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Using Digital Tabletops

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Using Digital Tabletops

Collaborating for Learning

May 15, 2013

Outline

- What are digital tabletops good for?
- Why is it hard to find table applications?
- What types of tables are there?
- Where can I find table applications?
- Demo & Hands on

Tabletop Computers

houzz.com

educationworld.in

Personal.vu.nl/e.simaodagracadias/dtworkshop_res

Teachertechnologies.com

Why Tables?

- Collaboration
  - Eye contact
  - Shared control
  - Space
  - Natural for groups

beamlog.blogspot.com

VS

dirtymouse.co.uk/web/city-wall-helsinki

brighthubeducation.com

sites.google.com/site/collaborativelearningspaces

[9]

Why Tables?

- Collaboration
- Informal
  - Simultaneous interaction
  - Sit or stand

Why Tables?

- Collaboration
- Informal
- Public spaces
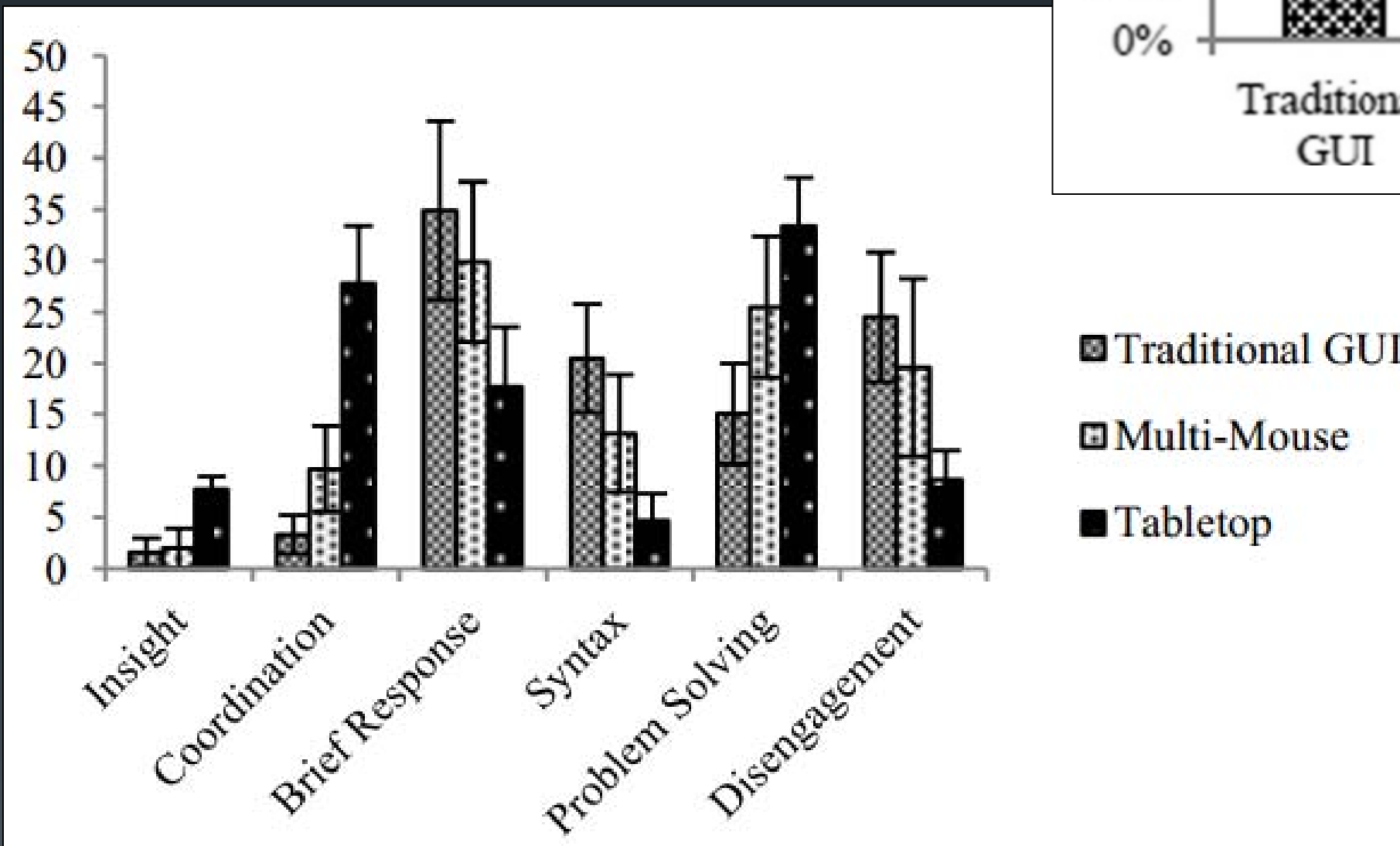 - No need for keyboard/mouse
  - Cleanable

Why Tables?

