TableEdit

A Mediawiki Extension

some background

- wiki's are innately free-form
- biological data is innately tabular
- how do you incorporate the two?
  - you sneak structure into the mix…

overall goals

- make it easy for (all) users to edit tables / tabular data
- lower the unit of submission
- make it easy to mine data / text from the wiki
- contribute to the Mediawiki community

EcoliWiki

example

pcnB:Gene Product(s)

Quickview | Gene | **Gene Product(s)** | Expression | Evolution | On One Page

Nomenclature | Function | Interactions | Localization | Sequence | Domains | Structure | Resources | Accessions

Nomenclature

Standard name	PcnB
Synonyms	poly(A) polymerase I[1], B0143[2][1], PcnB[2][1], PAP I[2][1]
Product description	poly(A) polymerase I[2][3]
EC number (for enzymes)	▪ 2.7.7.19[1]
edit table	

See Help:Product_nomenclature for help entering or editing information in this section of EcoliWiki.

EcoliWiki

example

pcnB:Gene Product(s)

TableEdit Help

Standard name	PcnB
Synonyms	poly(A) polymerase I[1], B0143[2][1], PcnB[2][1], PAP I[2][1]
Product description	poly(A) polymerase I[2][3]
EC number (for enzymes)	▪ 2.7.7.19[1]
	Edit Copy Delete public

Add column | Add multiple

Table style

(e.g align='right')

Heading style

{{table heading style}} Save styles

(e.g. 'bgcolor = #ccccff' to make the heading background light blue)

Save Table to wiki page: pcnB:Gene_Product(s) Cancel

Delete Table

Extra for admins: View/Edit metadata | View box data

EcoliWiki

example

Standard name	PcnB
Synonyms	poly(A) polymerase I<ref name='LIB:Riley_2006'/>, B0143<ref name='LIB:EcoCyc10.6'/><ref name='LIB:Riley_2006'/>, PcnB<ref name='LIB:EcoCyc10.6'/><ref
Product description	poly(A) polymerase I<ref name='LIB:EcoCyc10.6'/><ref name='LIB:EcoCyc11.1'/>
EC number (for enzymes)	* [http://www.brenda-enzymes.info/php/result_flat.php4?ecno=2.7.7.19 2.7.7.19]<ref name='LIB:Riley_2006'/>
Public Update Save Cancel	

EcoliWiki

example

Standard name	PcnB
Synonyms	poly(A) polymerase I<ref name='LIB:Riley_2006'/>, B0143<ref name='LIB:EcoCyc10.6'/><ref name='LIB:Riley_2006'/>, PcnB<ref name='LIB:EcoCyc10.6'/><ref
Product description	poly(A) polymerase I<ref name='LIB:EcoCyc10.6'/><ref name='LIB:EcoCyc11.1'/>
EC number (for enzymes)	* [http://www.chem.qmul.ac.uk/iubmb/enzyme/EC2/7/7/19.html EC 2.7.7.19]

