



# CARA – A RDF Parser

Göttingen, 2005-02-28 – 2005-03-02

# Contents of today's talk



- Introduction
- Short intro to RDF/XML
- Overview of CARA Parser
- CARA Parser's functionality
- A Sample RDF/XML with new syntaxes
- Parser capabilities
- Cara output features
- Conclusion

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# Introduction



- CARA is a RDF parser.
- It parses the RDF/XML and generates triples and graphs.
- It follows the RDF Grammar given by W3C .
- CARA was developed by Department of Mathematik / Informatik, University of Osnabrueck and was written in Perl.
- Upgradation of cara was the part of CASHMERE project (<http://www.iwi-iuk.org/cashmere/>)

# Introduction (cont)



- CARA was developed earlier by Mr. *Stefan Kokkelink* for uni Osnabrück.
- This parser was not compatible with the new version of RDF/XML
- It has been upgraded as a part of CASHMERE-int to new RDF/XML syntaxes.
- The parser is now available online at <http://zoe.mathematik.uni-osnabrueck.de/RDF/parser.html>

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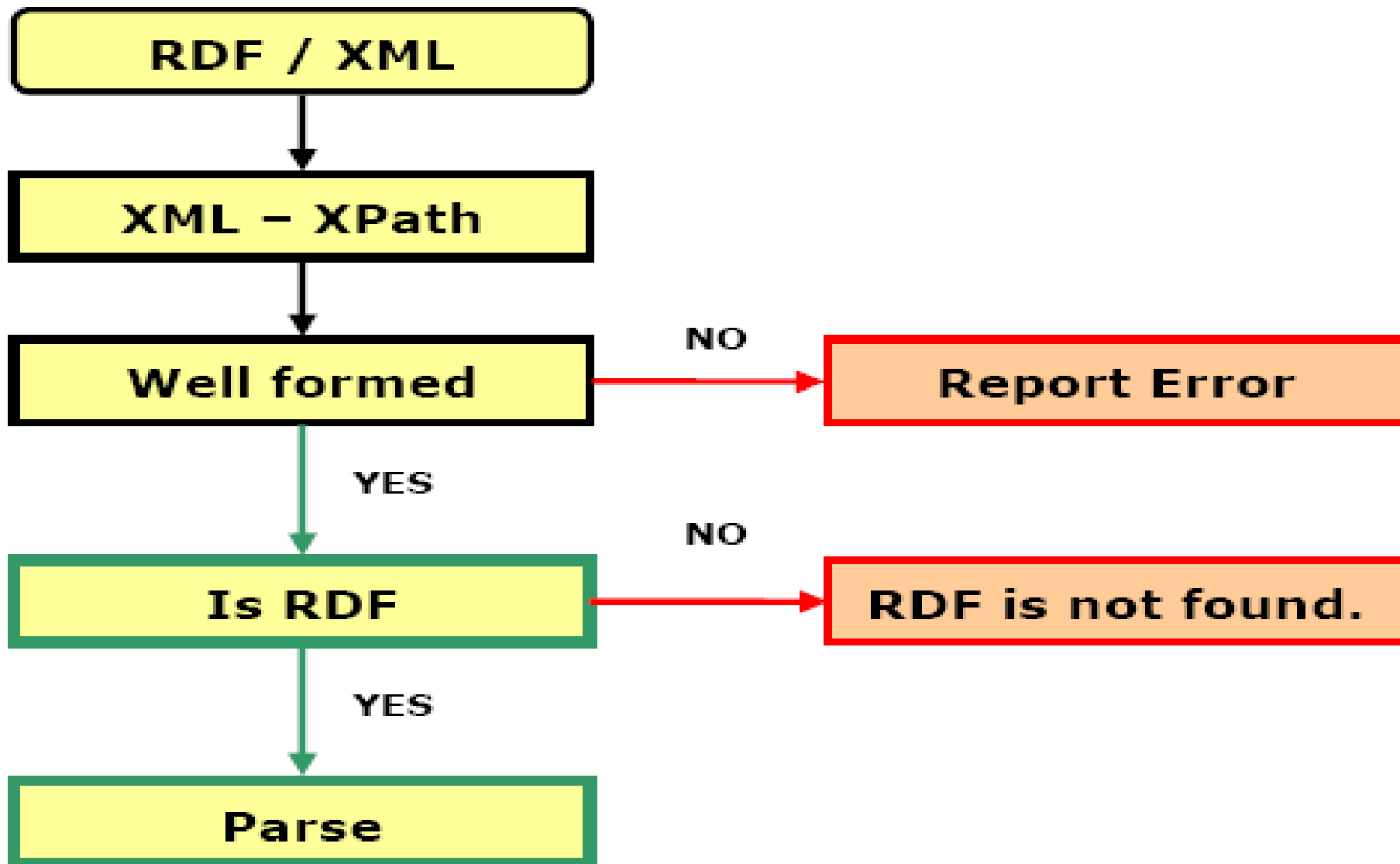
# Introduction to RDF



- RDF stands for **R**esource **D**escription **F**ramework .
- RDF is a framework for describing resources on the web.
- RDF provides a model for data, and a syntax so that independent parties can exchange and use it .
- RDF is designed to be read and understood by computers.
- RDF can also be represented in XML
- RDF is a part of the W3C's Semantic Web Activity and a W3C Recommendation

# CARA Overview

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# CARA overview (cont..)