- Collaboration
- Informal
- Public spaces
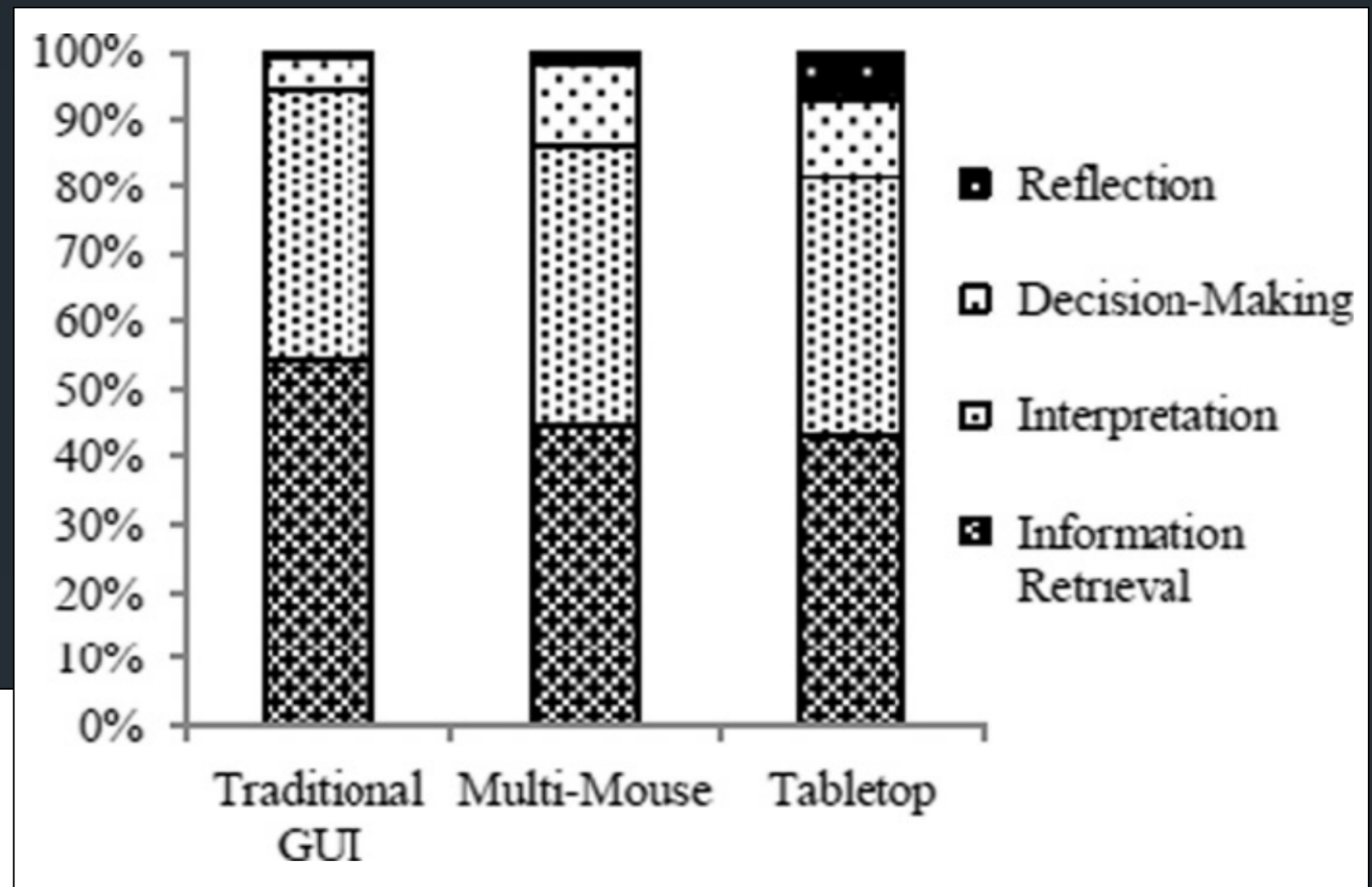- Encourages different learning interactions

Collaboration

Study on use of tables for learning:

Collaboration

Study on use of tables:

Time per Activity
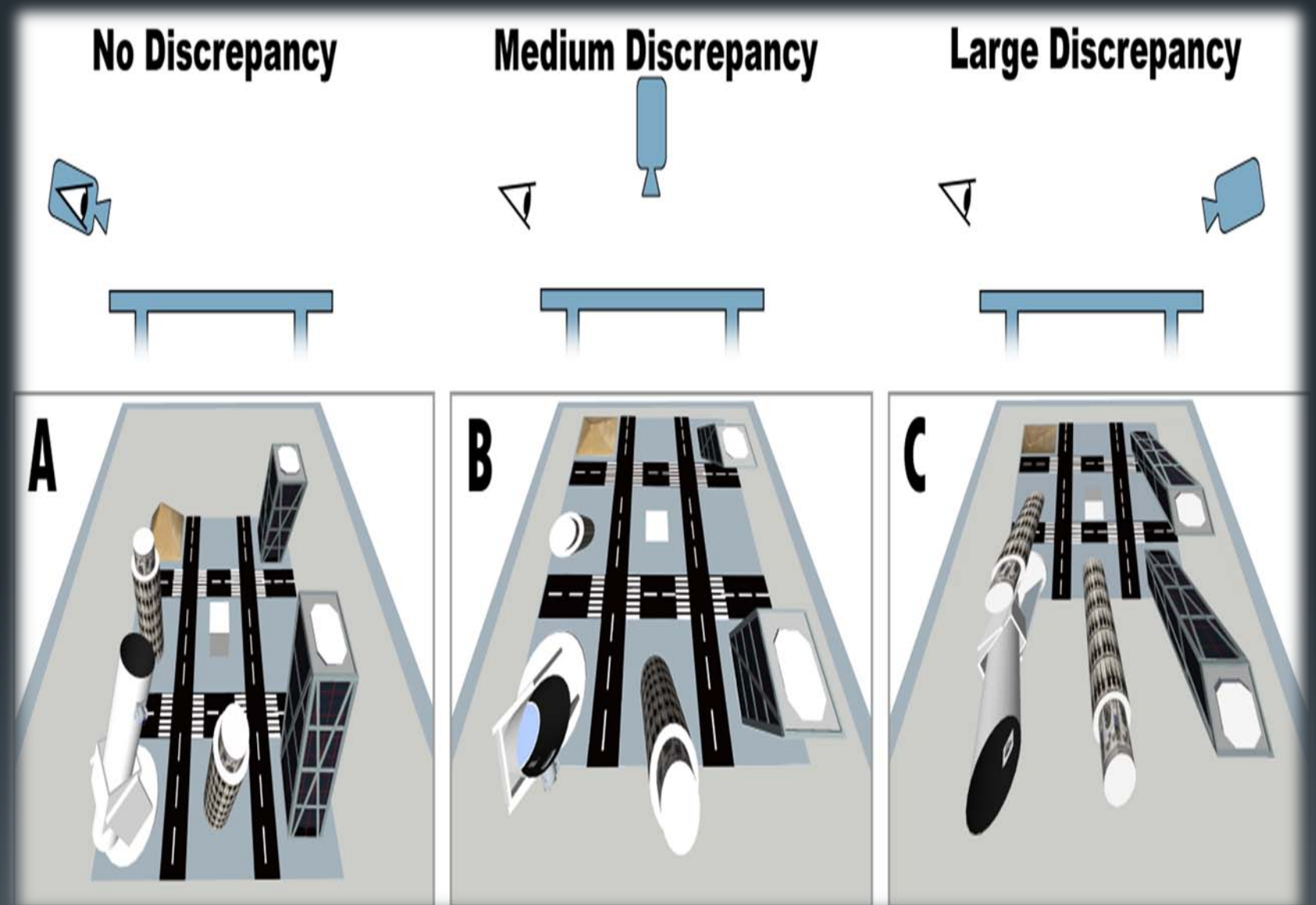

Distribution of Talk Categories

Table Challenges

- Not a mass product
- Proximity - higher resolution
- Reach
- Viewing angles
- Orientation

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http://www.gizmowatch.com/

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from *The effects of changing projection geometry on the interpretation of 3D orientation on tabletops* (2009)*, Hancock, Nacenta, Gutwin, & Carpendale, ITS.*
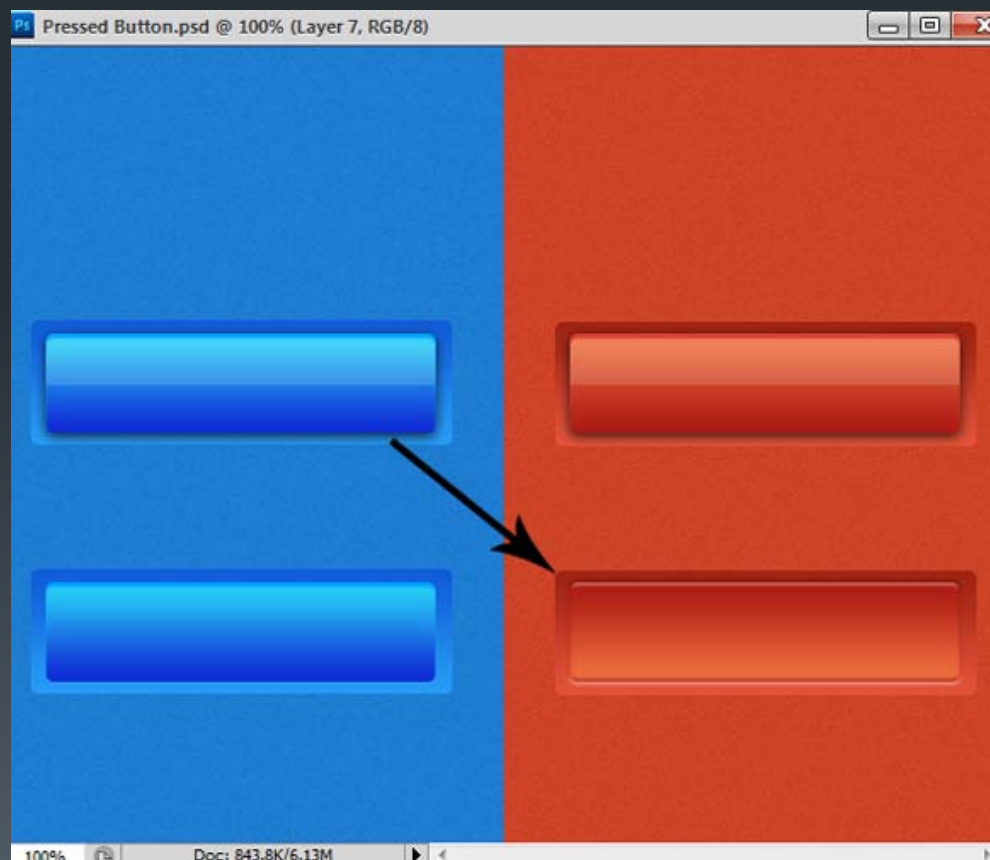
Table Challenges