Public | Update | Save | Cancel

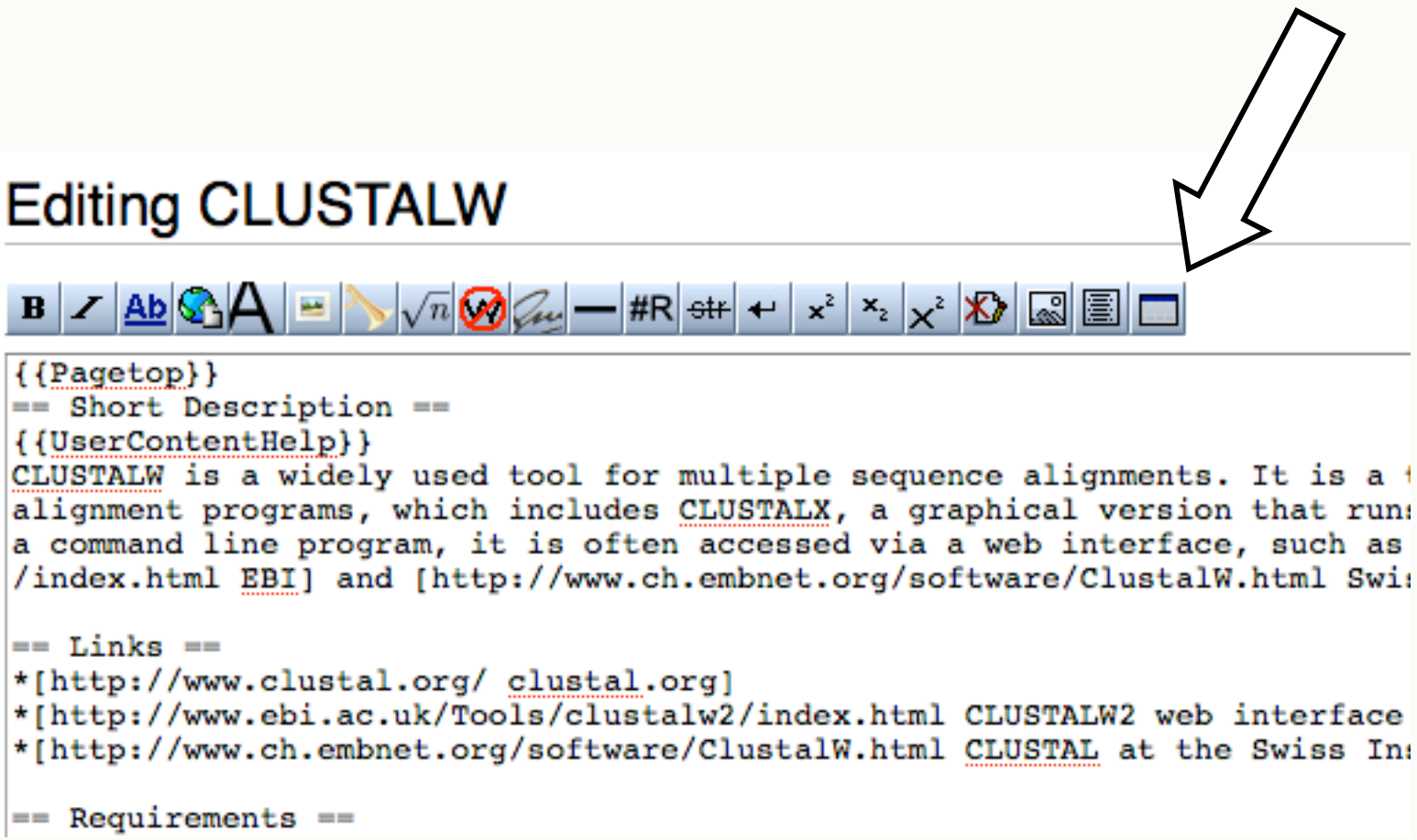
EcoliWiki

example

Standard name	PcnB
Synonyms	poly(A) polymerase I[1], B0143[2][1], PcnB[2][1], PAP I[2][1]
Product description	poly(A) polymerase I[2][3]
EC number (for enzymes)	▪ EC 2.7.7.19
edit table	

EcoliWiki

creating tables

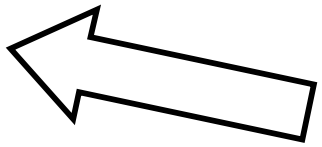


EcoliWiki

creating tables

Editing CLUSTALW

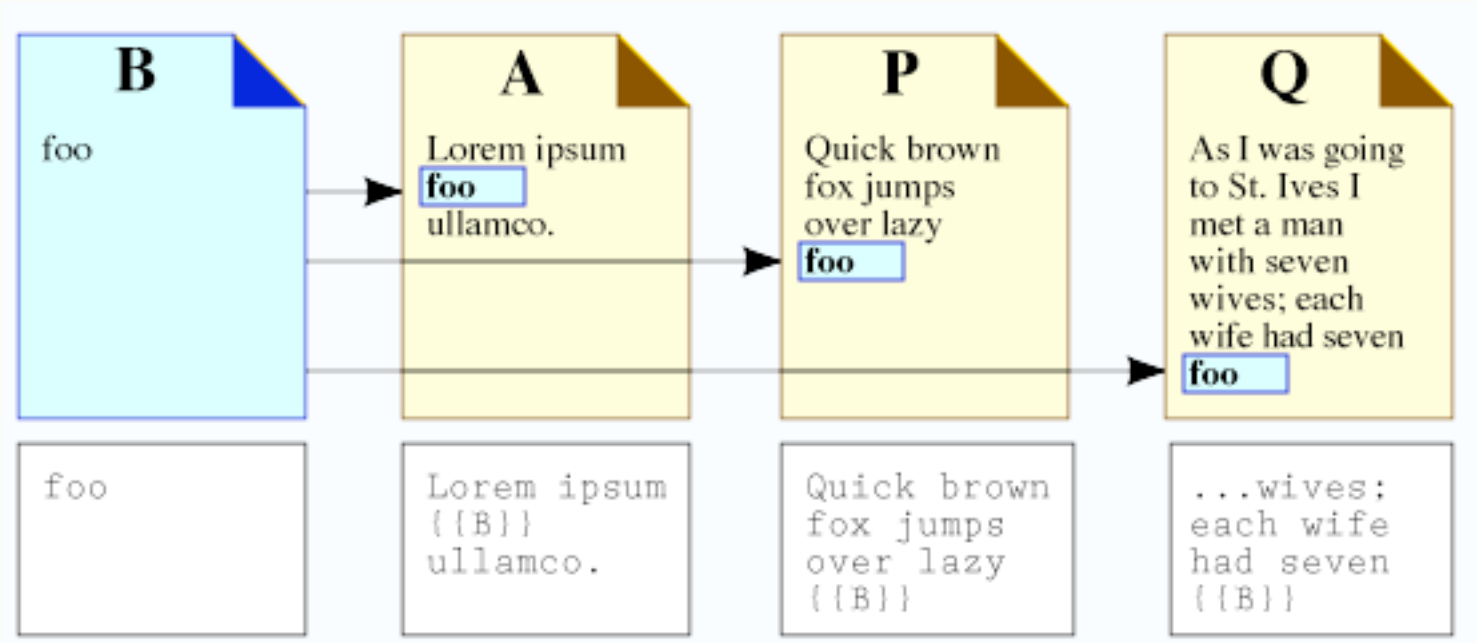
```
{{Pagetop}}
== Short Description ==
{{UserContentHelp}}
CLUSTALW is a widely used tool for multiple sequence alignments. It is
alignment programs, which includes CLUSTALX, a graphical version that
a command line program, it is often accessed via a web interface, such
/index.html EBI] and [http://www.ch.embnet.org/software/ClustalW.html

<newTableEdit>
Replace these lines
with Headings and Save
to see a table
</newTableEdit>


== Links ==
*[http://www.clustal.org/ clustal.org]
```



EcoliWiki

creating tables

- template based system
  - transclusion allows for abstraction



EcoliWiki

creating (templated) tables

Editing Template:Gene nomenclature table

```
<headings>
Standard name
Mnemonic
Synonyms
</headings>
<heading_style>{{table_heading_style}}</heading_style>
<type>1</type>

[[Category:Table templates|Gene nomenclature table]]
```

