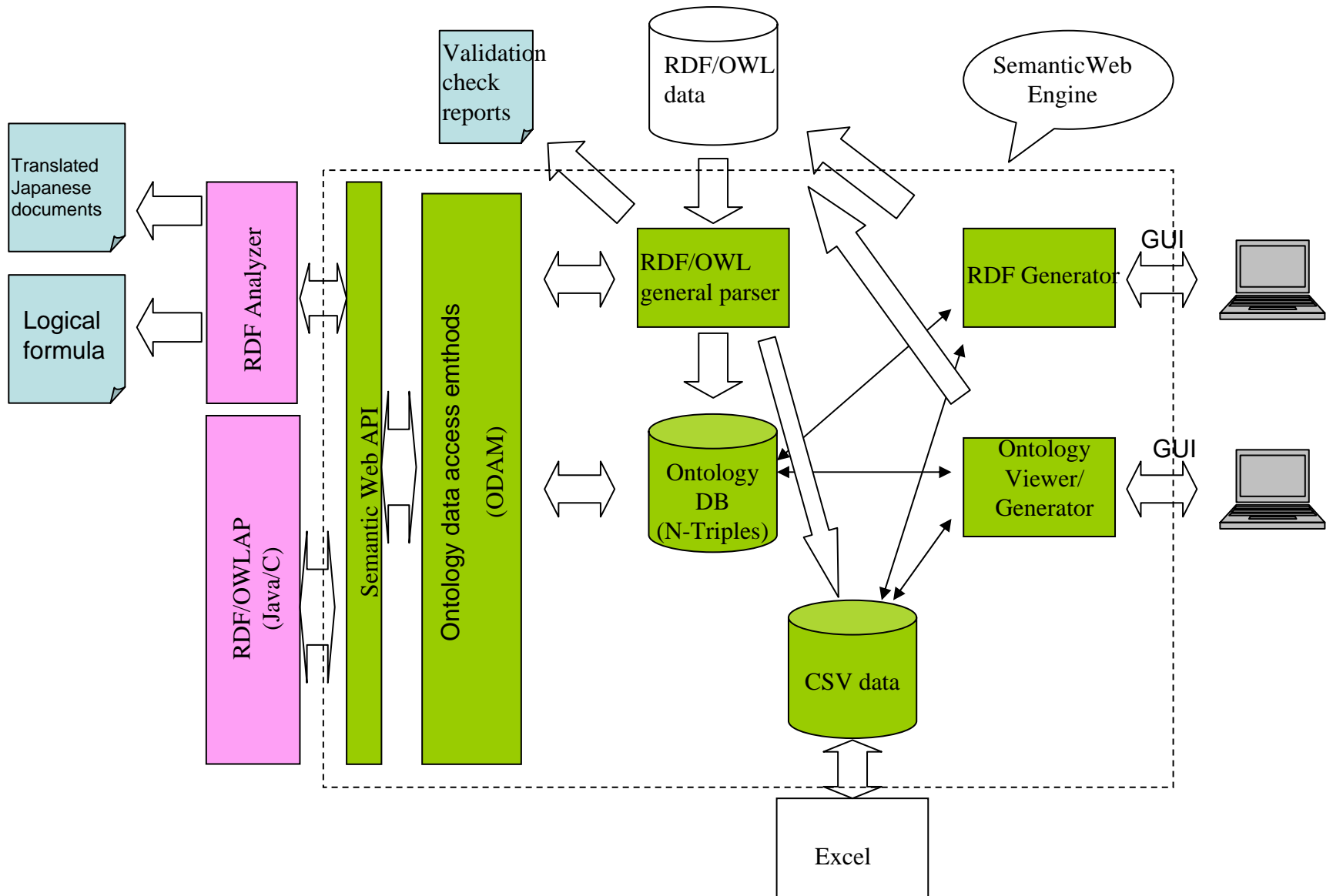


Semantic Web Engine

(A Semantic Web platform package)

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Components of the Semantic Web Engine



A snapshot of RDF/OWL parser

The screenshot displays the 'RDF Analyzer' application window. The interface is divided into two main sections: 'Tree View of Target Folder' on the left and 'Analyzed Results' on the right.