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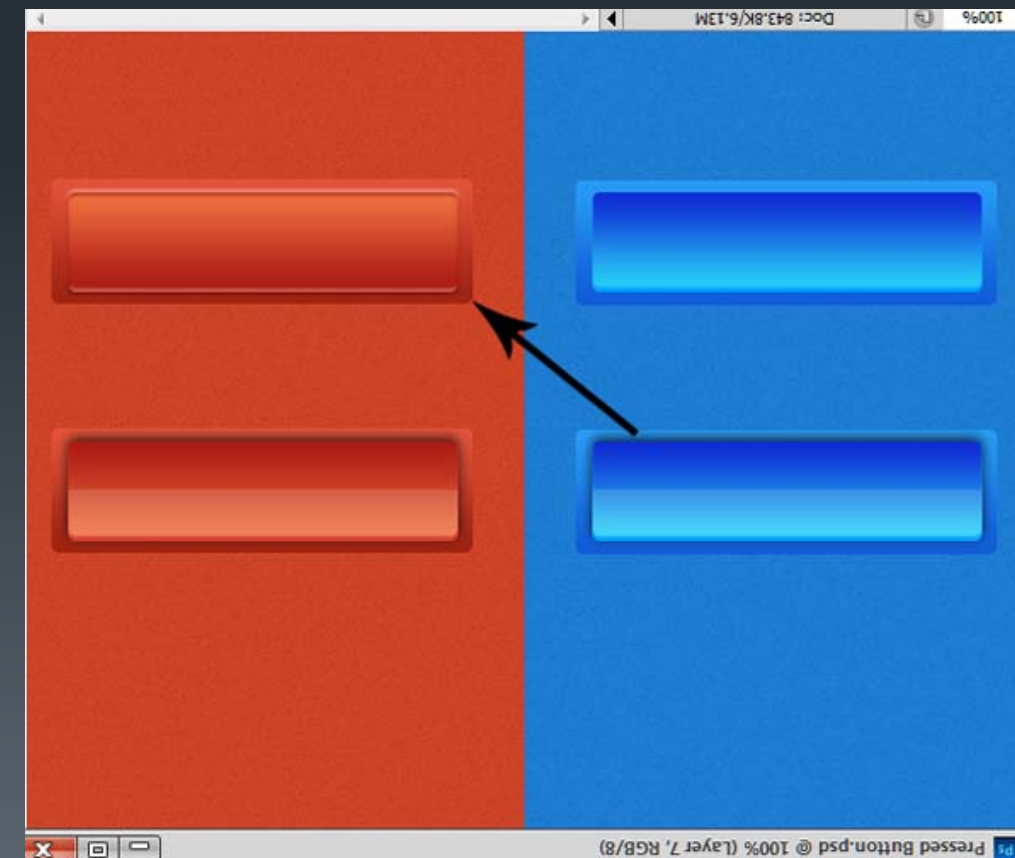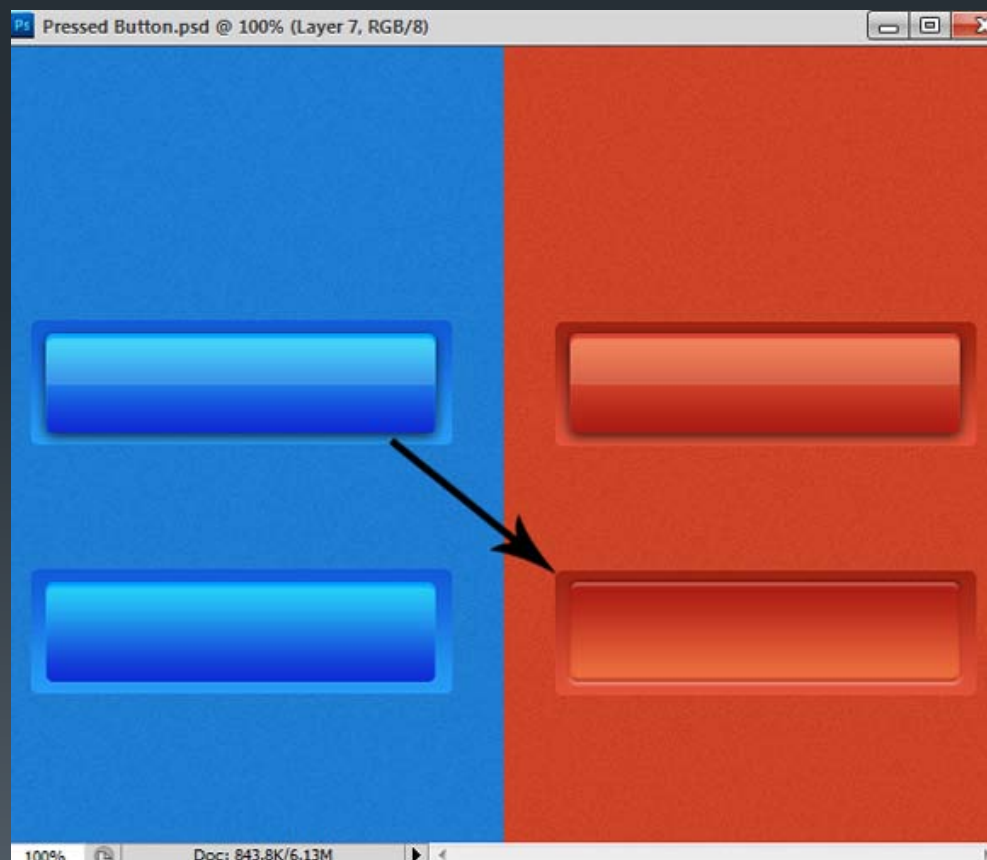- Reach
- Viewing angles
- Orientation

Table Challenges

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- Reach
- Viewing angles
- Orientation

Pixelsense / Surface

http://slideshow.techworld.com/

houzz.com

Microsoft Surface

Microsoft Surface 2.0 / PixelSense
(also Samsung SUR40)

Smart Tables

http://taglearning.com

SMART Table

http://smarttech.com

SMART Table 422i

Custom Tables
TUIO

http://www.gesturetek.com/

http://ideum.com

http://mi-lab.org

LCR Tables

- 3 Variations
  - All created by SMART Custom Solutions
  - All support same applications