<newTableEdit>

Template:Gene_Nomenclature_table

</newTableEdit>

Standard name
Mnemonic
Synonyms
edit table

EcoliWiki

creating (templated) tables

table properties

- <headings>
- <heading_style>
- <type>
- <box_style>
- <style>
- <help[1-4]>
- <above>
- <below>

column rules

- select
- checkbox
- text
- lookup
- calc
- lookupcalc
- timestamp
- foreign

column rules

```
<headings>
Qualifier||qualifier|select| |NOT|Contributes to|Colocalizes with|Obsolete …
GO ID||go_id|text
GO term name||go_term|lookupcalc|SELECT page_title FROM GO_archive.term WHERE go_id =
    '{{{go_id}}}' ORDER BY term_update DESC LIMIT 1|page_title|split|_!_|1
Reference(s)||refs
Evidence Code||evidence|select| |IC: Inferred by Curator|IDA: Inferred from Direct
    Assay|IEA: Inferred from Electronic Annotation|IEP: Inferred from Expression|IGC:
    Inferred from Genomic Context|IGI: Inferred from Genetic Interaction|IMP:
    Inferred from Mutant Phenotype|IPI: Inferred from Physical Interaction|ISS:
    Inferred from Sequence or Structural Similarity …
with/from||with|text
Aspect||aspect|lookup|SELECT namespace from GO_archive.term WHERE go_id =
    '{{{go_id}}}' ORDER BY term_update DESC LIMIT 1|namespace
Notes||Notes
Status||status|calc|reqcomplete|go_id|refs|go_term|evidence
</headings>
<heading_style>{{table_heading_style}}</heading_style>
[[Category:Table templates|GO table product]]
```

EcoliWiki

the cool stuff

- really big tables
- conflict detector - keeps things correct
- help links - 100% user editable
- the loader - for mass imports / edits
- documentation / specs - always good
- modules - extensions of extensions
- " foreign tables " & mirroring

applications

Group	Organism	gene	Qualifier	GO ID	GO term name	Reference(s)	Evidence Code				tus
WormBase	C.elegans	PFKL = C50F4.2 = WBGene0008230		GO:0040018	positive regulation of multicellular organism growth	PMID:11231151[1]	IMP: Inferred from Mutant Phenotype				nplete
FlyBase	Drosophila	FBgn0003071		GO:0003872	6-phosphofructokinase activity	PMID:7929140[2]	IMP: Inferred from Mutant Phenotype				nplete
FlyBase	Drosophila	FBgn0003071		GO:0005945	6-phosphofructokinase complex	PMID:7929140[2]	IC: Inferred by Curator	GO:0003872	C		complete
FlyBase	Drosophila	FBgn0003071		GO:0006096	glycolysis	PMID:7929140[2]	IC: Inferred by Curator	GO:0003872	P		complete
DictyBase	Dicty	DDB_G0274111		GO:0003872	6-phosphofructokinase activity	PMID:4300706[3] PMID:7813455[4]	IDA: Inferred from Direct Assay		F	purified enzyme	complete
DictyBase	Dicty	DDB_G0274111		GO:0003872	6-phosphofructokinase activity	PMID:7589492[5]	IGI: Inferred from Genetic Interaction	S000003472|S000004818	F	the Dicty recombinant protein expressed in the yeast mutant; yeast has 2 subunits, while Dicty has only one	complete
DictyBase	Dicty	DDB_G0274111		GO:0015631	tubulin binding	PMID:10026266[6]	IPI: Inferred from Physical Interaction	P81948	F		complete

12 x >67

EcoliWiki

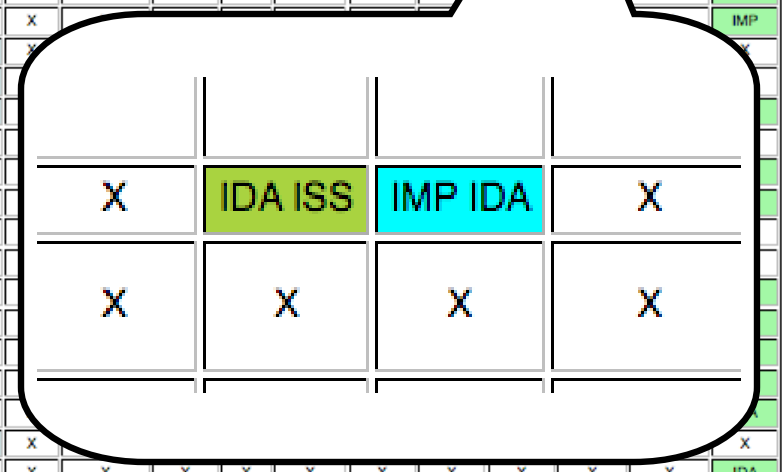
applications

Category	ID	Term	Human	Mouse	Rat	Chicken	Zfish	Fly	Worm	Dicty	Dicot	Dicot	Yeast	Pombe	Ecoli
Biological Process	GO:0040018	positive regulation of multicellular organism growth	X	X	X	X	X	X	IMP	X	X	X	X	X	X
Biological Process	GO:0006096	glycolysis	IDA	IDA	X	X	X	IC	X	X	X	IDA ISS	IMP IDA	X	IDA
Biological Process	GO:0006002	fructose 6-phosphate metabolic process	IDA IMP	X	X	X	X	IMP	X	IDA	X	X	X	X	X
Biological Process	GO:0031115	negative regulation of microtubule polymerization	X	X	X	X	X	X	X	IDA	X	X	X	X	X
Biological Process	GO:0006007	glucose catabolic process	X	X	X	X	X	X	X	IGI	X	X	X	X	IMP
Biological Process	GO:0009792	embryonic development ending in birth or egg hatching	X	X	X	X	X	X	IMP	X	X	X	X	X	X
Biological Process	GO:0000003	reproduction	X	X	X	X	X	X	IMP	X	X	X	X	X	X
Biological Process	GO:0044275	cellular carbohydrate catabolic process	X	X	X	X	X	X	X	X	X	X	X	X	IMP
Biological Process	GO:0016052	carbohydrate catabolic process	X	X	X	X	X	X	X	X	X	X	X	X	IMP
Biological Process	GO:0046676	negative regulation of insulin secretion	X	IDA	X	X	X	X	X	X	X	X	X	X	X
Biological Process	GO:0009749	response to glucose stimulus	X	IDA	X	X	X	X	X	X	X	X	X	X	X
Molecular Function	GO:0003872	6-phosphofructokinase activity	IDA IMP	IDA	X	X	X	IMP	X	IDA IGI	X	IDA ISS	IMP	X	IMP
Molecular Function	GO:0015631	tubulin binding	X	X	X	X	X	X	X	IPI	X	X	X	X	X
Molecular Function	GO:0005524	ATP binding	IDA	X	X	X	X	X	X	X	X	X	X	X	IMP
Molecular Function	GO:0042802	identical protein binding	IPI	X	X	X	X	X	X	X	X	X	X	X	IDA
Molecular Function	GO:0005515	protein binding	IPI	X	X	X	X	X	X	X	X	X	X	X	X
Molecular Function	GO:0070061	fructose binding	IDA IC	X	X	X	X	X	X	X	X	X	X	X	X
Molecular Function	GO:0005488	binding	X	X	X	X	X	X	X	X	X	X	X	X	IDA
Molecular Function	GO:0000287	magnesium ion binding	X	X	X	X	X	X	X	X	X	X	X	X	IDA
Molecular Function	GO:0032553	ribonucleotide binding	X	X	X	X	X	X	X	X	X	X	X	X	IDA
Molecular Function	GO:0043531	ADP binding	X	X	X	X	X	X	X	X	X	X	X	X	IDA
Cellular Component	GO:0005945	6-phosphofructokinase complex	IDA	X	X	X	X	IC	X	IDA	X	X	IMP	X	IDA
Cellular Component	GO:0005829	cytosol	IDA	IDA	X	X	X	X	X	IDA	X	IDA	X	X	X
Cellular Component	GO:0005737	cytoplasm	X	X	X	X	X	X	X	X	X	X	X	X	IDA
Cellular Component	GO:0005886	plasma membrane	X	X	X	X	X	X	X	X	X	IDA	X	X	X
Cellular Component	GO:0009507	chloroplast	X	X	X	X	X	X	X	X	X	IDA	X	X	X

