baseball-ont#'
xmlns:oil='http://img.cs.man.ac.uk/oil/oiled#'
xmlns:daml='http://www.daml.org/2001/03/daml+oil#'
xmlns:rdf='http://www.w3.org/1999/02/22-rdf-syntax-ns#'>
<daml:Ontology rdf:about='#'
daml:versionInfo='"1.0"'>
<rdfs:comment>baseball ontology</rdfs:comment>
<rdfs:comment>baseball</rdfs:comment>
</daml:Ontology>
<rdfs:Class rdf:about='http://www.daml.org/2001/08/baseball/baseball-ont#Owner'
rdfs:label='Owner'
rdfs:comment=''>
<oil:creationDate>12:59:48 26.08.2001</oil:creationDate>
Graph
Specify URL:
http://www.w3.org/2001/
Load
genid:7ba0
Overview
Definitions
Namespaces
Property Types
Property Browser
http://www.daml.org/2001/08/baseball/baseball-ont#State (State)
Back
rdfs:label (L) State
rdfs:comment (L)
rdf:type (R) http://www.w3.org/2000/01/rdf-schema#Class
rdfs:subClassOf (R) http://www.daml.org/2001/08/baseball/baseball-ont#Location
rdfs:subClassOf (AR)
oil:creationDate (L) 12:14:23 26.08.2001

Current RDF tools

- Web-based editors (eg: FOAF-o-matic)
  Limited to particular vocabularies; too basic
- IsaViz
  Graphs quickly become large and unwieldy; complex user interface
- XMLSpy
  Requires XML know-how; not exclusively for RDF



