

Knowledge Organizer

What is FactGuru?

- **Technology for organizing knowledge**
 - *So that it can be easily found and explored by end-users*
- **We have several demonstration knowledge bases, including:**
 - *Object-Oriented Software Engineering (in conjunction with a McGraw-Hill book)*
 - *Astronomy*

History/development plan of FactGuru

Ongoing research by Doug Skuce's groups

Cognos project

Nortel/
ObjecTime project

Mitel project

Nortel project

Application to T Lethbridge's book:
published fall 2001

Established registered partnership

Planned incorporation of activity

Adding team members

Identify business partners

Improve quality of tools

Become independent of U of O

The FactGuru group is internationally respected in the field of Knowledge Management

1985

Sept 7, 2001

1990

1995

2000

2005

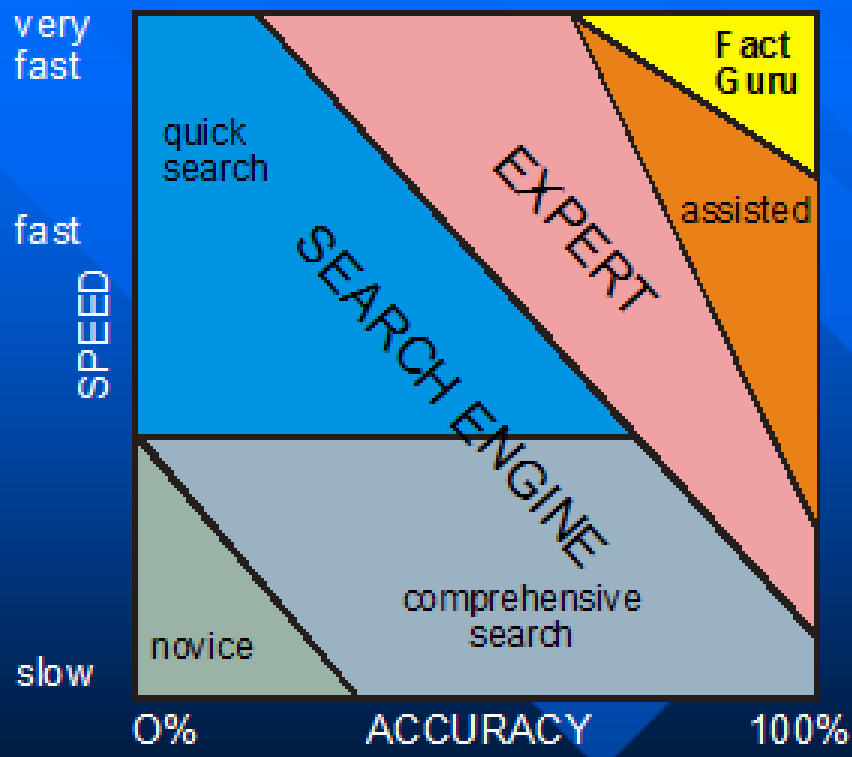
Key features of FactGuru

- Knowledge is distilled into simple facts
- Presented to users through a web interface:
 - *Organized in hierarchies*
 - *Multi-media capable*
 - *Easy to search*
 - *Easy to compare related knowledge*

Key features of FactGuru

- We have tools and a methodology to build knowledge bases
 - Our prototype knowledge organizer helps structure the knowledge
 - Knowledge is stored in a database
 - The web site builder creates what the end-user sees
- Readily translatable to other languages
 - Due to its simple structure
 - Important in a government context

Accuracy vs. speed for search tools



Key features of FactGuru

- **We have tools and a methodology to build knowledge bases**
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Find object

