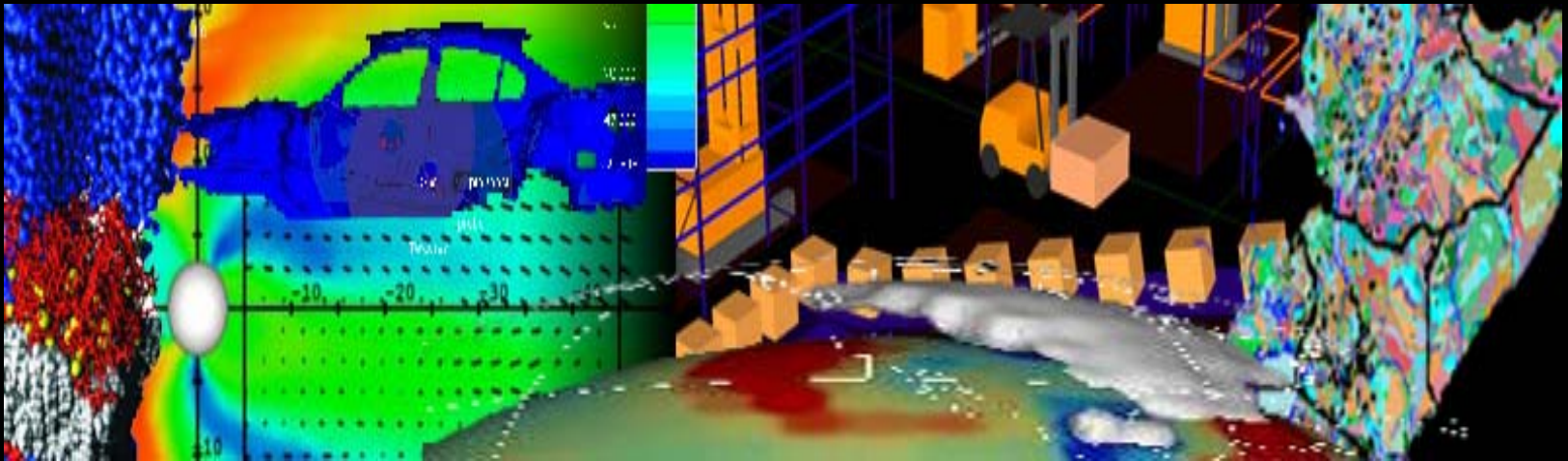


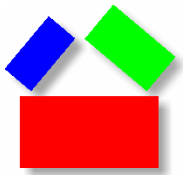
DATA CENTER

DATA CENTER

Make sense of your data

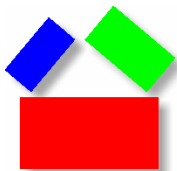


David Brock, Founder and Director
Data Center
Massachusetts Institute of Technology