Applications

- Bohemian Bookshelf
- Lindsay Virtual Human

Calgary only

- Bluestacks
- Library Explorer (LADS)
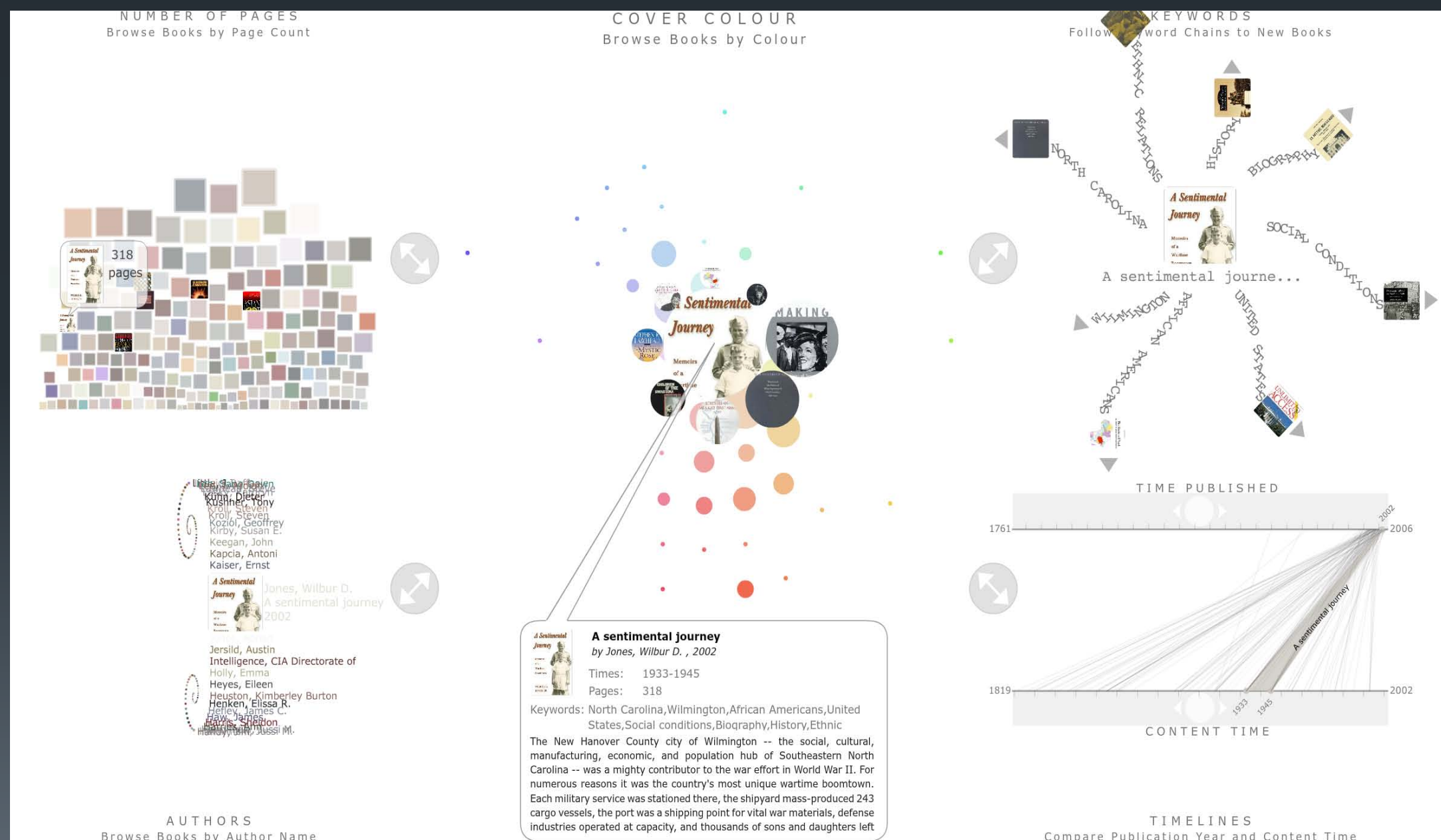- Windows7 Touch Package
- World-Wide Telescope
- NUIVerse

http://brosz.info/TableAppWiki

Application: Bohemian Bookshelf

Book browser

- Find interesting books serendipitously

Web based

- http://www.alicethudt.de/BohemianBookshelf/
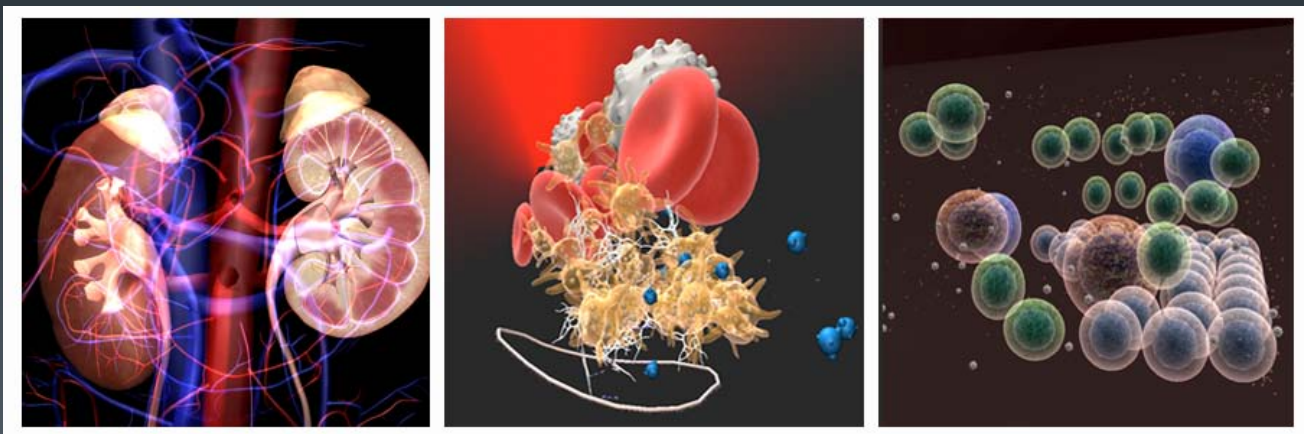- Developed by U of C's Innovations in Visualization Lab http://innovis.cpsc.ucalgary.ca/