Concept hierarchy

- Java collection class
 - Java public class
 - Java subclass
 - Java wrapper class
 - Locale class
 - ServerSocket class
 - Socket class
 - stream class
 - filter
 - DataInputStream
 - DataOutputStream
 - object stream class
 - ObjectInputStream
 - ObjectOutputStream
 - OutputStream
 - Thread class
 - TimeZone class
 - role*2
 - singleton*2
 - subclass (derived class)
 - superclass (base class)
 - utility
 - view
 - comment
 - condition
 - data item
 - object (instance, instance: instance is used when you are talking at
 - immutable object
 - instance of user interface class
 - Java object
 - Java instance of exception class
 - Java instance of wrapper class
 - uninitialized object
 - occurrence
 - variable
 - data type
 - declaration
 - exception
 - function
 - keyword
 - name space
 - operator
 - package*2
 - procedure
 - constructor

Facts Compare

object

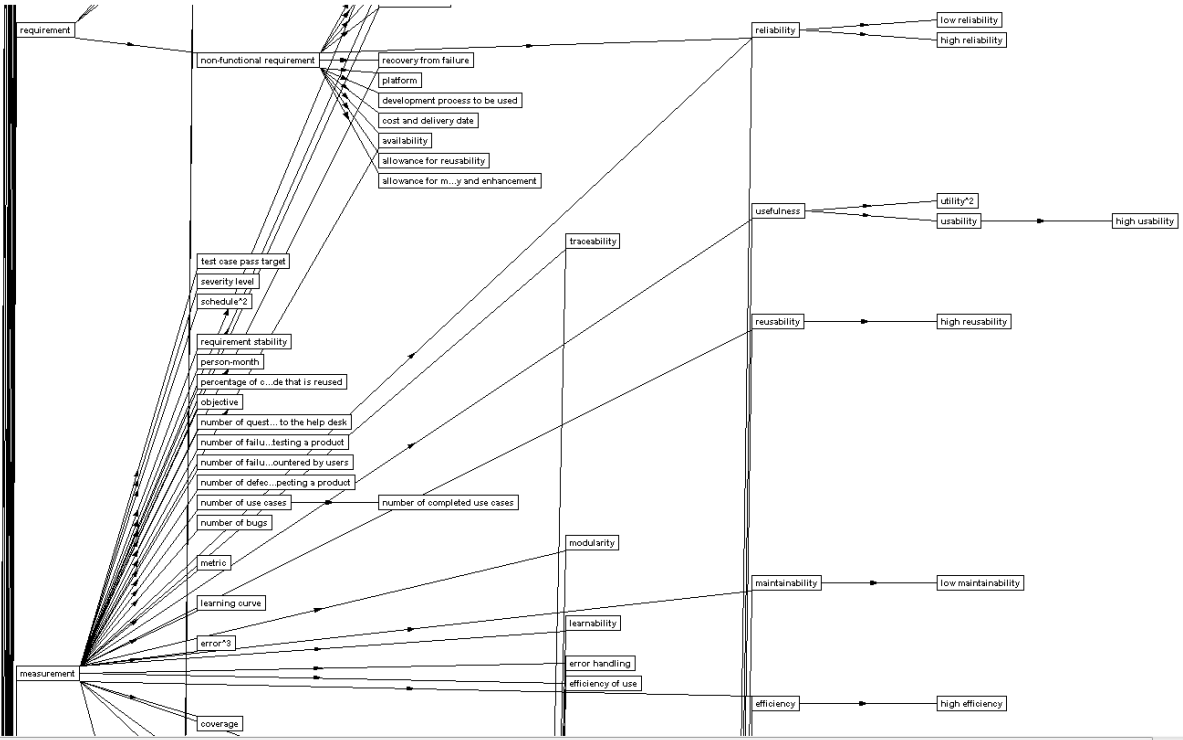
(instance, instance: instance is used when you are talking about the role with respect to the class and object is used when talking in a more general way)

