PhenoWiki+: PhenoMining Based Wiki for Consortium for Neuropsychiatric Phenomics(CNP)

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Overview

- Introduction
- PhenoMining Tools
- Annotation Facility
- Personal WorkSpace
- User Feedback
- Conclusion
- Acknowledgements
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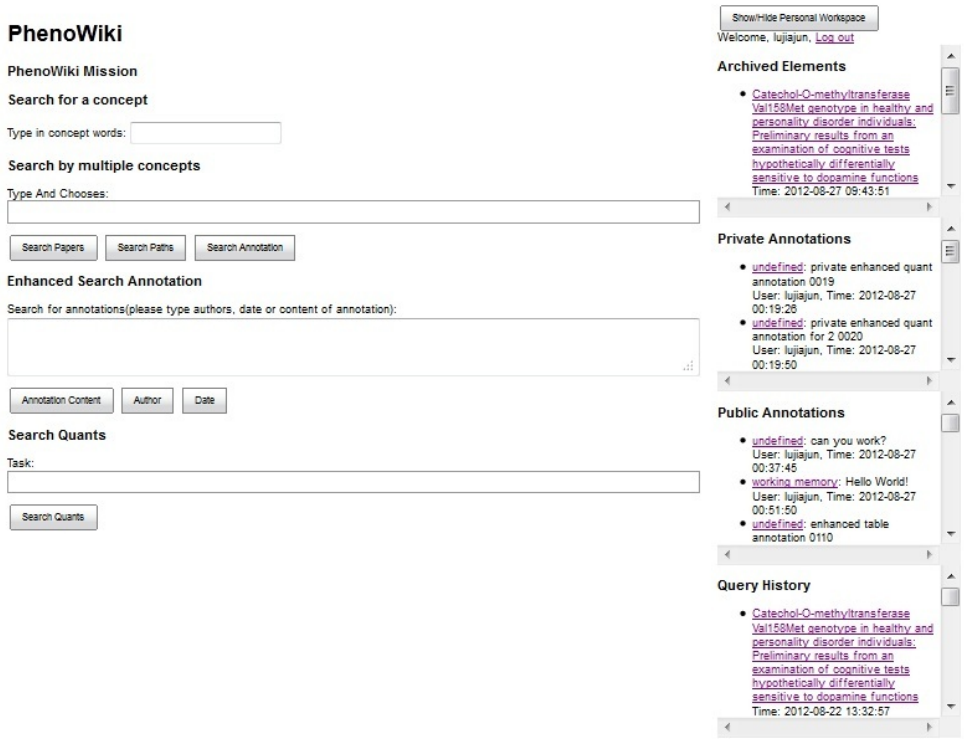
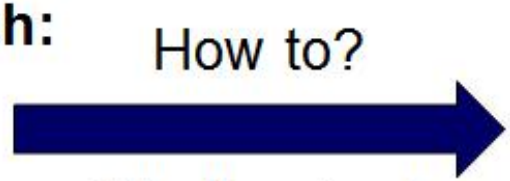


Figure: PhenoWiki+ home page

Introduction

Neuroscience Research:

- Published literature
- Experimental data
- User annotation data



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- Distill useful information

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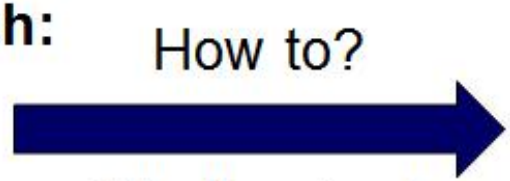

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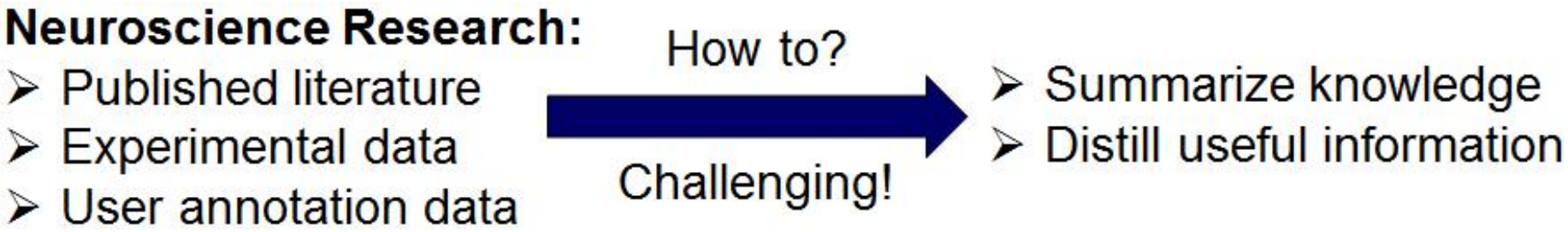

