Best of both worlds : combining the user-friendliness of Wikis and the rigor of biological databases

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Code URL : http://www.esat.kuleuven.be/~bioiuser/chdwiki/inout.tar.gz
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Wiki technology does not need to be introduced anymore. Indeed over these last few years, the number of wiki-based websites exploded, ranging from very general (e.g. the well known Wikipedia, Wiktionnary) to more specialized (WikiProteins (Mons *et al*, 2008), Wikipedia for genes (Huss *et al*, 2008), etc). Besides the main advantages of wikis (nice presentation, easy editing, large web community, etc), their main drawback is that knowledge contained in the wiki is represented as free text hosted in a unique underlying database. This is in total opposition to the current practice for biological databases where the available data come from well structured repositories. Indeed, a lot of web accessible biological databases mainly consist of a set of entries extracted from tables.

We present, *inout*, an extension to the MediaWiki PHP web software run by the majority of wiki websites and supported by a wide and very active community of developers and users. This extension allows the use of any other data source (structured or not), that is different from the main database, to populate the pages of the wiki. The advantages of this extension are numerous : e.g. the database user is confronted with an intuitive environment he is familiar with and as we keep the ergonomics of the wiki, it remains very easy for him to edit and to contribute to the database. As we also implemented a mean to include forms in the wiki itself, it offers one the possibility to edit in a very user-friendly manner the data present in the external databases on which the wiki may rely using *inout*. Moreover, as the user rights management is implemented in the MediaWiki software, the modifications can be made by some registered experts of the wiki application field.

Furthermore, our extension allows one to automatically include data on predefined pages. The data can be free wiki text as well as data obtained from external databases or webservices. Thus, if a page has not yet been manually created by the wiki contributors, external data may already fill it. Of course, the manual completion of pages is still possible afterwards.

Finally, via this extension, any web tool, like those found in classical biological databases (BLAST search, network analysis, gene prioritization, etc.) can also easily be integrated into the wiki.

Our extension has already been successfully deployed for two very different biological domains : a database dedicated to the study of congenital heart defects (CHDWiki : http://homes.esat.kuleuven.be/~bioiuser/chdwiki/) and a database devoted to the precise classification and annotation of yeast permeases (YTPdb : http://homes.esat.kuleuven.be/~sbrohee/ytpdb).