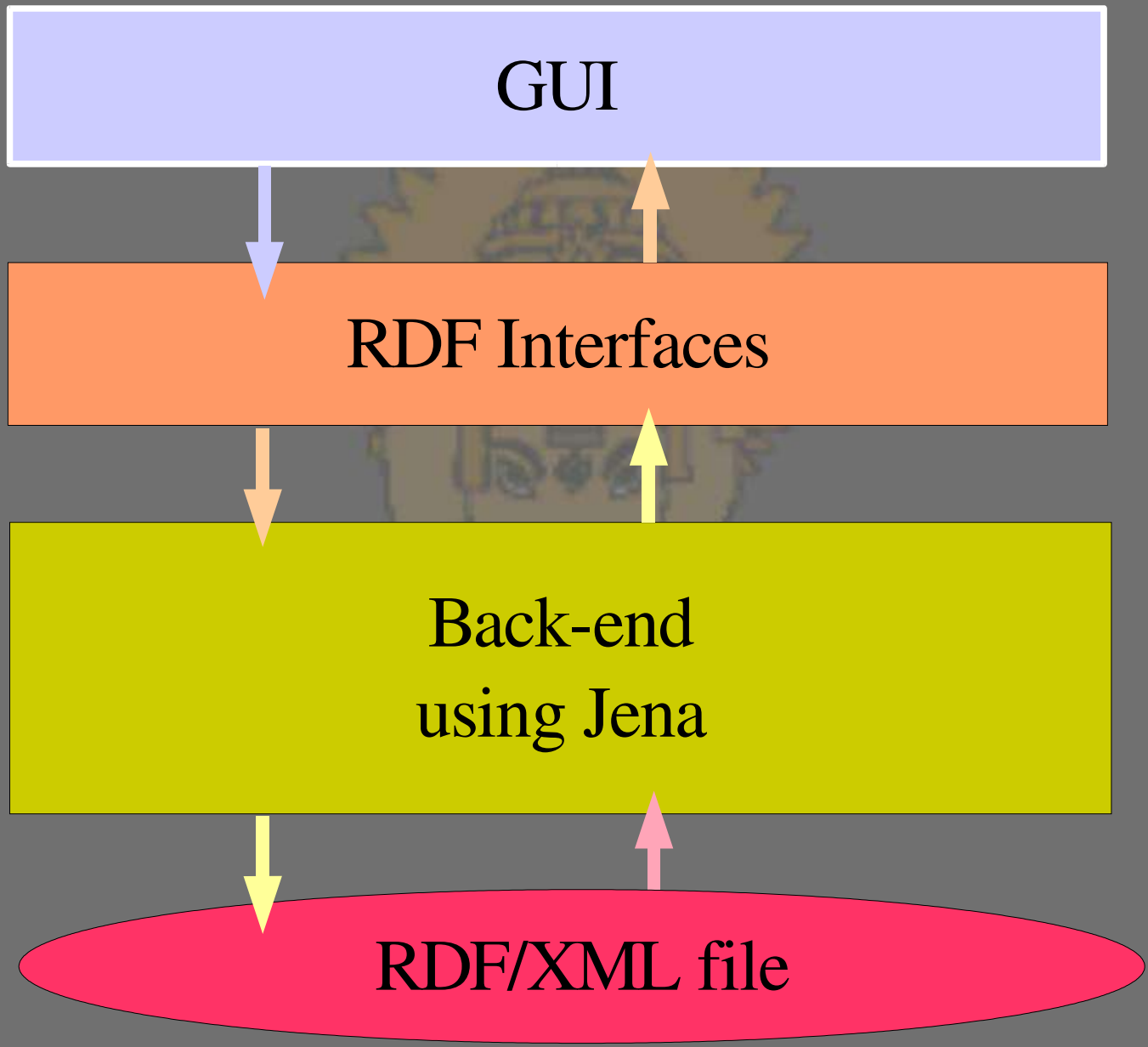
Ganesha's approach

- Focuses only on basic RDF features that users mostly need → lowers the learning curve
- Breaks RDF data down into small, more manageable chunks → reduces "Information Overload"
- Completely hides RDF/XML syntax from users

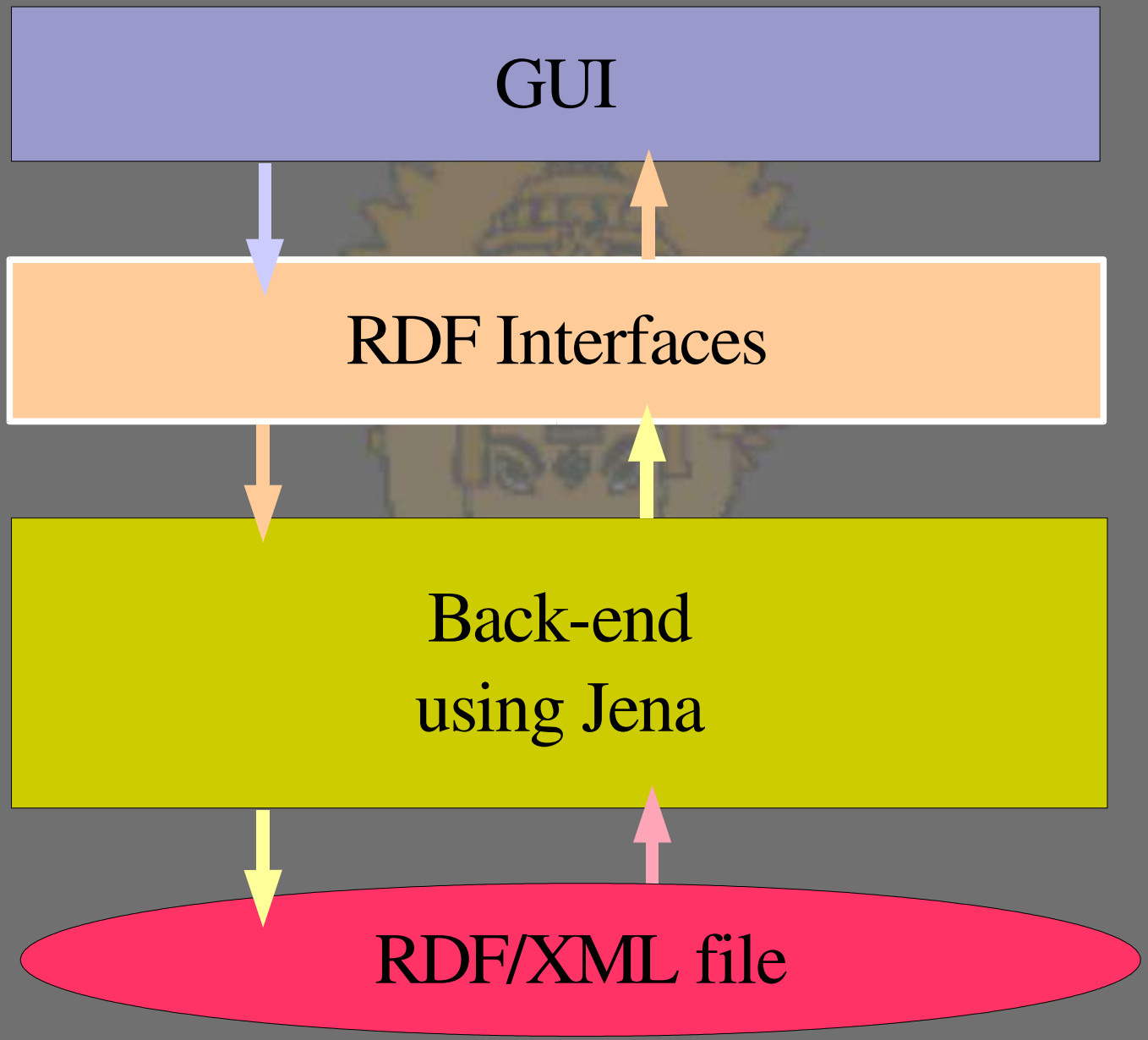
GUI usability

- Breaks model down by displaying resources one at a time
- Use of “wizards” to guide users
- Use of visual hints to help users navigate the data
- Adheres to Java Look and Feel guidelines