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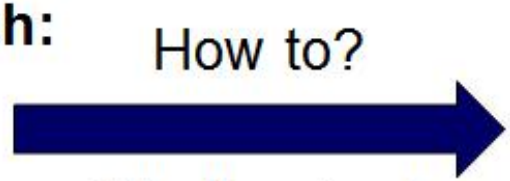

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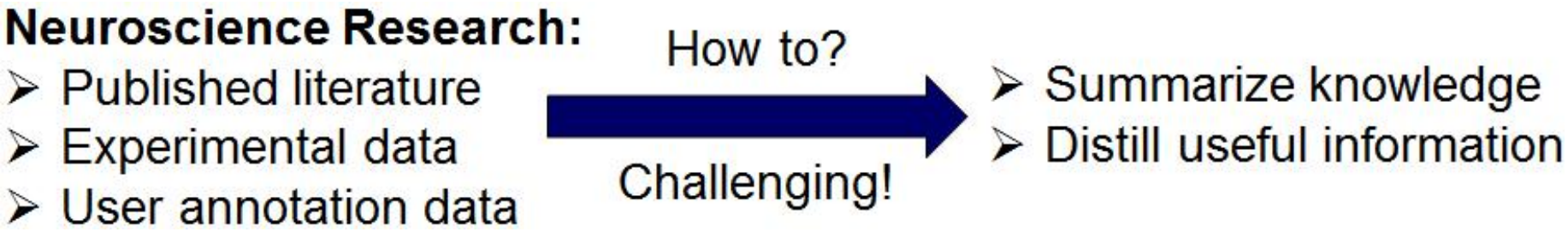

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- A framework for users to update and organize experimental results and information from literature.
- A search facility to retrieve the desired data.

Shortcomings of Existing PhenoWiki

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- Unable to support multi-concept query and search for literature content
- Does not have annotation facility

PhenoMining + PhenoWiki = PhenoWiki+

PhenoMining PhenoMining provides properties and relationship among phenotypes, such as the relations between concepts at different phenolevels and their conditional co-occurrence.

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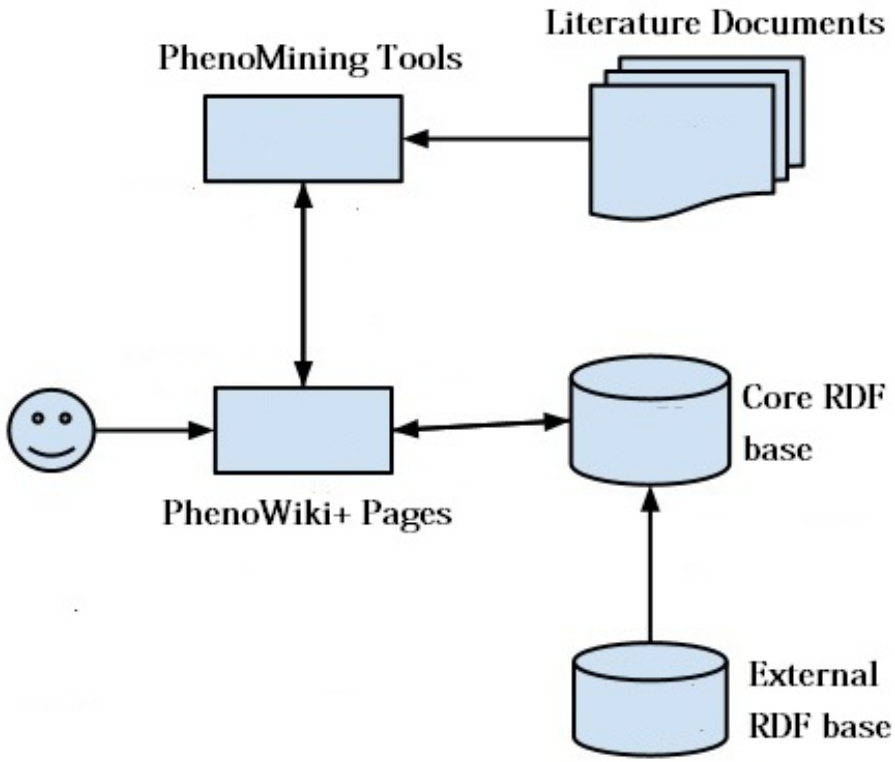