EcoliWiki

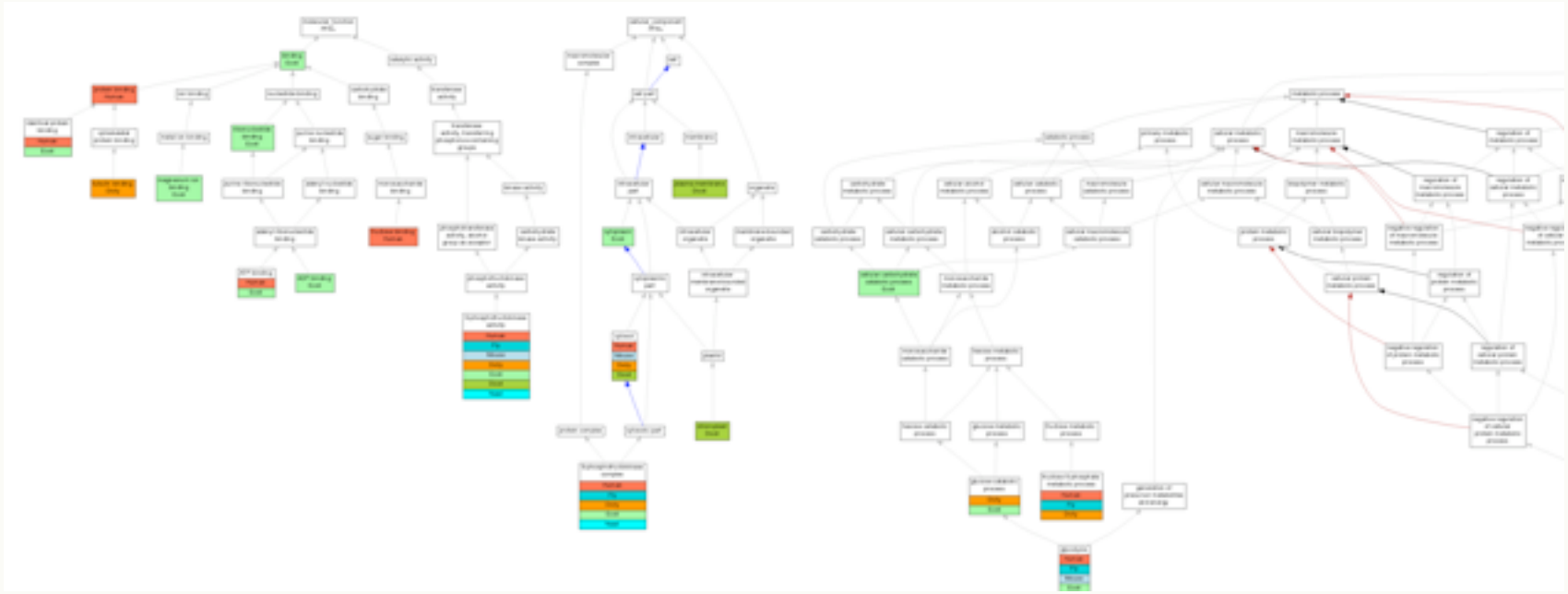
applications

Category	ID	Term	Human	Mouse	Rat	Chicken	Zfish	Fly	Worm	Dicty	Dicot	Dicot	Yeast	Pombe	Ecoli
Biological Process	GO:0040018	positive regulation of multicellular organism growth	X	X	X	X	X	X	IMP	X	X	X	X	X	X
Biological Process	GO:0006096	glycolysis	IDA	IDA	X	X	X	IC	X	X	X	IDA ISS	IMP IDA	X	IDA
Biological Process	GO:0006002	fructose 6-phosphate metabolic process	IDA IMP	X	X	X	X	IMP	X	IDA	X	X	X	X	X
Biological Process	GO:0031115	negative regulation of microtubule polymerization	X	X	X	X	X	X	X	IDA	X	X	X	X	X
Biological Process	GO:0006007	glucose catabolic process	X	X	X	X	X	X	X	IGI	X			X	IMP
Biological Process	GO:0009792	embryonic development ending in birth or egg hatching	X	X	X	X	X	X	IMP	X	X			X	X
Biological Process	GO:0000003	reproduction	X	X	X	X	X	X	IMP	X	X			X	X
Biological Process	GO:0044275	cellular carbohydrate catabolic process	X	X	X	X	X	X	X	X	X			X	IMP
Biological Process	GO:0016052	carbohydrate catabolic process	X	X	X										IMP
Biological Process	GO:0046676	negative regulation of insulin secretion	X	IDA	X										
Biological Process	GO:0009749	response to glucose stimulus	X	IDA											
Molecular Function	GO:0003872	6-phosphofructokinase activity	IDA IMP	IDA											
Molecular Function	GO:0015631	tubulin binding	X	X											
Molecular Function	GO:0005524	ATP binding	IDA	X											
Molecular Function	GO:0042802	identical protein binding	IPI	X											
Molecular Function	GO:0005515	protein binding	IPI	X											
Molecular Function	GO:0070061	fructose binding	IDA IC	X											
Molecular Function	GO:0005488	binding	X	X											
Molecular Function	GO:0000287	magnesium ion binding	X	X											
Molecular Function	GO:0032553	ribonucleotide binding	X	X											
Molecular Function	GO:0043531	ADP binding	X	X											
Cellular Component	GO:0005945	6-phosphofructokinase complex	IDA	X											
Cellular Component	GO:0005829	cytosol	IDA	IDA	X										X
Cellular Component	GO:0005737	cytoplasm	X	X	X	X	X	X	X	X	X	X	X	X	IDA
Cellular Component	GO:0005886	plasma membrane	X	X	X	X	X	X	X	X	X	IDA	X	X	X
Cellular Component	GO:0009507	chloroplast	X	X	X	X	X	X	X	X	X	IDA	X	X	X