subject	fact
object	is a synonym of instance
object	can be referred to without reference to the data (instance variables) contained in it
object	can be referred to by several different variables at the same time
object	can represent any entity to which you can associate properties and behaviour
object	has definition A data element in an object-oriented system , which has its own identity , belongs to a particular class , and has behaviour and properties
object	has live activation <i>while</i> the object is performing computations in a sequence diagram
object	has behaviour
object	has state
object	has synonym instance : instance is used when you are talking about the role with respect to the class and object is used when talking in a more general way
object	is distinct from every other object even if they contain the same data
object	is in a state until an event occurs that causes it to change state
object	is structured
object	is a subtopic of 2.1 - What is Object Orientation?
object	is drawn as a rectangle containing a colon and the underlined name of the class (optional if it is clear from the context), which may be preceded by an optional instance name in a UML instance diagram
object	is a kind of data item

Kinds of object :

- o [immutable object](#) (3 facts) - an object that has a state which never changes after creation
- o [instance of user interface class](#) (4 facts)
- [Java object](#) (3 kinds, 7 facts)
- o [occurrence](#) (4 facts) - An object that is a member of a set of classes that set share common information but also differ from each other in important ways

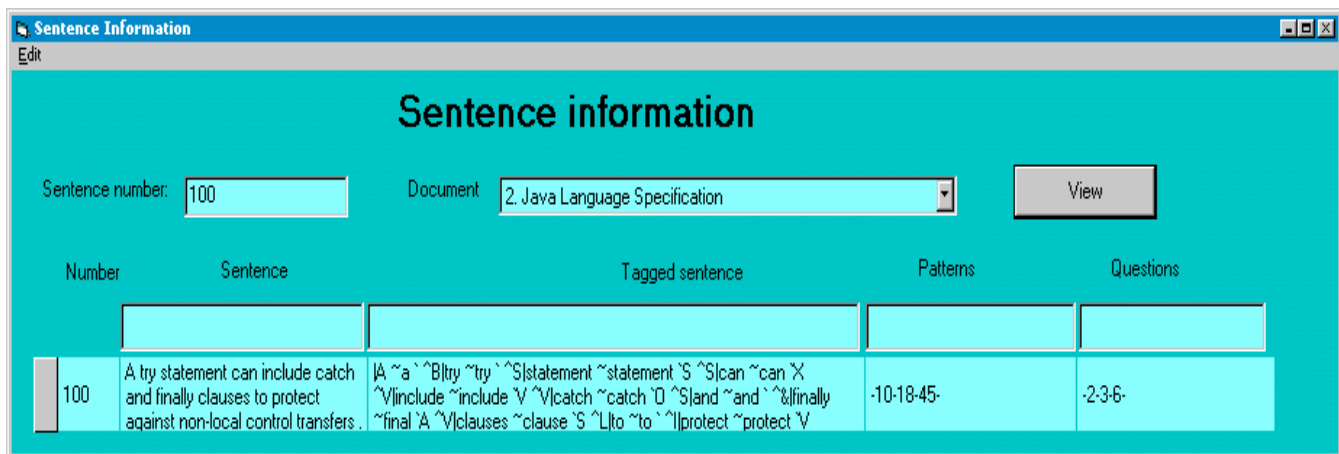
Find



TAKODO BUILDING A KD FROM A SET OF DOCUMENTS

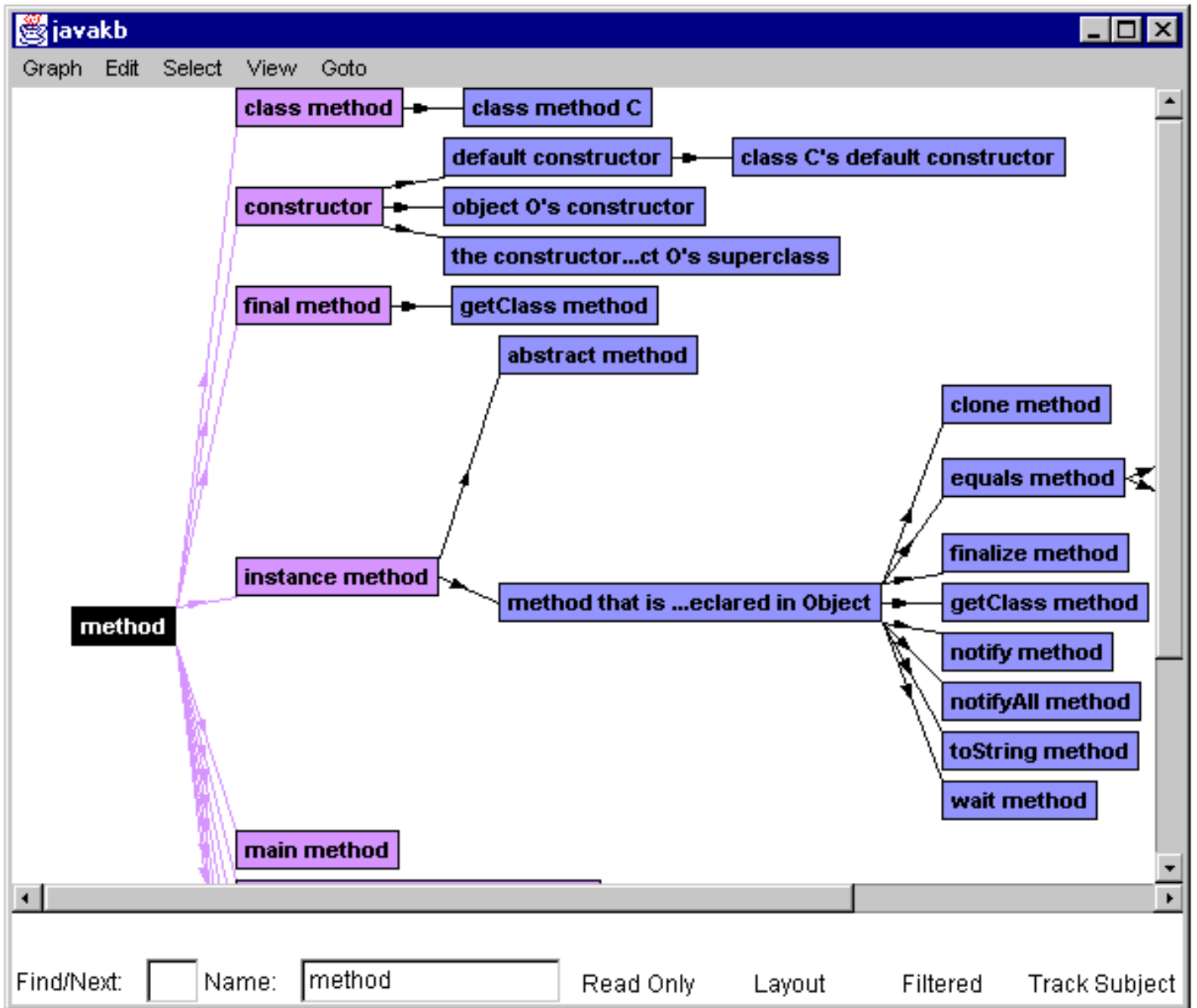
(MS – WRATKO HLAVINA, U OF OTTAWA, 2001)

Here is what we start with: a tagged sentence



The screenshot shows a window titled "Sentence Information" with a menu bar containing "Edit". The window contains a form with "Sentence number" (100) and "Document" (2. Java Language Specification) fields, and a "View" button. Below the form is a table with the following data:

Number	Sentence	Tagged sentence	Patterns	Questions
100	A try statement can include catch and finally clauses to protect against non-local control transfers.	A ~a`^B try`~try`^S statement`~statement`S`^S can`~can`X`^V include`~include`V`^V catch`~catch`D`^S and`~and`^& finally`~final`A`^V clauses`~clause`S`^L to`~to`^ protect`~protect`V`	-10-18-45-	-2-3-6-