Tree View of Target Folder: This section shows a hierarchical tree of files and folders. The root folder is 'demo', which contains sub-folders 'ontologyviewer', 'RDFGenerator', and 'SemanticDataGenerator'. The 'SemanticDataGenerator' folder is expanded, showing a list of files including 'ClassSPOData.txt', 'DublinCore_Property.csv.txt', 'icon.ico', 'LabelClass.csv.txt', 'LabelProperty.csv.txt', 'MyResources_en_US.properties', 'MyResources_ja_JP.properties', 'NTdata.0.nt.txt', 'PropertySPOData.txt', 'RatingData.txt', 'RatingItem.csv.txt', 'RclassDefdata.csv.txt', 'RDFdata.0.rdf.txt' (which is selected), 'RDFparserjni.dll', 'RSS_Class.csv.txt', 'RSS_Property.csv.txt', 'RstDefdata.csv.txt', 'SemanticDataGenerator.jar', 'swt-win32-2135.dll', 'swt.jar', and 'TypeDefdata.csv.txt'. Below these are several presentation files (.ppt) related to 'SemanticWeb Engine' and 'SemanticWeb'.

Analyzed Results: This section displays a table of results for the selected file, 'RDFdata.0.rdf.txt'. The table has three columns: 'Time', 'Line', and 'Source Text'. The results show the XML structure of the RDF file, including the root element <?xml version="1.0"?>, the DOCTYPE declaration, and various XML namespace declarations (xmlns:xsd, xmlns:rdf, xmlns:rdfs, xmlns:owl, xmlns:label). The table also shows the definition of the 'Dell' class and its subclasses, such as 'デスクトップ' (Desktop), 'OptiPlexTM デスクトップ' (OptiPlexTM Desktop), and 'OptiPlex GX280ビジネススタンダード' (OptiPlex GX280 Business Standard).

Time	Line	Source Text
9h38m 6s	1	<?xml version="1.0"?>
9h38m 6s	2	<!DOCTYPE rdf:RDF [
9h38m 6s	3	<ENTITY xsd "http://www.w3.org/2001/XMLSchema#" ;
9h38m 6s	4	<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax
9h38m 6s	5	xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
9h38m 6s	6	xmlns:owl="http://www.w3.org/2002/07/owl#"
9h38m 6s	7	xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
9h38m 6s	8	xmlns:label="http://example.org/label#">
9h38m 6s	9	<rdfs:Class rdf:about="Dell" />
9h38m 6s	10	<rdfs:Class rdf:about="デスクトップ">
9h38m 6s	11	<rdfs:subClassOf
9h38m 6s	12	<rdfs:Class rdf:about="Dell" />
9h38m 6s	13	</rdfs:subClassOf
9h38m 6s	14	</rdfs:Class>
9h38m 6s	15	<rdfs:Class rdf:about="OptiPlexTM デスクトップ">
9h38m 6s	16	<rdfs:subClassOf
9h38m 6s	17	<rdfs:Class rdf:about="デスクトップ" />
9h38m 6s	18	</rdfs:subClassOf
9h38m 6s	19	</rdfs:Class>
9h38m 6s	20	<rdfs:Class rdf:about="OptiPlex GX280ビジネススタンダード">
9h38m 6s	21	<rdfs:subClassOf
9h38m 6s	22	<rdfs:Class rdf:about="OptiPlexTM デスクトップ" />
9h38m 6s	23	</rdfs:subClassOf
9h38m 6s	24	</rdfs:Class>
9h38m 6s	25	<rdfs:Class rdf:about="インテル Pentium 4 プロセッサ 570 (3.80G
9h38m 6s	26	<rdfs:subClassOf
9h38m 6s	27	<rdfs:Class rdf:about="OptiPlex GX280ビジネススタンダード"
9h38m 6s	28	</rdfs:subClassOf
9h38m 6s	29	</rdfs:Class>
9h38m 6s	30	<rdfs:Class rdf:about="インテル Pentium 4 プロセッサ 560 (3.60G
9h38m 6s	31	<rdfs:subClassOf
9h38m 6s	32	<rdfs:Class rdf:about="OptiPlex GX280ビジネススタンダード"
9h38m 6s	33	</rdfs:subClassOf
9h38m 6s	34	</rdfs:Class>