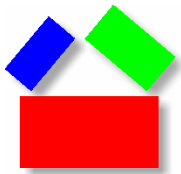
DATA





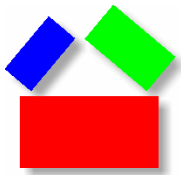
STANDARDS

4ML	ARML	BiblioML	CIDX	eBIS-XML	HTTP-DRP	MatML	ODRL	PrintTalk	SHOE	UML	XML F
5AML	ARML	BCXML	xCIL	ECML	HumanML	MathML	OeBPS	ProductionML	SIF	UBL	XML Key
6AML	ASML	BEEP	CLT	eCo	HyTime	MBAM	OFX	PSL	SMML	UCLP	XMLife
7AML	ASML	BGML	CNRP	EcoKnow	IML	MISML	OIL	PSI	SMBXML	UDDI	XML MP
8AML	ASTM	BHTML	ComicsML	edaXML	ICML	MCF	OIM	QML	SMDL	UDEF	XML News
9AML	ATML	BIBLIOML	Covad xLink	EMSA	IDE	MDDL	OLife	QAML	SDML	UIML	XML RPC
0AML	ATML	BIOML	CPL	eosML	IDML	MDSI-XML	OML	QuickData	SMIL	ULF	XML Schema
1ABML	ATML	BIPS	CP eXchange	ESML	IDWG	Metarule	ONIX DTD	RBAC	SOAP	UMLS	XML Sign
2ABML	ATML	BizCodes	CSS	ETD-ML	IEEE DTD	MFDX	OOPML	RDDI	SODL	UPnP	XML Query
3ACML	AWML	BLM XML	CVML	FieldML	IFX	MIX	OPML	RDF	SOX	URI/URL	XML P7C
4ACML	AXML	BPML	CWMI	FINML	IMPP	MMLL	OpenMath	RDL	SPML	UXF	XML TP
5ACAP	AXML	BRML	CycML	FITS	IMS Global	MML	Office XML	RecipeML	SpeechML	VML	XMLVoc
6ACS X12	AXML	BSML	DML	FIXML	InTML	MML	OPML	RELAX	SSML	vCalendar	XML XCI
7ADML	AXML	CML	DAML	FLBC	IOTP	MML	OPX	RELAX NG	STML	vCard	XAML
8AECM	BML	xCML	DaliML	FLOWML	IRML	MoDL	OSD	REXML	STEP	VCML	XACML
9AFML	BML	CaXML	DaqXML	FPML	IXML	MOS	OTA	REPML	STEPML	VHG	XBL
0AGML	BML	CaseXML	DAS	FSML	IXRetail	MPML	PML	ResumeXML	SVG	VIML	XSBEL
1AHML	BML	xCBL	DASL	GML	JabberXML	MPXML	PML	RETML	SWAP	VISA XML	XBN
2AIML	BML	CBML	DCMI	GML	JDF	MRML	PML	RFML	SWMS	VMML	XBRL
3AIML	BML	CDA	DOI	GML	JDox	MSAML	PML	RightsLang	SyncML	VocML	XCFF
4AIF	BannerML	CDF	DeltaV	GXML	JECMM	MTML	PML	RIXML	TML	VoiceXML	XCES
5AL3	BCXML	CDISC	DIG35	GAME	JLife	MTML	PML	RoadmOPS	TML	VRML	Xchart
6ANML	BEEP	CELLML	DLML	GBXML	JSML	MusicXML	PML	RosettaNet PIP	TML	WAP	Xdelta
7ANNOTE	ABGML	ChessGML	DMML	GDML	JSML	NAML	PML	RSS	TalkML	WDDX	XDF
8ANATML	BHTML	ChordML	DocBook	GEML	JScoreML	xNAL	P3P	RuleML	TaxML	WebML	XForms
9APML	BIBLIOML	ChordQL	DocScope	GEDML	KBML	NAA Ads	PDML	SML	TDL	WebDAV	XGF
0APPML	BIOML	CIM	DoD XML	GEN	LACITO	Navy DTD	PDX	SML	TDML	WellML	XGL
1AQL	BIPS	CIML	DPRL	GeoLang	LandXML	NewsML	PEF XML	SML	TEI	WeldingXML	MGML
2APPEL	BizCodes	CIDS	DRI	GIML	LEDES	NML	PetroML	SML	ThML	Wf-XML	XHTML
3ARML	BLM XML	CIDX	DSML	GXD	LegalXML	NISO DTB	PGML	SAML	TIM	WIDL	XIOP
4ARML	BPML	xCIL	DSD	GXL	Life Data	NITF	PhysicsML	SABLE	TIM	WITSML	XLF
5ASML	BRML	CLT	DXS	Hy XM	LitML	NLMXML	PICS	SAE J2008	TMML	WorldOS	XLIFF
6ASML	BSML	CNRP	EML	HITIS	LMML	NVML	PMML	SBML	TMX	WSML	XLink
7ASTM	BCXML	ComicsML	EML	HR-XML	LogML	OAGIS	PNML	Schemtron	TP	WSIA	XMI
8ARML	BEEP	CIM	DLML	HRMML	LogML	OBI	PNML	SDML	TPAML	XML	XMSG
9ARML	BGML	CIML	EAD	HTML	LTSC XML	OCF	PNG	SearchDM-XML	TREX	XML Court	XMTMP
0ASML	BHTML	CIDS	ebXML	HTTPL	MAML	ODF	PrintML	SGML	TxLife	XML EDI	XNS