Application: Lindsay Virtual Human
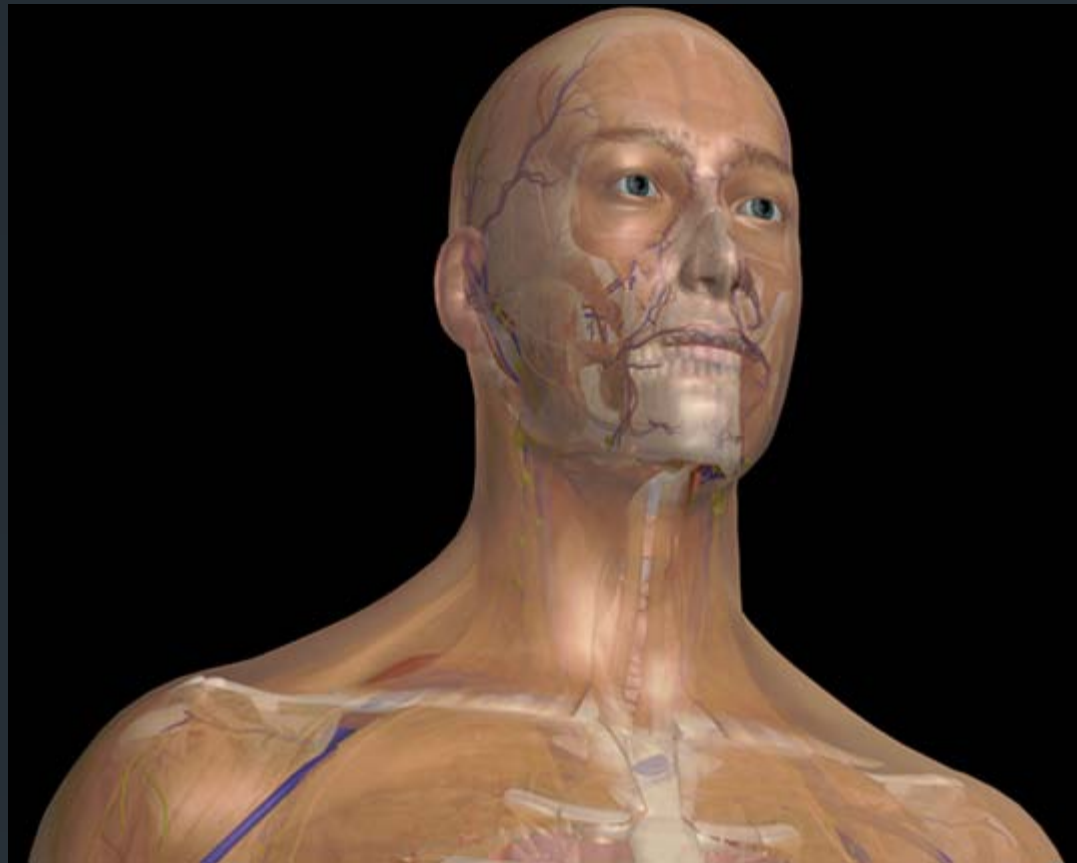
- The LINDSAY project provides a collection of biological models and computational tools for research and learning in the context of human anatomy and physiology.

- http://lindsayvirtualhuman.org
- Web based (restricted access)
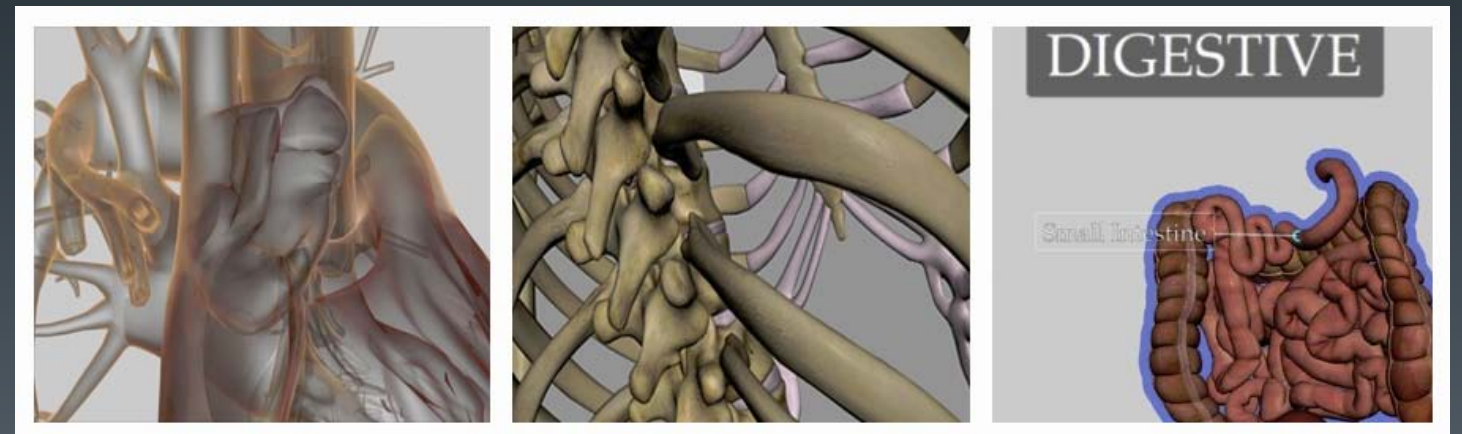
Application: BlueStacks