EcoliWiki

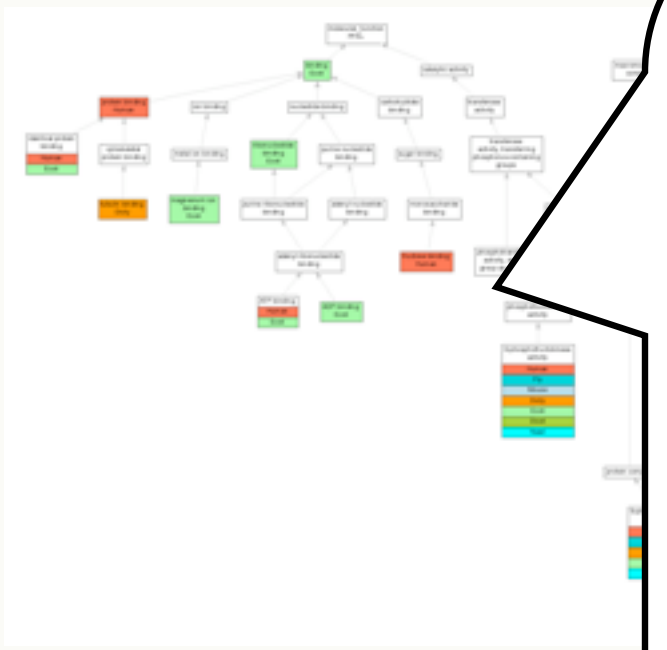
applications

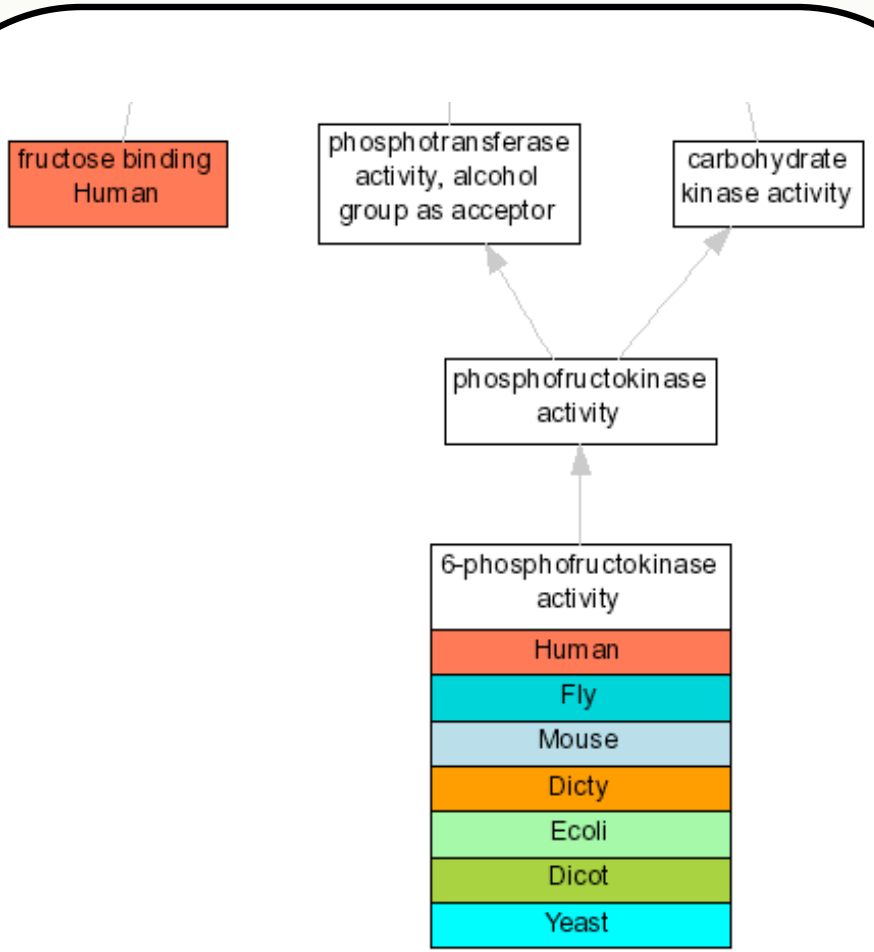


thanks to Mary Dolan @ MGI

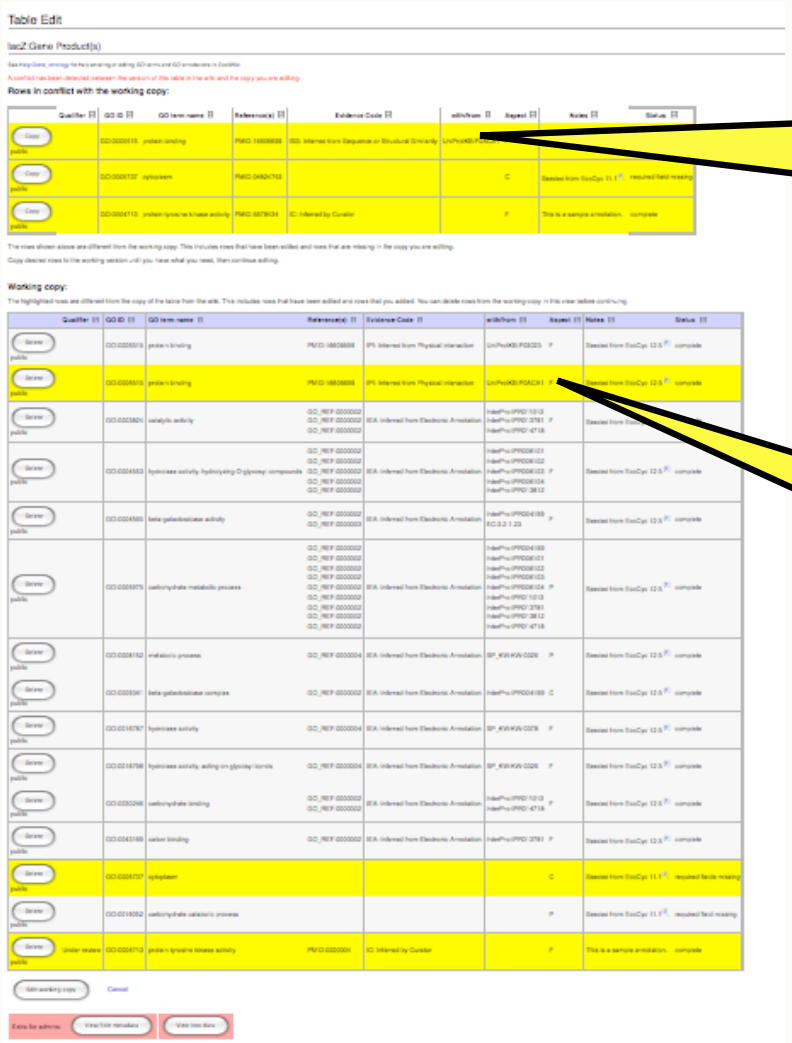
EcoliWiki

applications





conflict detector



ISS: Inferred from Sequence or Structural Similarity

IPI: Inferred from Physical Interaction

EcoliWiki

help links

EcoliWiki

the loader

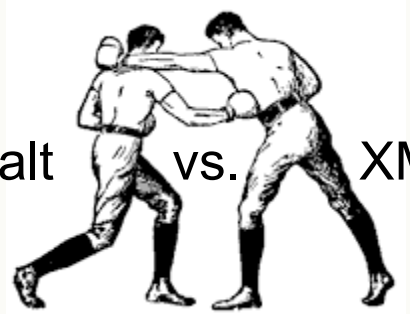
```
// Instantiate the object
    $loader = new TableEdit_Loader;
// set some options
    $loader->setVerbose();
    $loader->setUser();
    $loader->printInfo();
// load pretty much anything into tables from either an *.ifalt file.
    $loader->loadFromFile(array_pop($argv));
```

ifalt

1.	page title	lacZ:Gene
2.	page template	Gene
3.	table template	Gene_nomenclature
4.	row data	field1 || field2 || field3
5.	metadata	metadata-for-the-row
6.	update type	append
7.	misc	key=value&arr[]=foo+bar

ifalt

1.	page title	lacZ:Gene
2.	page template	Gene
3.	table template	Gene_nomenclature
4.	row data	field1 || field2 || field3
5.	metadata	metadata-for-the-row
6.	update type	append
7.	misc	key=value&arr[]=foo+bar



EcoliWiki

merging

- $A = B$

  rows are exactly the same

```
old = a | b | c | d | e
new = a | b | c | d | e
```