Figure: Data flow of PhenoWiki+ and PhenoMining system

- **PhenoMining Tools**
- Annotation Facility
- Personal WorkSpace
- User Feedback

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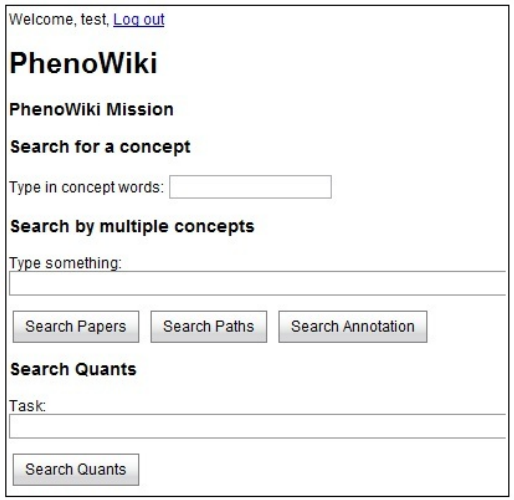

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Mining sentences and paragraphs relating one or more concept terms.

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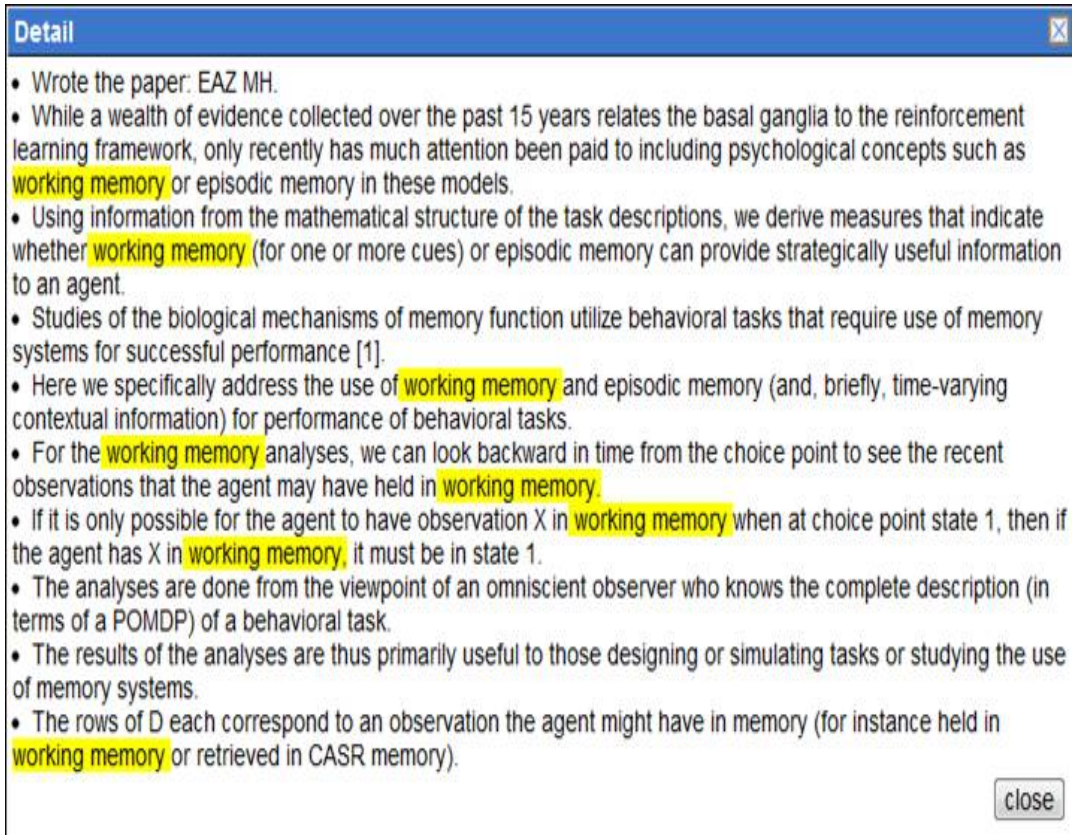