Program Structure



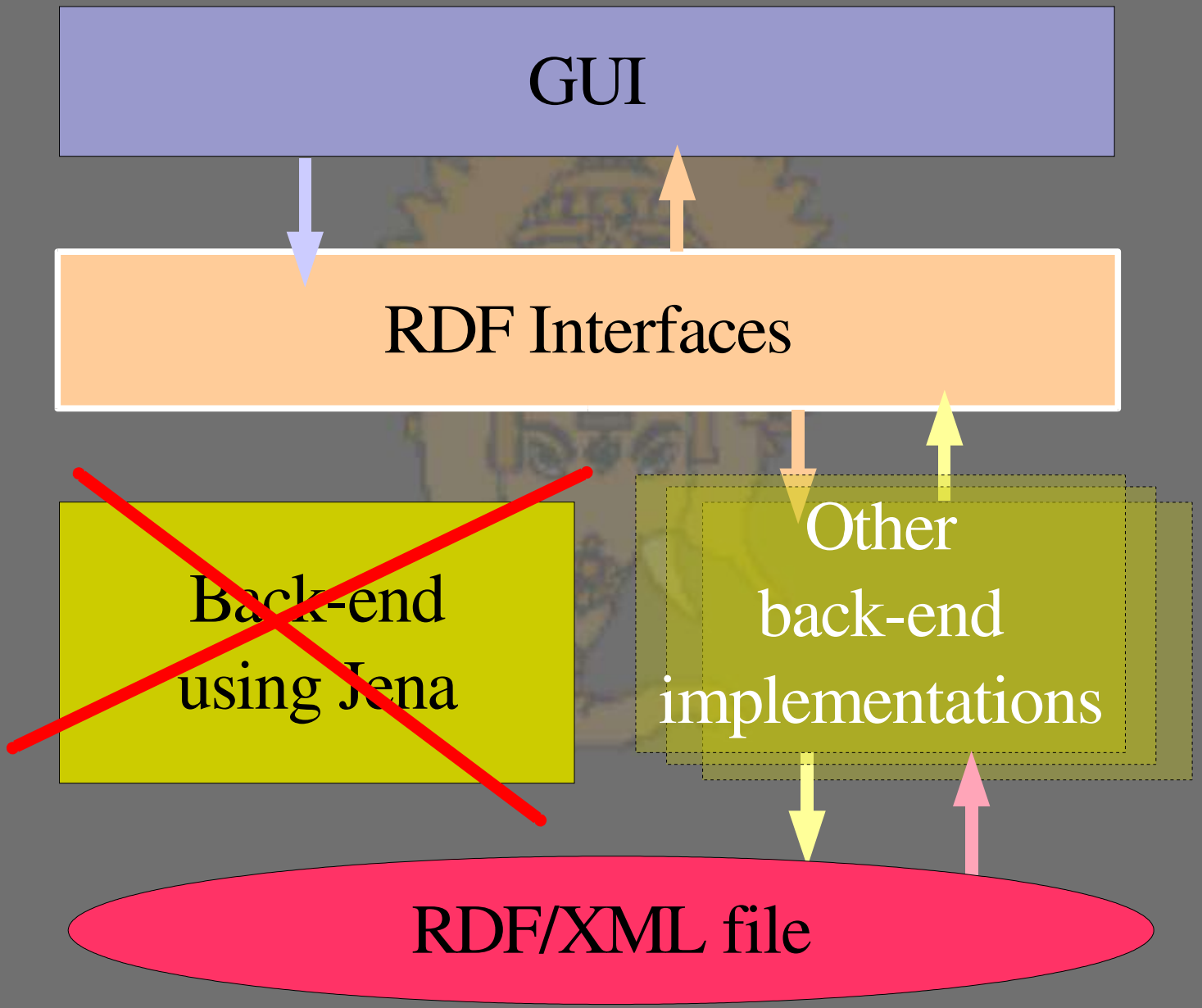
Program Structure



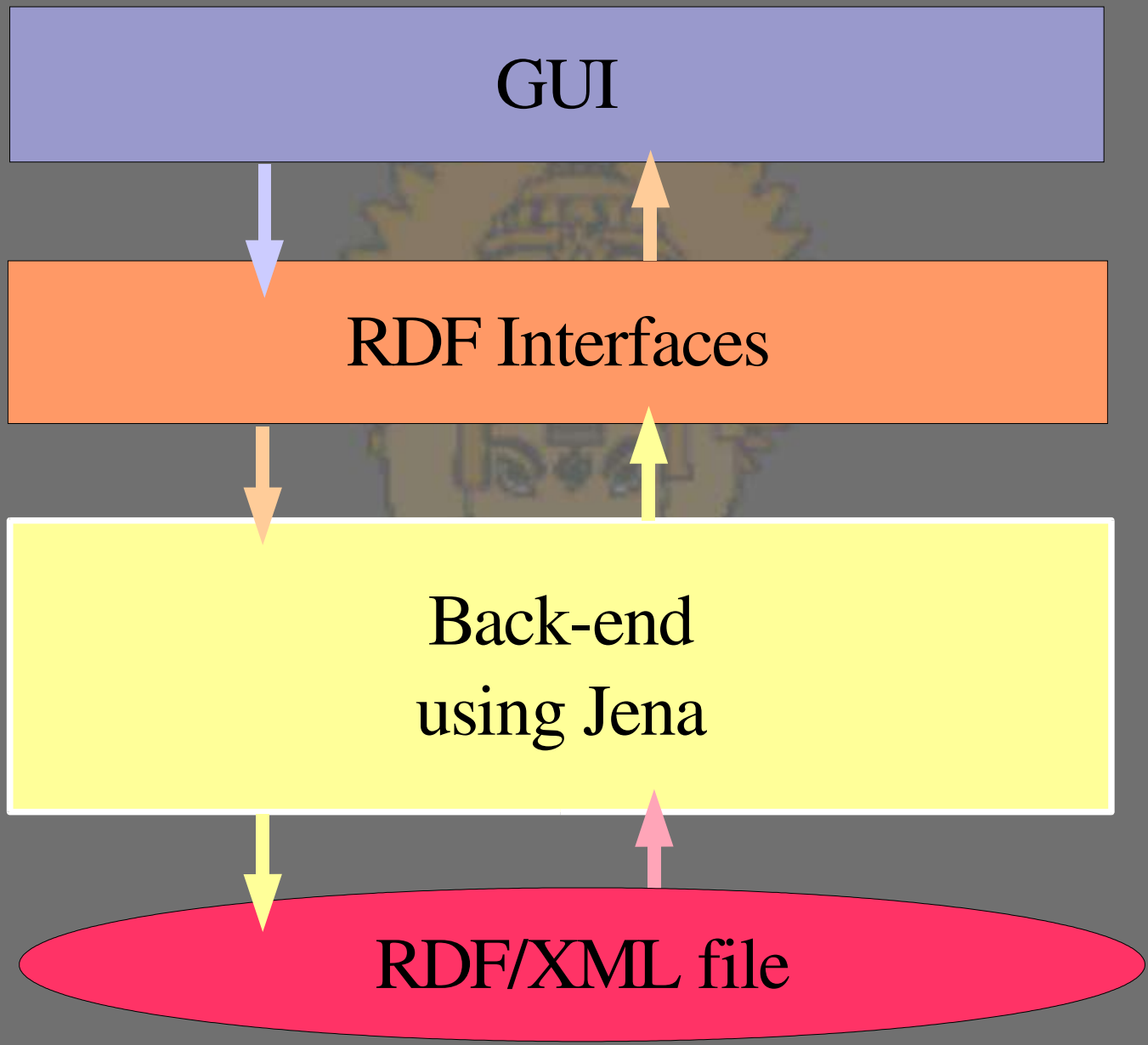
Interfaces

- Separate RDF/XML back-end from GUI classes
- Simplify calls from GUI to work with RDF data
- Could alter or completely replace RDF/XML implementation without any changes to GUI code
  → simplifies future developments and maintenance

Alternative back-ends



Program Structure



Jena RDF/XML back-end

Why Jena?

- Used by other RDF applications
- Up-to-date standards support
- Well documented
- Free & open source

Future directions

- Package Ganesha for easier installations (perhaps using Apache's ANT)
- Improve RDF vocabulary support
- Continue development as open source project (probably GNU Savannah)

Summary

- Ganesha succeeds at making RDF creation accessible and attractive to a wide audience
- Ganesha is designed to allow for future extensions and improvements
- Ganesha is not just an academic exercise – it's a real tool with a future!

Demo time....