A snapshot of Ontology Viewer (in case of Galen Ontology)

The screenshot displays the 'Ontology Generator' application window. The main area on the left shows a hierarchical tree of classes, including 'galen:高血圧性病気', 'galen:心臓筋肉収縮工程', and 'galen:組織'. A context menu is open over the 'galen:組織' class, listing actions like '子供の追加', '挿入', '変更', and '削除'. The right pane, titled 'Ontologyの選択', shows 'Galen' selected. Below it, the 'セマンティックネットワーク定義' (Semantic Network Definition) table is visible.

記述対象リソース	プロパティ	プロパティ値
手掌(Palm)	表層的な部分有する(hasSurfaceDi...	母指球隆起(The narl
手(Hand)	表層的な部分有する(hasSurfaceDi...	手掌(Palm)
胃(Stomach)	層有する(hasLayer)	粘膜(Mucosa)
骨(Bone)	層有する(hasLayer)	皮質(Cortex)

At the bottom, there are two panels. The left one shows a table with columns for '主語(Subject)', '述語(Predicate)', and '目的語(Object)'. The right one shows an XML snippet representing an OWL class definition:

```

</owl:Class>
<owl:Class rdf:about="galen:細胞ブドウ糖摂取">
  <owl:equivalentClass>
    <owl:Class>
      <owl:intersectionOf rdf:parseType="Collection">
        <owl:Restriction>
          <owl:onProperty rdf:resource="galen:に運ぶ"/>
          <owl:someValuesFrom>

```

OWL vocabularies and logical symbols of the Semantic Web Engine (S symbol)

How to grasp and to create a complicated owl description is a big issue.

OWL vocabularies	meaning	Logical symbols
owl:unionOf	union	\cup
owl:intersectionOf	intersection	\cap
owl:complementOf	compliment	\neg
owl:cardinality	number	$=$
owl:minCardinality	minimum	\geq
owl:maxCardinality	maximum	\leq
owl:allValuesFrom	universal quantifier	\forall
owl:someValuesFrom	existential quantifier	\exists
rdfs:subClassOf	Sub class of	\in
owl:equivalentClass	equivalent	$=$
owl:hasValue	value	\equiv
owl:Restriction	Property restriction	[Property name] symbol Property value

OWL vocabularies and logical symbols of the Semantic Web Engine (S symbol)

OWL vocabularies	meaning	Logical symbols
owl:disjointWith	disjoint	\vee
owl:distinctMembers	All deferent	\neq
owl:oneOf	One of	(...)

Logical formula and OWL description

$\text{SemillonOrSauvignonBlanc} = \#Wine \cap ([\#madeFromGrape] \vee (\#SemillonGrape | \#SauvignonBlancGrape))$

```
<owl:Class rdf:ID="SemillonOrSauvignonBlanc">
  <owl:intersectionOf rdf:parseType="Collection">
    <owl:Class rdf:about="#Wine" />
    <owl:Restriction>
      <owl:onProperty rdf:resource="#madeFromGrape" />
      <owl:allValuesFrom>
        <owl:Class>
          <owl:oneOf rdf:parseType="Collection">
            <owl:Thing rdf:about="#SemillonGrape" />
            <owl:Thing rdf:about="#SauvignonBlancGrape" />
          </owl:oneOf>
        </owl:Class>
      </owl:allValuesFrom>
    </owl:Restriction>
  </owl:intersectionOf>
</owl:Class>
```

RDF Analyzer (the paerser's GUI)