Figure: Assertion Mining in PhenoWiki+ Screenshot

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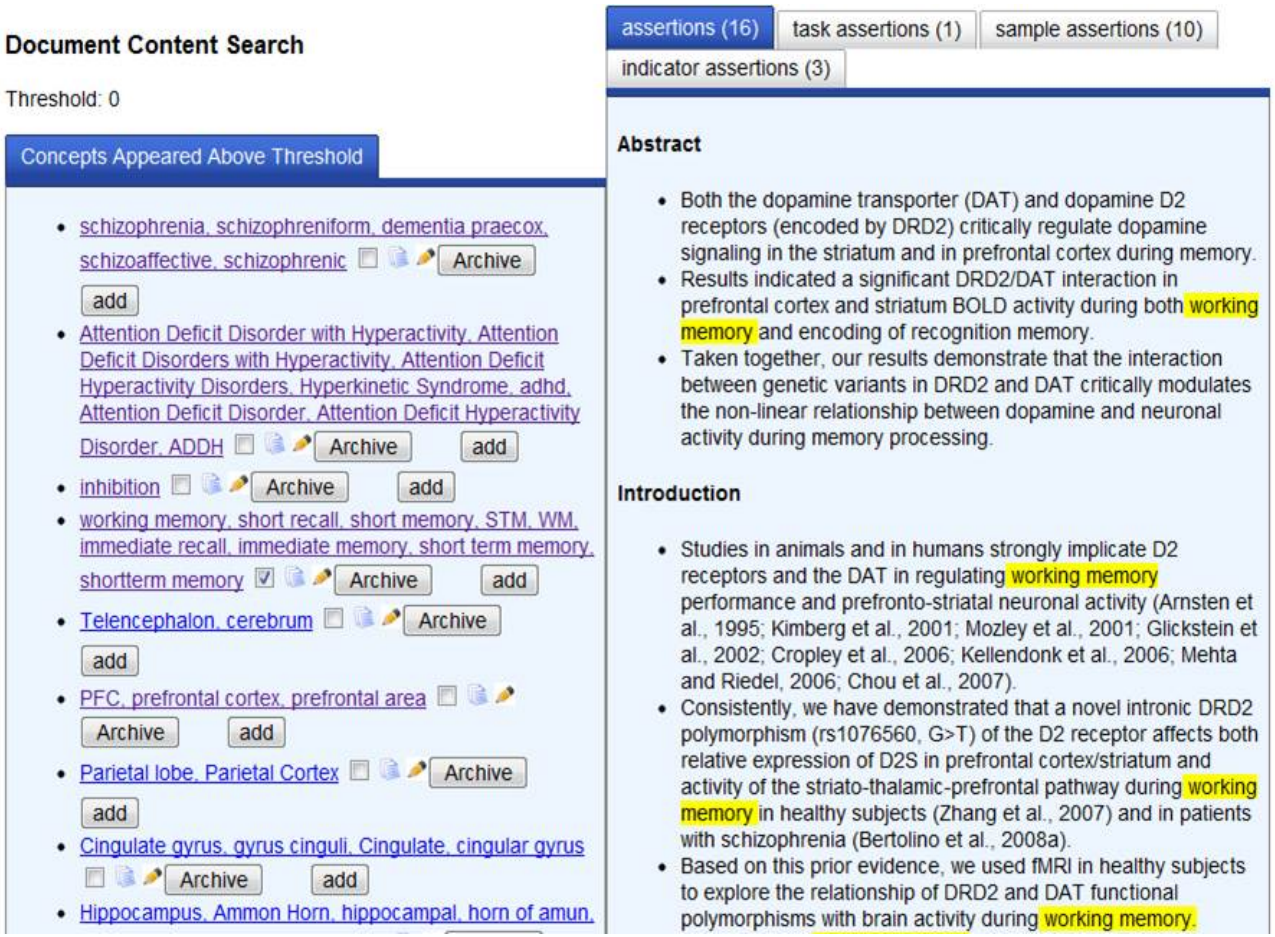

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Annotation Facility

Annotation can be linked and combined to describe the relationship among annotated objects.