- $A \subseteq B$

  A is a subset of B

```
old = a | b |   |   | e
new = a | b | c | d | e
```

- $A \cap B \neq \emptyset$

  mutually exclusive

```
new = a | b | c | d | e
old = z | y | w | v | u
```

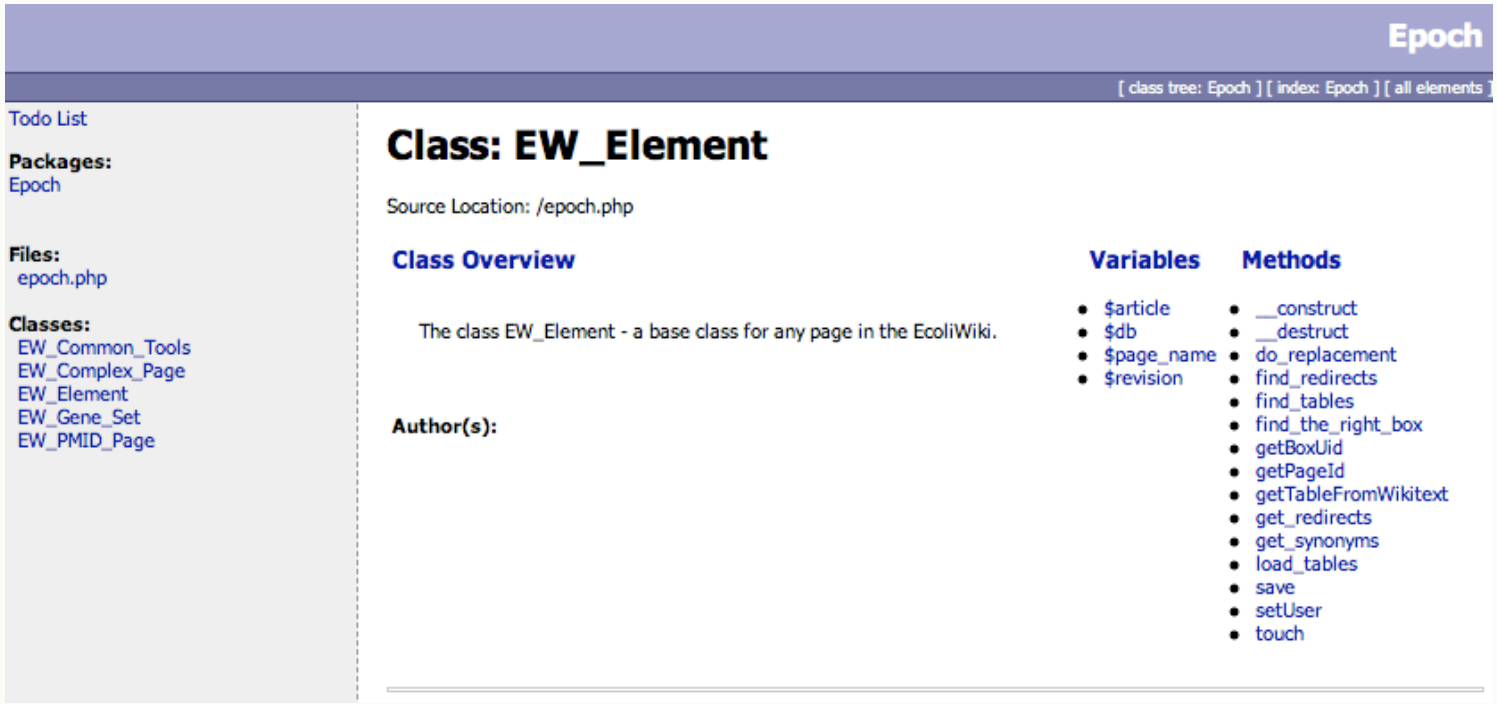
- $A \cap B = \emptyset$

  disjoint

```
new = a | b |   | k | e
old = a | g | h |   | e
```

docs

- PHPdoc (like Javadoc)



Epoch

[class tree: Epoch] [index: Epoch] [all elements]

Todo List

Packages:
Epoch

Files:
epoch.php

Classes:
EW_Common_Tools
EW_Complex_Page
EW_Element
EW_Gene_Set
EW_PMID_Page

Class: EW_Element

Source Location: /epoch.php

Class Overview

The class EW_Element - a base class for any page in the EcoliWiki.

Author(s):

Variables

- $article
- $db
- $page_name
- $revision

Methods

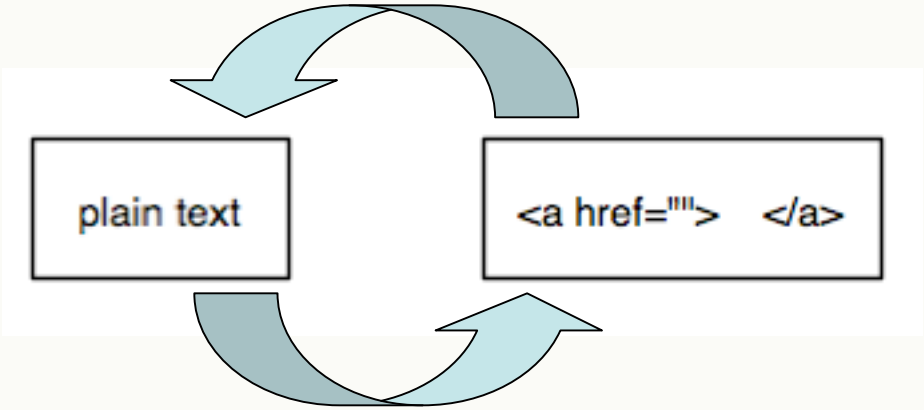
- __construct
- __destruct
- do_replacement
- find_redirects
- find_tables
- find_the_right_box
- getBoxUid
- getPageId
- getTableFromWikitext
- get_redirects
- get_synonyms
- load_tables
- save
- setUser
- touch