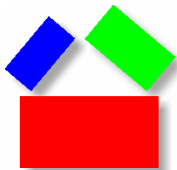
DATA SCHEMA



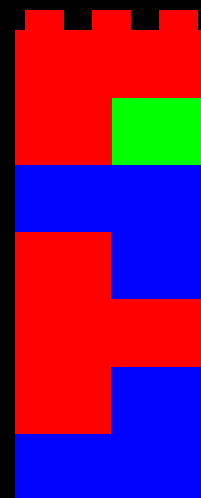
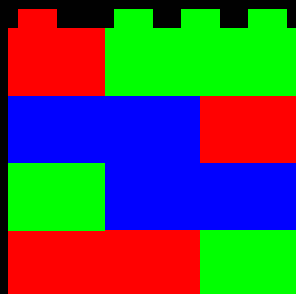
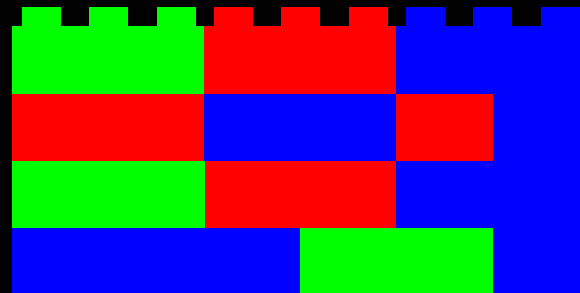
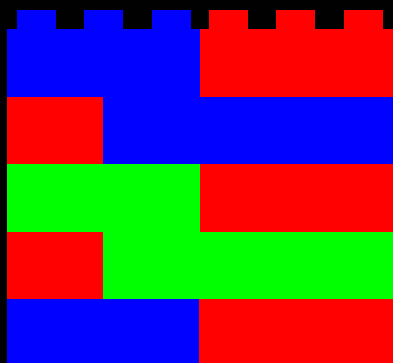


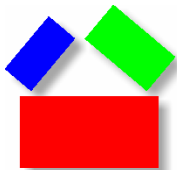
DATA

Data

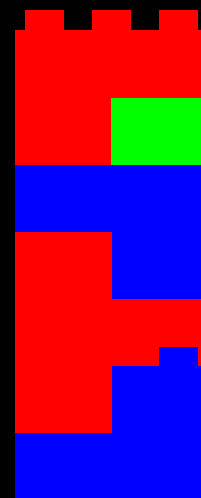
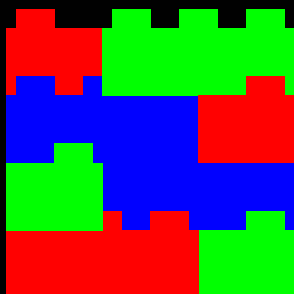
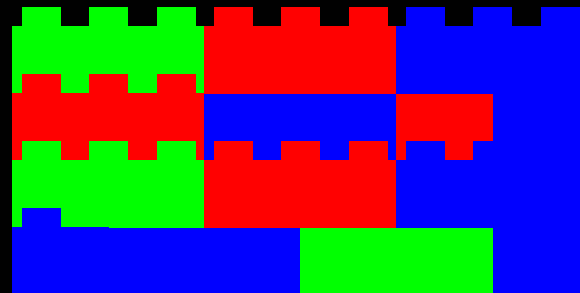
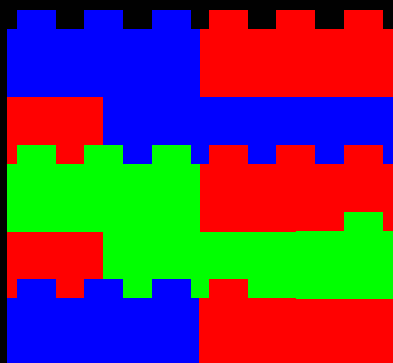