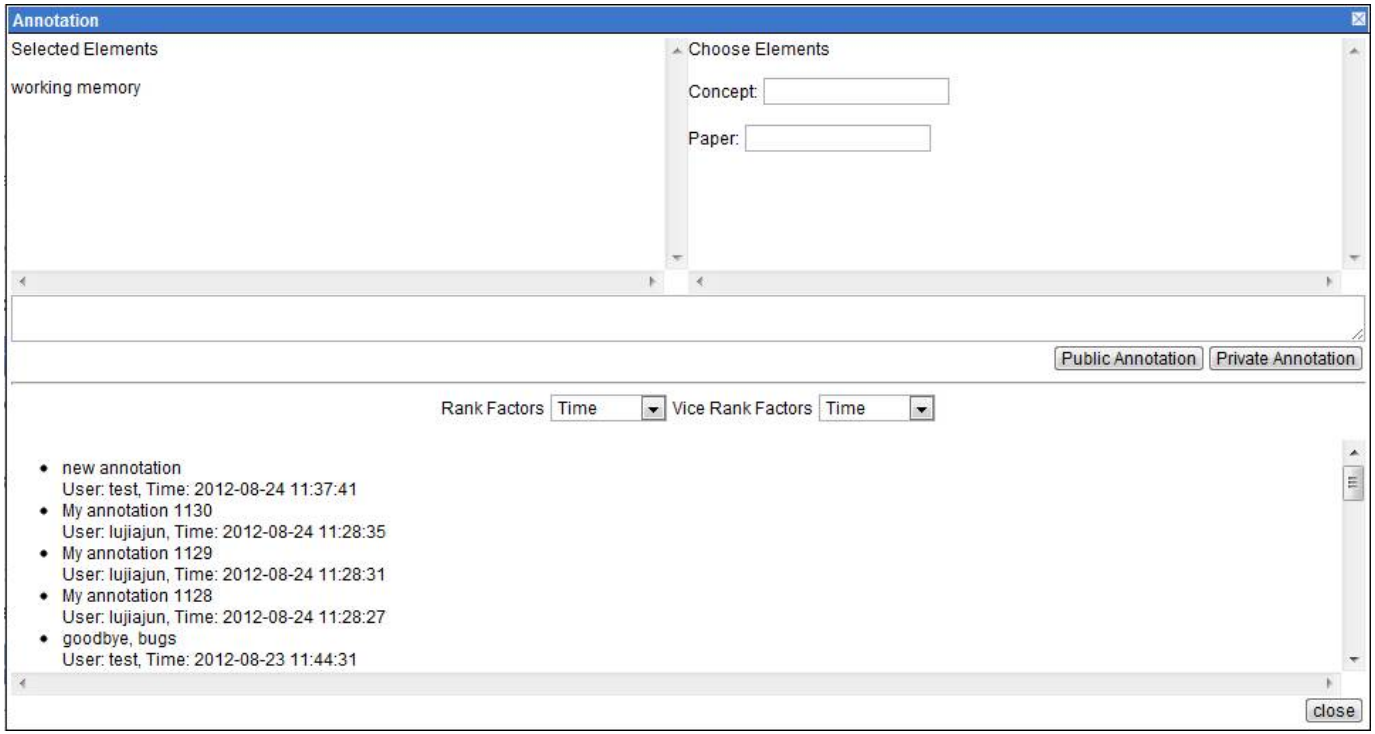

Figure: Screenshot of Annotation User Interface

Annotation Facility

Search by:

- Author and Date
- Annotated Objects
- Annotation Contents

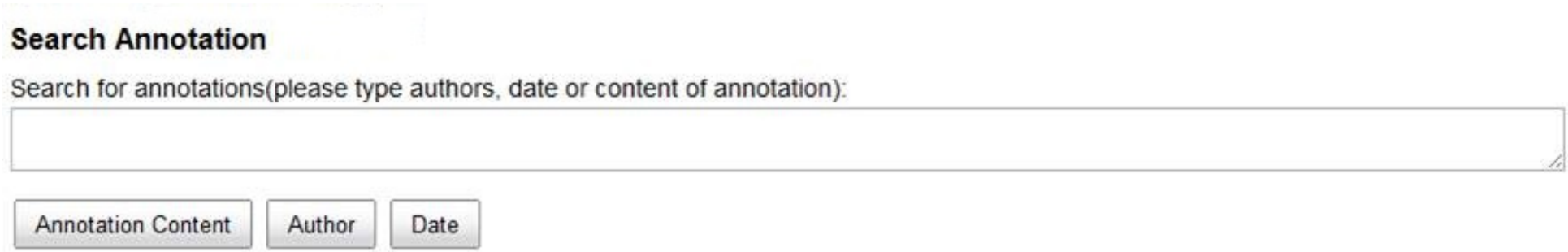

Figure: Screenshot of Annotation Search Panel

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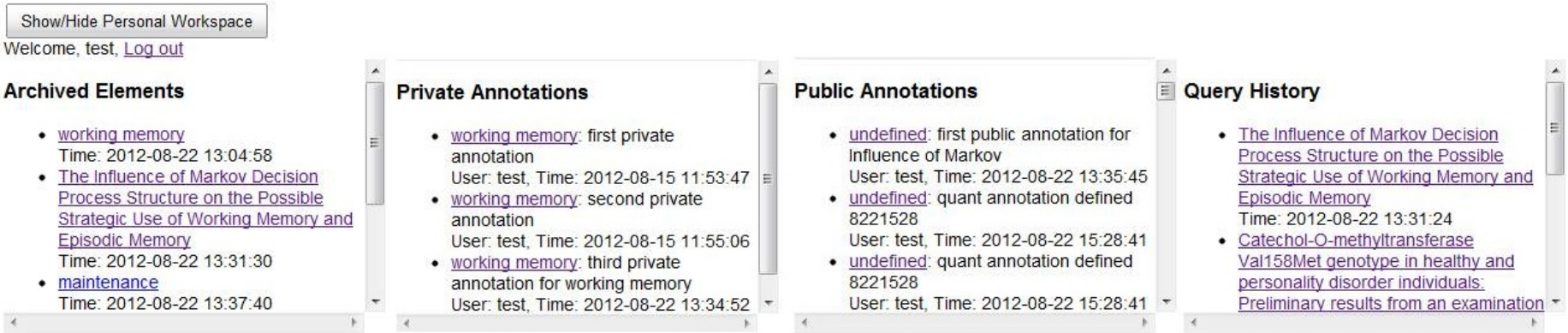

Figure: Four Types of Personal WorkSpaces

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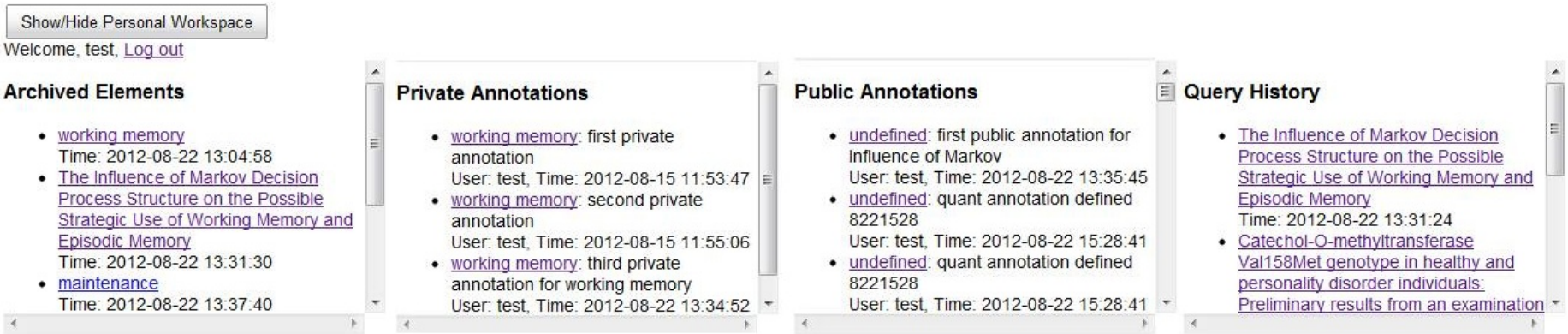