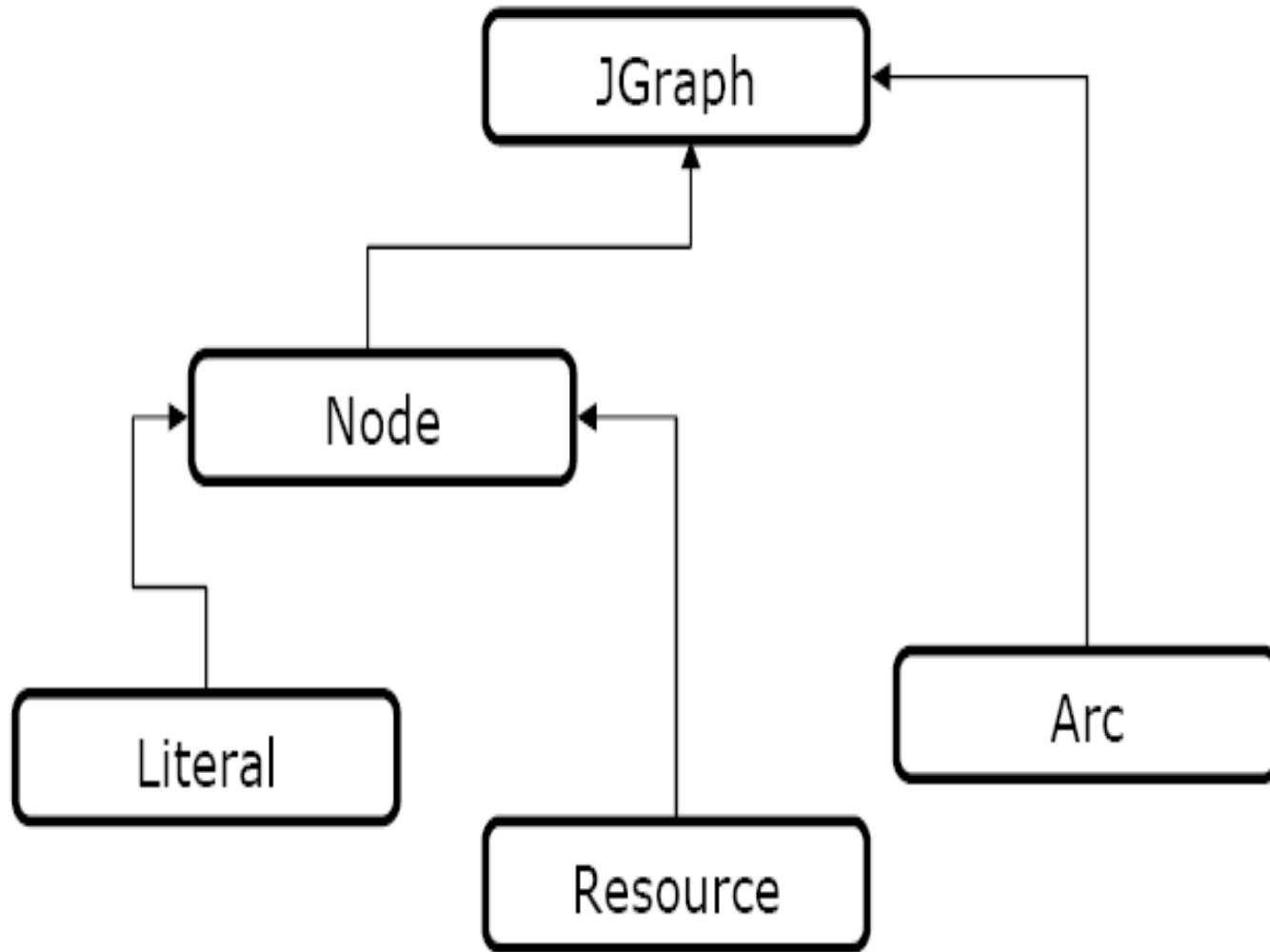
- The input stream of RDF/XML is given in to XML XPath parser.
- This is the module available in CPAN (<http://www.cpan.org>).
- This Parser validates the given input if it is well formed.
- CARA takes the output of XPath if it is well formed and checks for the valid RDF entry.
- If RDF is embedded in the given input it starts the parse routine.