- wiki pages as HTML / PDFs

[[ ]] EcoliWiki

modules

- TableEdit_links

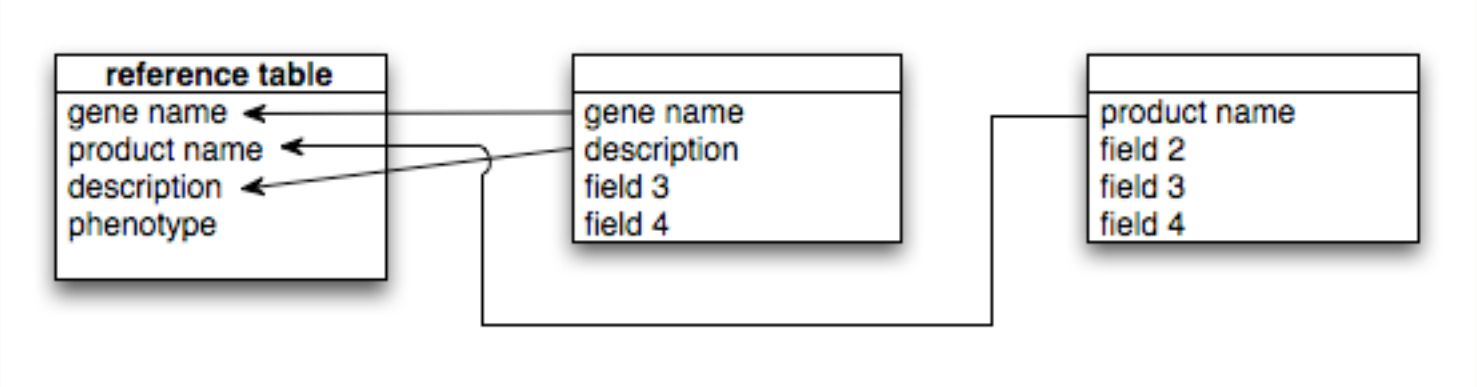


- MirrorAnnotations

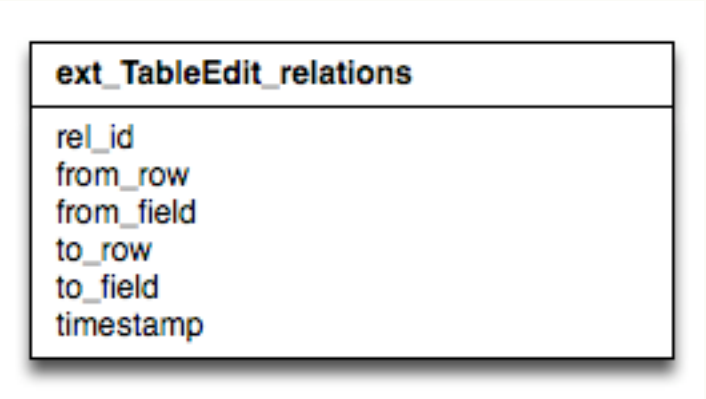
EcoliWiki

foreign tables

- how to mirror data from one table to another?

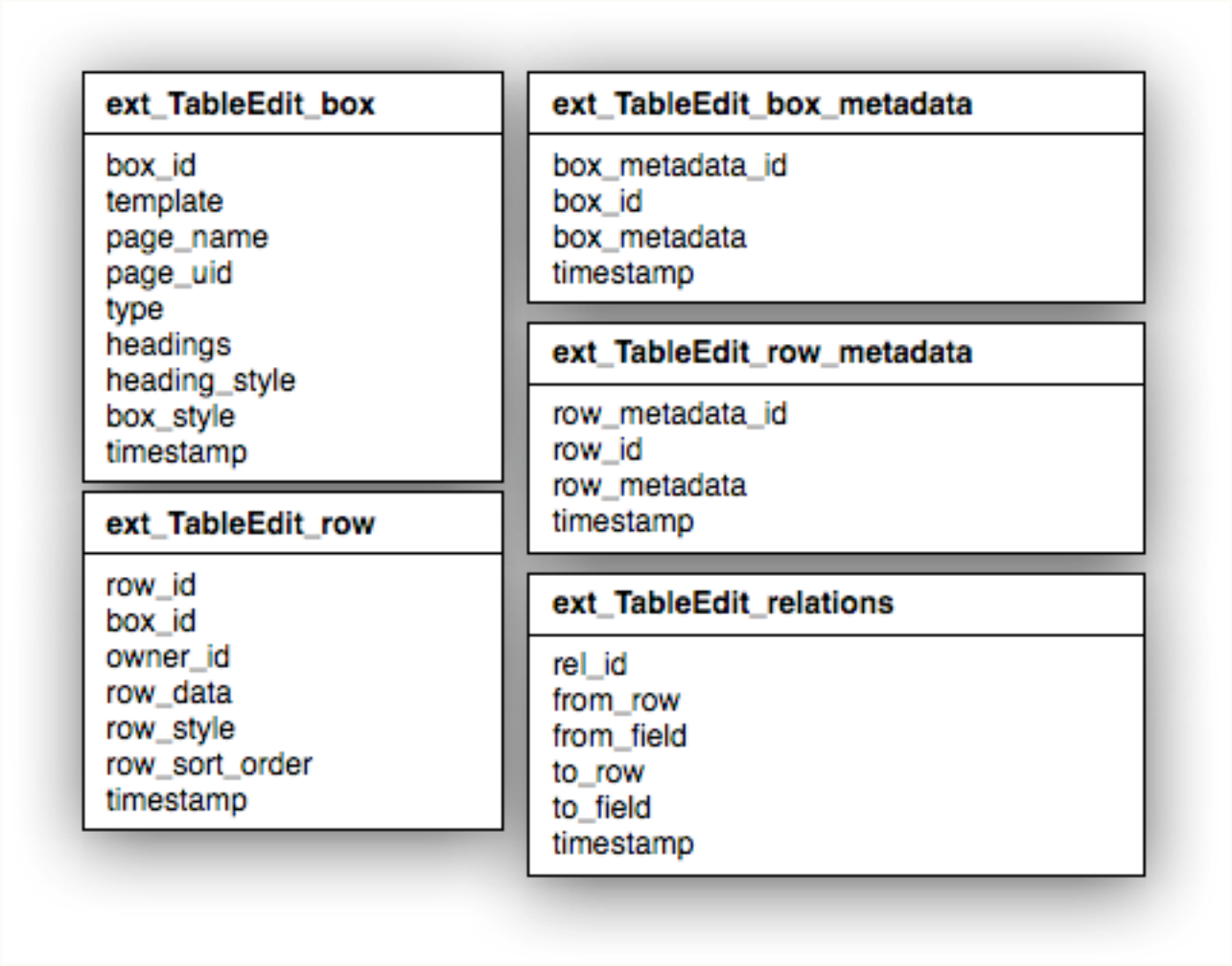


- keeping data fresh… relations table



EcoliWiki

database layout



EcoliWiki

v2.0

- AJAX
- constrain searching tables / subset of tables
- better object/relational mapping
- Chado roundtrip
- constructive user feedback…

get it

- http://www.mediawiki.org/wiki/Extension:TableEdit

- http://ecoliwiki.[net|org|com]
- http://gowiki.tamu.edu
  - username: `demo`
  - Password: `pag`

thanks

- Jim Hu
- Brenley McIntosh
- the rest of the Hu Lab

- EcoliHub(.org) & NIH

- GMOD guys

- Mediawiki Developers Mailing List
- O'Reilly

demo

pcnB on dev

EcoliWiki