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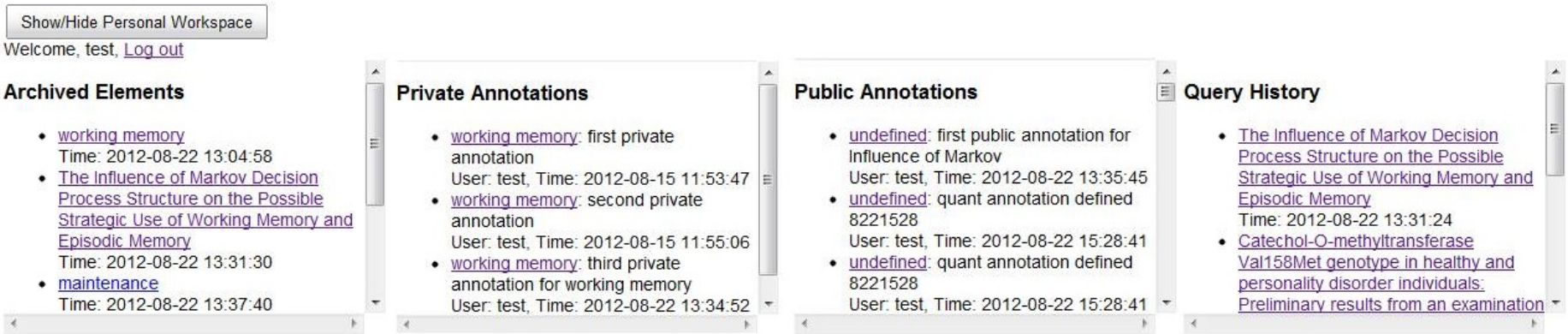

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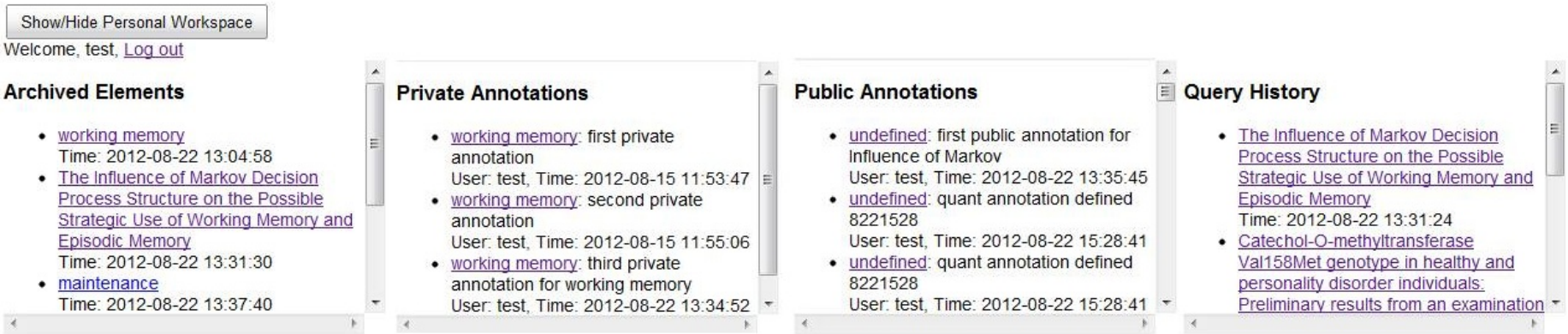

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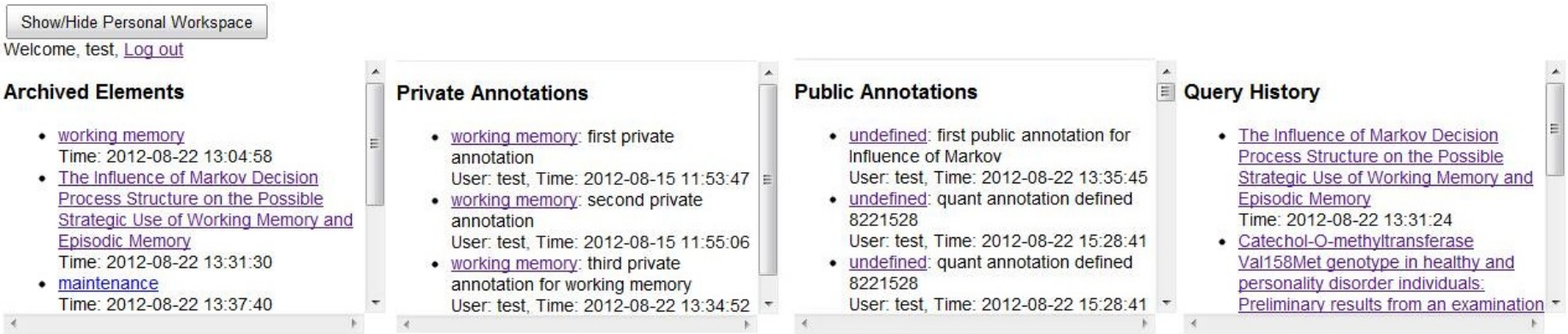

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- Archive objects of interest for future revisit.
- Public annotation for users to share.
- Private annotation for private use only.
- Record past query history for future references.