# Parser functionality



- The parse subroutine of CARA takes in the output of XML XPath parser .
- It follows the RDF grammar for each node separately to parse the input into triples.
- For each triple the subject and object of the triple are stored in JGraph object as nodes.
- The node can be either a resource or literal.
- The predicate is stored in as arc. At last the Graph has the collection of nodes and arcs.

# JGraph



# Example RDF



```
<rdf:RDF
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-
  syntax-ns#"
  xmlns:dc="http://purl.org/dc/elements/1.1/"
  xmlns:ex="http://example.org/stuff/1.0/">
  <rdf:Description rdf:nodeID="abc"
  ex:fullName="Dave Beckett">
  <ex:homePage
  rdf:resource="http://purl.org/net/dajobe/" />
  </rdf:Description>
</rdf:RDF>
```

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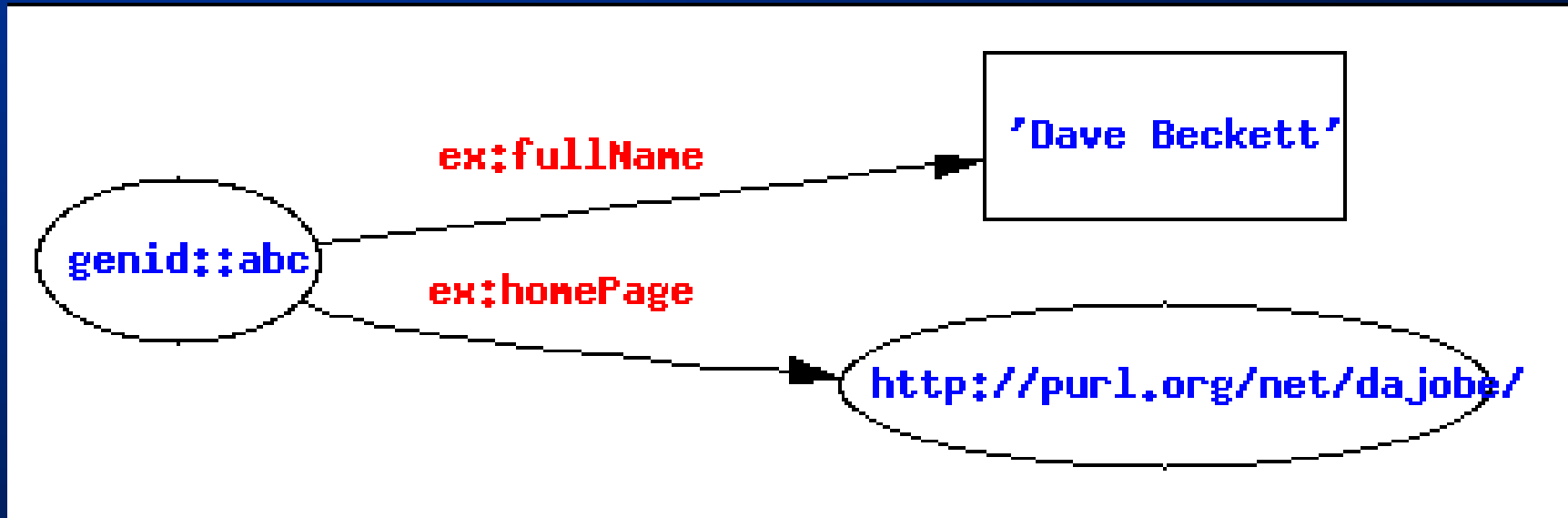
# RDF Triples



Subject	Predicate	Object
genid::abc	<a href="http://example.org/stuff/1.0/fullName">http://example.org/stuff/1.0/fullName</a>	Dave Beckett
genid::abc	<a href="http://example.org/stuff/1.0/homePagehttp">http://example.org/stuff/1.0/homePagehttp</a>	<a href="http://purl.org/net/dajobe/">http://purl.org/net/dajobe/</a>

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# RDF Graph



# Parser capabilities



- It is capable of parsing RDF embedded in HTML or XML
- It supports the complete XML Schema data types
- It supports complete Unicode characters

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# CARA Output features



- Triples , JGraph objects , Graphs.
- User friendly error messages.
- Avoids duplicate triples.
- The graphs are customizable
  - choose the color
  - gif and ps file format
  - font colors
  - orientation top-down , left-right.

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# Online demo



- <http://zoe.mathematik.uni-osnabrueck.de/RDF/parser.html>

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# Features



- This program is free software.
- This will be useful for perl application programmers.
- you can redistribute it and/or modify it under the same terms as Perl 5 itself.
- CARA has also passed in all the RDF Test cases

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## References:

- <http://www.w3.org/TR/rdf-primer/>
- <http://www.w3.org/TR/1999/REC-rdf-syntax/>
- <http://www.w3.org/TR/2004/REC-rdf-concepts/>
- <http://www.w3.org/TR/2004/REC-rdf-testcases-20040210/>
- <http://zoe.mathematik.uos.de/RDF/parser.html>

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Thank you for your attention J

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