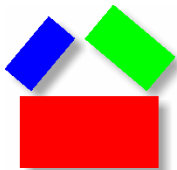
INTEROPERABLE DATA



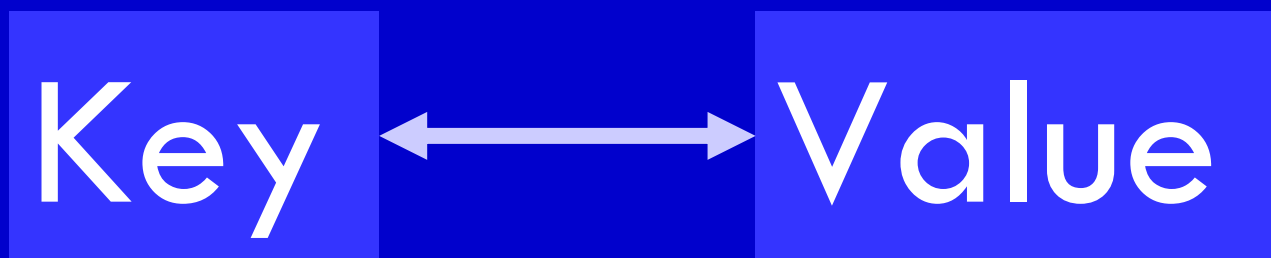


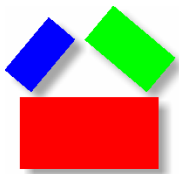
INTEROPERABLE DATA





DATA ATOM





DATA ATOM

KEY

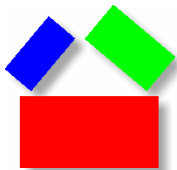
call.5 *n.* – a telephone connection

电话 , telefoongesprek , 전화

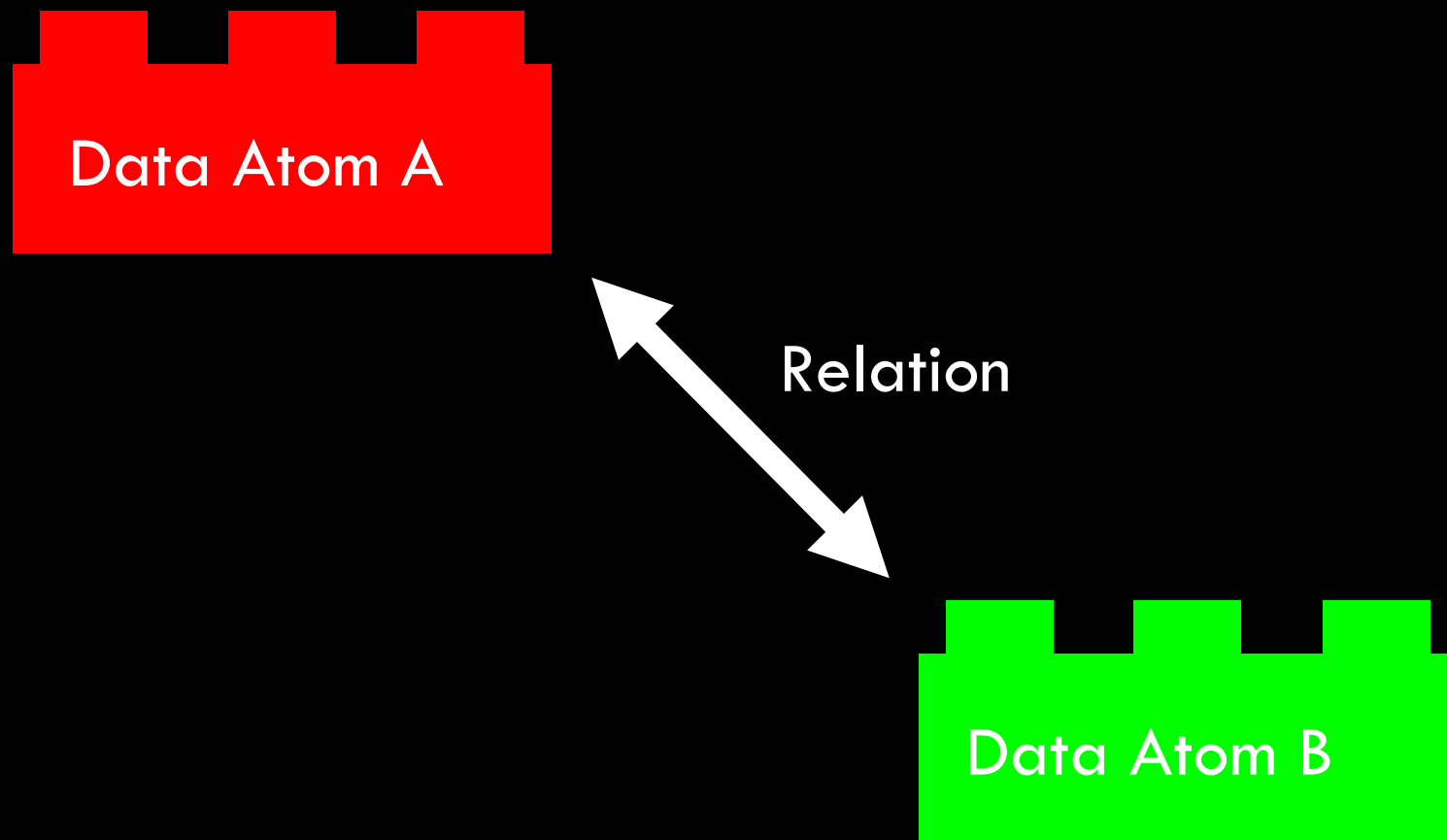
DATA

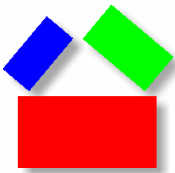
Type: string

Pattern: `^[+][0-9]\d{2}-\d{3}-\d{4}$`



DATA ATOM RELATIONS





DICTIONARY

M Dictionary - Mozilla Firefox
File Edit View Go Bookmarks Tools Help
http://localhost/development/dictionary003/edit_form.php?word=petroleum.1

My Web Directory News Initiatives Learning Products Projects Reference Recreation Misc

THE DATA CENTER
Making sense of your data
Dictionary Management Software Version 0.03

db - admin (editor) / logout

Search Advanced Search Preferences

petroleum.1

discuss history

Edit entry for word petroleum.1.

Definition

Word: **petroleum.1**
Root: **petroleum**
Authority:
View:
Function:
Definition:
Examples:

Information

Wikipedia:
Information: [Edit](#)

Relations

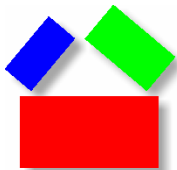
Synonyms:
Antonyms:
Type of:
Part of:

Attributes

Attributes:

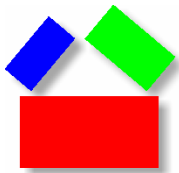
Data

http://localhost/development/dictionary003/index.php



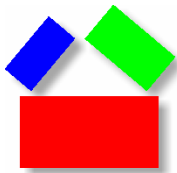
RULES

- Rules describe how the data atoms are put together



RULES

1. **Phrases** – root words plus modifiers
2. **Key-value pairs** – tax forms, medical records, receipts, etc.
3. **Tables** – enumerations, tables, spreadsheets



PHRASES

AuthorizedPricingInformation

authorized.1_pricing.1_information.1

CurrentAccountBalance

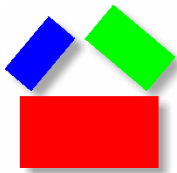
current.1_account.2_balance.6

UnitPrice

unit.1_price.2

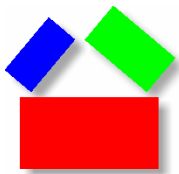
PaymentMethod

payment.2_method.2



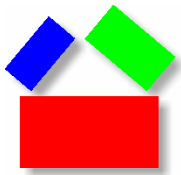
KEY-VALUE PAIRS

```
<customer.1_receipt.1>  
  <merchant.1>Core Communications</merchant.1>  
  <date.2>14-Sep-2005 09:25:35 PM</date.2>  
  <invoice.2_number>47189</invoice.2_number.1>  
  <amount.4>$9.95</amount.4>  
  <first_name.1>John</first_name.1>  
  <last_name.1>Smith</last_name.1>  
  <phone.1>978-224-9981</phone.1>  
</customer.1_receipt.1>
```



TABLES

```
<table>  
  <tag1>data</tag1>  
  . . .  
  <heading>data</heading>  
  . . .  
  <row>  
    <column>data</column>  
    . . .  
  </row>  
</table>
```

M

M

A Language