New	Status	Weight	Source	Subject	Predicate	Complement	Rest
<input type="checkbox"/>			By guest: TA:Sente...	object	have	state, behavior	and behavior
<input type="checkbox"/>			By guest: TA:Sente...	object	have	access	to one another's private ...
<input type="checkbox"/>			By guest: TA:Sente...	object	have	hash code	

About Takodo | Messages | **Statement** | Facets | Source | Related | Summary | Words & Terms | Sentence

Subject: Predicate: Complement:

Rest:

Status: ? Weight:

Viewing: (Multiple) By guest: TA: Sentence SVO

Paste
 'object'
 'method'
 'class'

Finding answers - Done. 3 selected of 21 shown 21 answers

Dockman
 Modify Tree Menu Graph Menu View predicate, stmt and facet tables

Find subject:

- kbTop
 - abstract@
 - math@
 - set
 - computer
 - server
 - general language@
 - representation
 - object
 - J object
 - component
 - specification
 - J class
 - Object class

object

comment

an object occupies main or sometimes secondary memory

Add stmt to subject: Add facet to stmt Update Stmt Update facet

object Inheritance type No Name Full

Ancestors Children Hiding

subject	predicate	complement
1 object	definition1	An object is a representation of a part of a system.
2 object	context1	Everything that the software object knows (state) and can do (behavior) is expressed by the varia
3 object	specifies	the behavious.
<4 object	size	n bytes of memory
5 object	verb_collocates	to initialize an object
6 object	definition2	An object is a software bundle of variables and related methods. Software objects are often used to
7 object	persistence	An # may be persistent, meaning that it has a representation on a permanent storage medium so t
8 object	synonyms	instance. (An object is an instance of a class).
9 object	definition3	an object is a software module that has state and behavior . (Java Tutorial)
10 object	modify	send # a message that will change one of its variables

Goto >>> Delete selected statement Refresh grid

subject	facetname	value
<1 object	comment	an object occupies main or sometimes secondary memory
2 object	added by	DSkuce

Goto >>> Delete selected facet Refresh grid

This statement or facet is fully-inheriting

Subject/Verb/Object Form - Expanded

File Edit View Count Options

Document: Composting

Subject/Verb/Object

View

Filter:

doc #	sent #	subject modifier	subject	modal	verb	object modifier	object

Clear filters

sort on multiple columns Sort by:

Clear sort

doc	#	no subject	pre subject	subj. modifier	subject	subj.-verb	modal	verb	pre object	obj. modifier	object	post object
6	3				compost	have be		use(ed)	by gardener in landscape		garden	for many year
6	4				compost	be		use(ed)	on compact			
6	8		if cllrent	technical compost	guideline	be		follow(ed)				
6	8		and	the	process	be close		monitor(ed)	however			
6	13		with this law ,	many	municipality	have be		force(ed)	to develop(l)		compost	and recycle facility
6	15		,	alternative	use	must be	must	develop(ed)	for			
6	15				that	can no-longer be	can	send(ed)	to landfill			
6	15				that	can be	can	compost(ed)				
6	16		if	the	compost	be reasonable		price(ed)	of quality			
6	19		however ,	this	material	can be	can	use(ed)	as mulch to modify(l)		soil	temperature and
6	20				leaf	can also be	can	use(ed)	in manner			
6	21			this	material	should not be	should not	incorporate(ec	into soil like		compost	

Powell Extension Horticulture Specialists Published by : North Carolina Cooperative Extension Service Publication Number : AG 473-14 Last Electronic Revision : March 1996 (JWM)
Compost has been used by gardeners in backyard landscaping and gardening for many years .

