GDSI 12 World Conference
PhD Student Workshop

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Motivation

•Masser's article [GSDI 2009] "Changing notions of a Spatial Data Infrastructure" , highlighted the impact of changes from Web 1.0 to Web 2.0 on SDIs – towards GeoWeb 2.0 key features of being dynamic, participative, user-centric, decentralised, loosely-coupled and rich.

•Many visual analytics systems still retain static, producer-centric and basic features of Web 1.0.

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Research Theme

"Real-World" User-centric Design and Development of a Visual Analytics System for Analysing Hierarchical and High-dimensional Data

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Current Work:

Analysis of current research tends towards research-centric ("solution looking for a problem") rather than practitioner (real-user)-centric ("problem requiring a solution")

Application of "real-world practice-centric" approaches to the evaluation of Visual Analytics applications.

Evaluation study of target users applying visual analytics applications in a health-care setting to address their analysis tasks.

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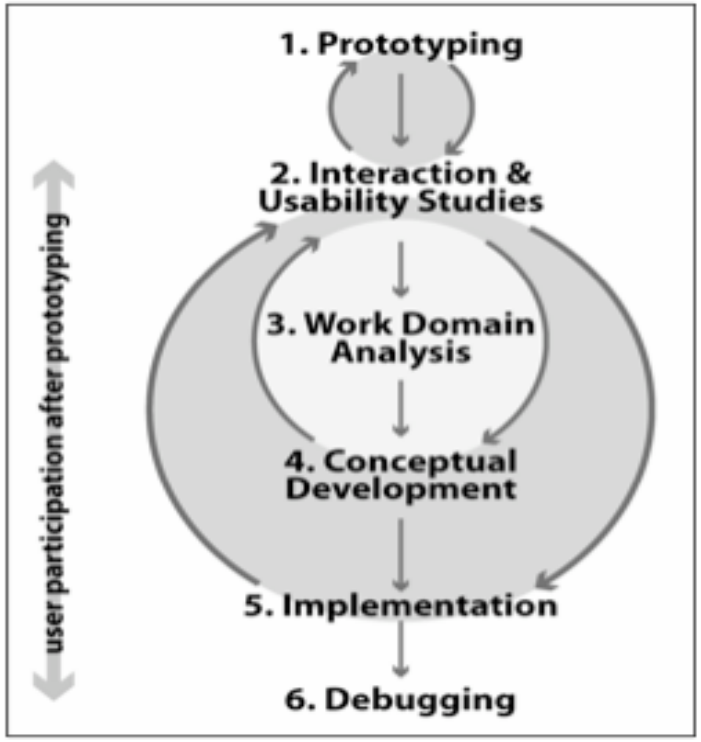
A modified user-centered design approach

Roth et all [2] adapted from Robinson et al [1]'s 6-stage user0centered design process:



[1] A. C. Robinson, et.al, "Combining Usability Techniques to Design Geovisualization Tools for Epidemiology," Cartogr Geogr Inf Sci., vol. 32, no. 4, pp. 243-255, Oct. 2005.
[2] R. E. Roth, K. S. Ross, B. G. Finch, W. Luo, and A. M. MacEachren, "A user-centered approach for designing and developing spatiotemporal crime analysis tools," in Sixth international conference on Geographic Information Science, 2010.

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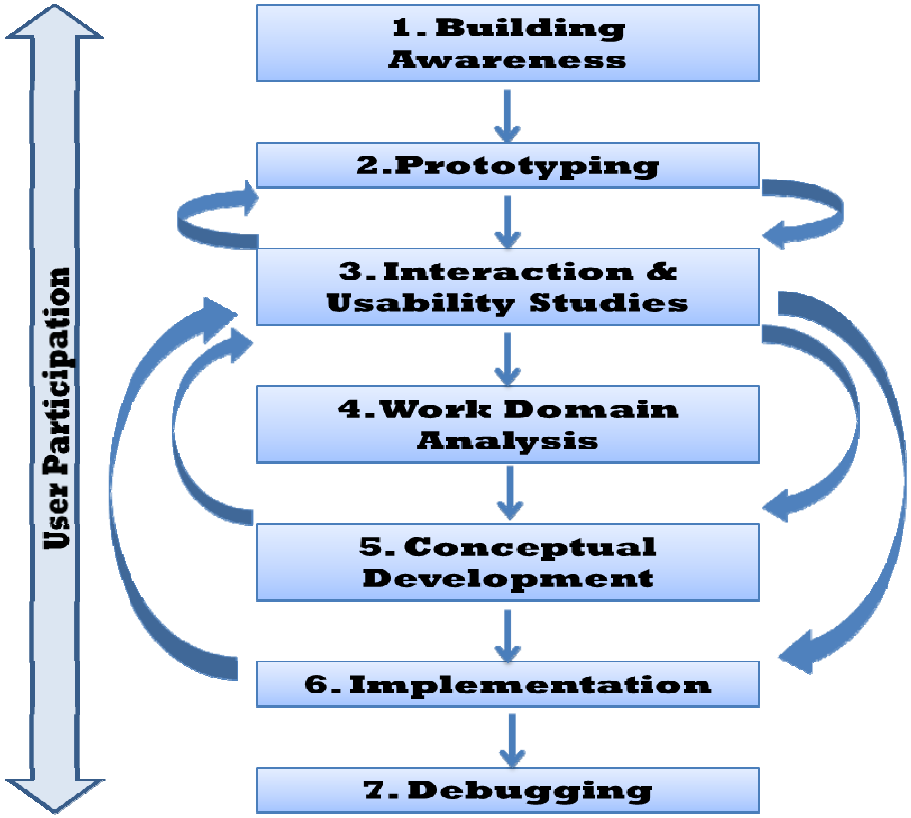
Adapted "real-world" user-centered design approach

Adapted from Roth et all [2]



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A modified “real-world” user-centered design approach

Adaptations to [2] Roth et al

1. Building Awareness
   - Many users in this part of the world new to data visualization techniques
   - [1] Robinson et al found that visualizations were not widely understood during assessment stage of the design process
   - This stage provides target users exposure to different types of data visualizations and ways data visualization techniques are applied to various industries
2. Prototyping
   - Gain understanding of broad overview of data visualization problems and needs faced by users
   - Use / transform data from organization. [1] Robinson et al. ESTAT case study required rework from not considering the way data loaded into the system.
   - Creation of working model of application that incorporates more than one visualisation technique.
3. Interaction & Usability Studies
   - Domain user driven as opposed to research (producer) driven
   - Real users, real tasks related to the domain