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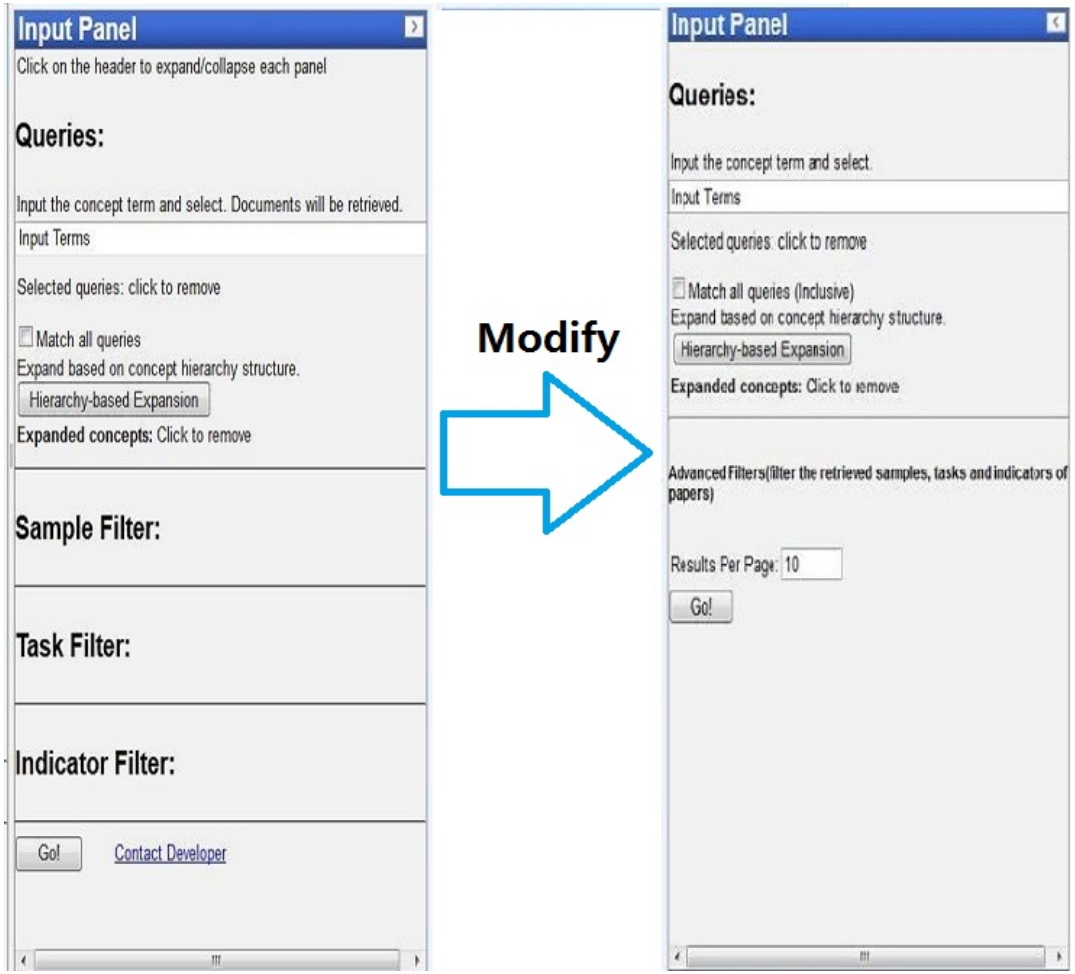
- Design GUI interface similar to Google or YouTube.
- Keep the GUI simple with less redundant information.
- Highlight the usefulness of PhenoMining tools.

An Example of GUI Modification According to Feedback



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Future Work:

- More collaborative studies with neuroscientists are needed to improve the system scalability and usability.

Acknowledgements

I wish to thank Professor Wesley Chu for his guidance and suggestions to the project. Chen Liu for providing implementation directions and resolving technical difficulties. I also like to thank Prof. Carrie Bearden and her graduate students Rachel Jones and Caroline Montojo for their valuable feedback on the PhenoMining and PhenoWiki+. And thank the CSST committee for their support!

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Q & A

Thank you!