System Edit View Find

Find: object isa In: Most Sources

New	Status	Weight	Source	Left	Word	Right
<input type="checkbox"/>			KB:WJKO			
<input type="checkbox"/>			KB:WJKO			
<input checked="" type="checkbox"/>			QA:supers OBJ...	This section shows you how to determine if...	object	really is an array.
<input checked="" type="checkbox"/>			QA:supers OBJ...	Note that the left bracket indicates that the	object	is an array.
<input checked="" type="checkbox"/>			QA:supers OBJ...	Remember, invoking a method on a particu...	object	is the same as sending a message to that ...
<input checked="" type="checkbox"/>			QA:supers OBJ...	In this case, the	object	is the rectangle called rect.
<input checked="" type="checkbox"/>			QA:supers OBJ...	Any	object	that is a Sleeper (and can therefore be pas...
<input checked="" type="checkbox"/>			QA:supers OBJ...	An	object	is a software bundle of variables and relate...
<input type="checkbox"/>			QA:supers OBJ...	Definition: An	object	is a software bundle of variables and relate...
<input checked="" type="checkbox"/>			QA:supers OBJ...	This is because all	objects	in RMI are Java objects.
<input checked="" type="checkbox"/>		Weight: 83.33333%	OBJ...	But it's also because many people use the ...	object	"inconsistently and use it to refer to both cla...
<input checked="" type="checkbox"/>			QA:supers OBJ...	For a method to modify an argument, it mu...	object	...

Software objects are modeled after real-world objects in that they, too, have state and behavior. A software object maintains its state in variables and implements its behavior with methods. **[Definition : An object is a software bundle of variables and related methods .]** You can represent real-world objects using software objects. You might want to represent real-world dogs as software objects in an animation program or a real-world bicycle as a software object within an electronic exercise bike.

About Takodo Messages Statement Facets Source Related Summary Words & Terms

Status	Weight	Source Type	Answer
<input checked="" type="checkbox"/>		KB	object definition from Tutorial a software bundle of variables and related methods

Finding answers - Done. At 11 of 29 shown 29 answers

Options **Subject (X)** Predicate (Y) Complement (Z)

Find Now

Find:

Pattern
object

Related Items	Include in Find?
Object	<input checked="" type="checkbox"/>
OBJECT	<input checked="" type="checkbox"/>
Objects	<input checked="" type="checkbox"/>
objects	<input checked="" type="checkbox"/>

Close

Show:

- Synonyms
- Related Word Forms
- Broader Concepts
- Similar Words
- Narrower Concepts

All **None** **Clear** **Default**

- If possible:
 - Ignore case
 - Ignore prefixes
 - Ignore suffixes

Description	Filter	Some Word	All Words	Other
Subject	@class:s	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Verb	@class:v	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Object	@class:o	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Noun	@class:N	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Modifier	@class:AD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Noun Frequency

Document:

All Java documents

Sort:

- ascending
 descending

View

Clear filters

Noun	Frequency
method	15907
object	9876
class	9866
program	5733
java	5571
file	5148
value	5003
code	4743
applet	4576
example	4159
type	3962
application	3954
classes	3456
interface	3408
name	3248
thread	3170
section	2959
statement	2753
string	2698
component	2615
information	2591
system	2564
data	2494
variable	2478

Term?	Word	Total Count	Count
✓	method	4407	4407
✓	class	2867	2867
✓	object	2672	2672
✓	file	2418	2418
?	java	2322	2322
✗	example	2079	2079
✓	program	1914	1914
✓	code	1869	1869
?	component	1740	1740
?	create	1415	1415

Find Words Like:

 Word ▾

Sentence Information Edit

Sentence information

Sentence number: Document:

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100	A try statement can include catch and finally clauses to protect against non-local control transfers.	A ~a`^B try ~try`^S statement ~statement`S`^S can ~can`X`^V include ~include`V`^V catch ~catch`D`^S and ~and`^& finally ~final`A`^V clauses ~clause`S`^L to ~to`^ protect ~protect`V	-10-18-45-	-2-3-6-