

BIOCMS: Resource integration and Web application framework for Bioinformatics

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Background and Objective

High through put technologies in biomedical research allow for the study of biological processes as integrated systems. Significant amount of such data need to be stored, managed and analyzed to make the contribution of these data meaningful. A resource facility comprising of members with diverse skill sets, including knowledge of programming and an educational background in biology will help in resource integration. This project exemplifies such relation that exists between University of Nebraska at Omaha and other multiple INBRE units in Nebraska. The objective of current work was to develop a mechanism that allowed multiple researchers access constantly evolving hardware and software resources that would aid in their biomedical research involving high-throughput data analysis.

Methods

Custom application and functionality were created under the open source web application framework called WebGUI.

Results

A prototype framework (BIOlogical Content Management System) was developed that allows multiple users within INBRE units in Nebraska to upload data, manage and use a collection of open-source and 'in house' computational tools.

Discussion and Conclusion

The features from the parent WebGUI simplify content management for users, while the versioning and workflow systems allow system administrators to manage the system more efficiently. The development and availability of software tailored to the needs of an individual laboratory will ensure data quality and enhance data analysis and discovery.

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