- Android simulator
  - Any android app can be run

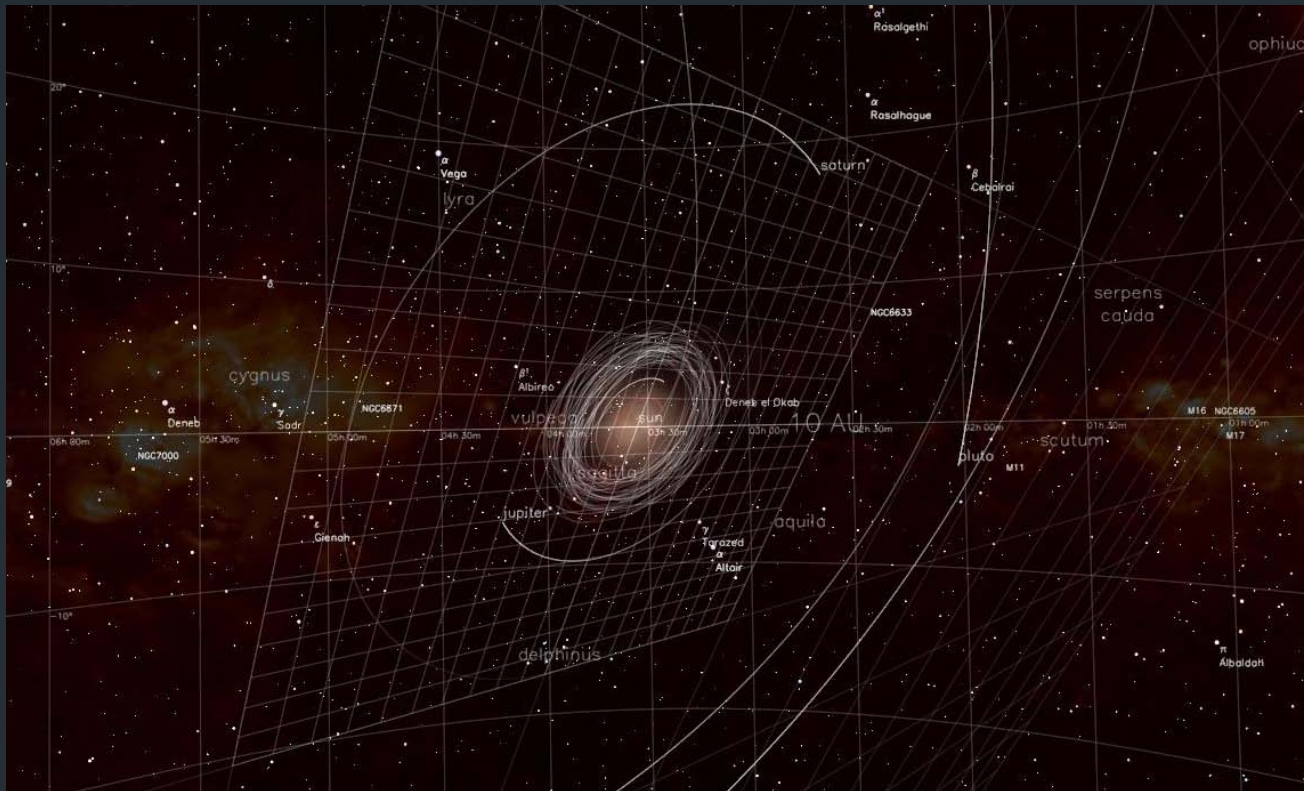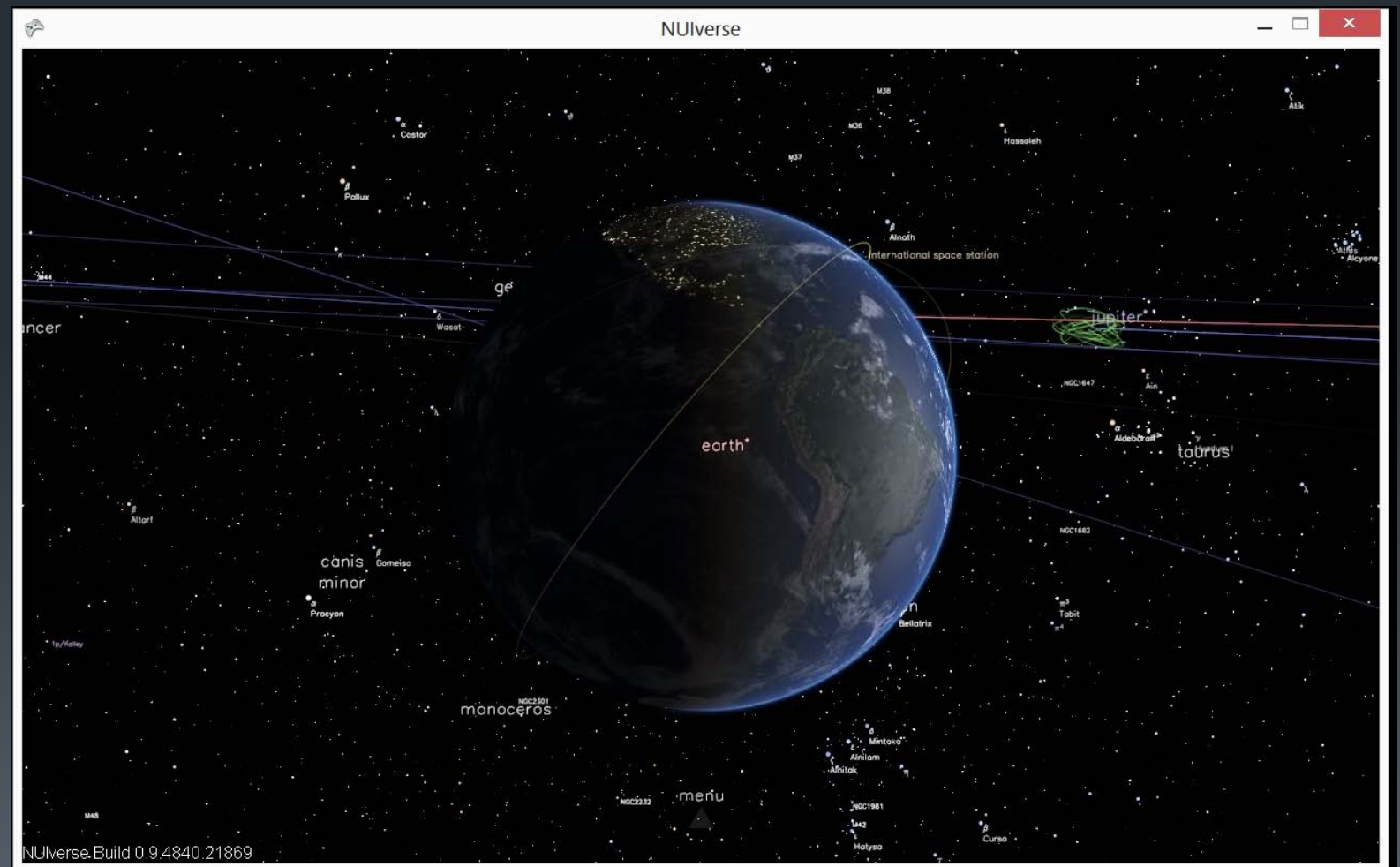http://www.bluestacks.com/index.html
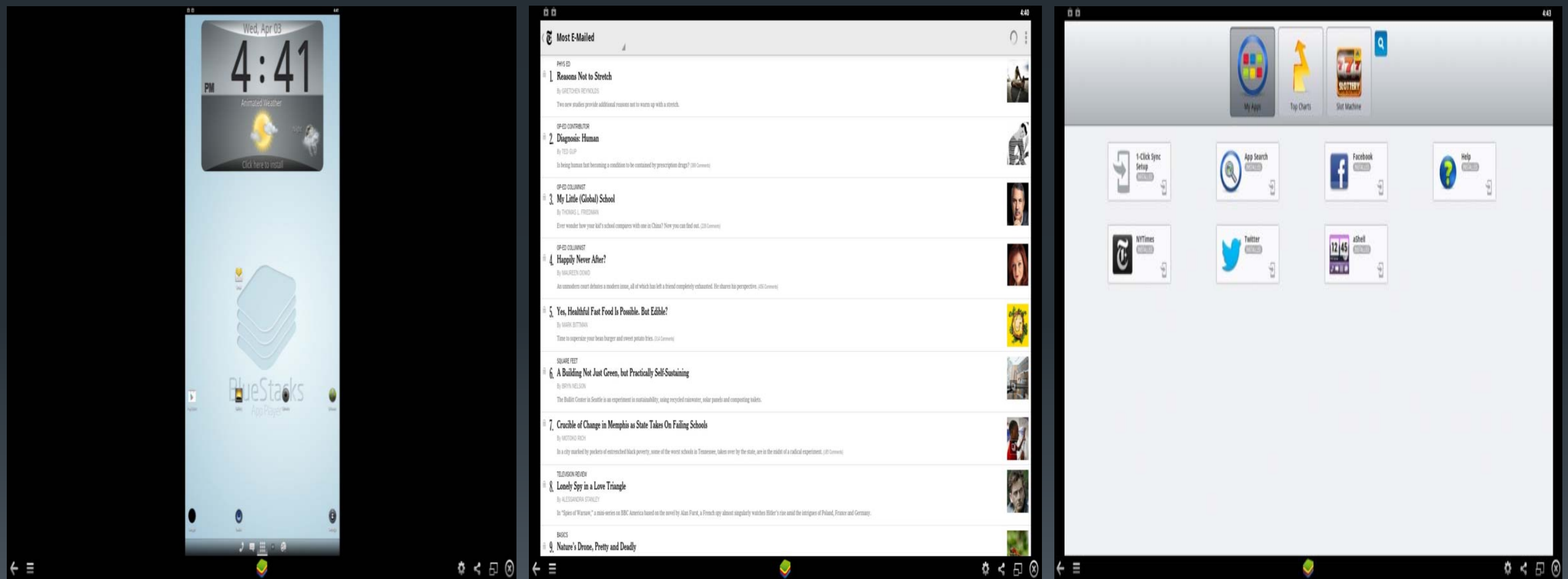
Application: LADS / Library Explorer

- Exploration & curated tours of large digital imagery
  - Link text, maps, & imagery

Application: NUIVerse

- Explore the solar system
- http://drdave.co.uk/blog/category/NUIverse

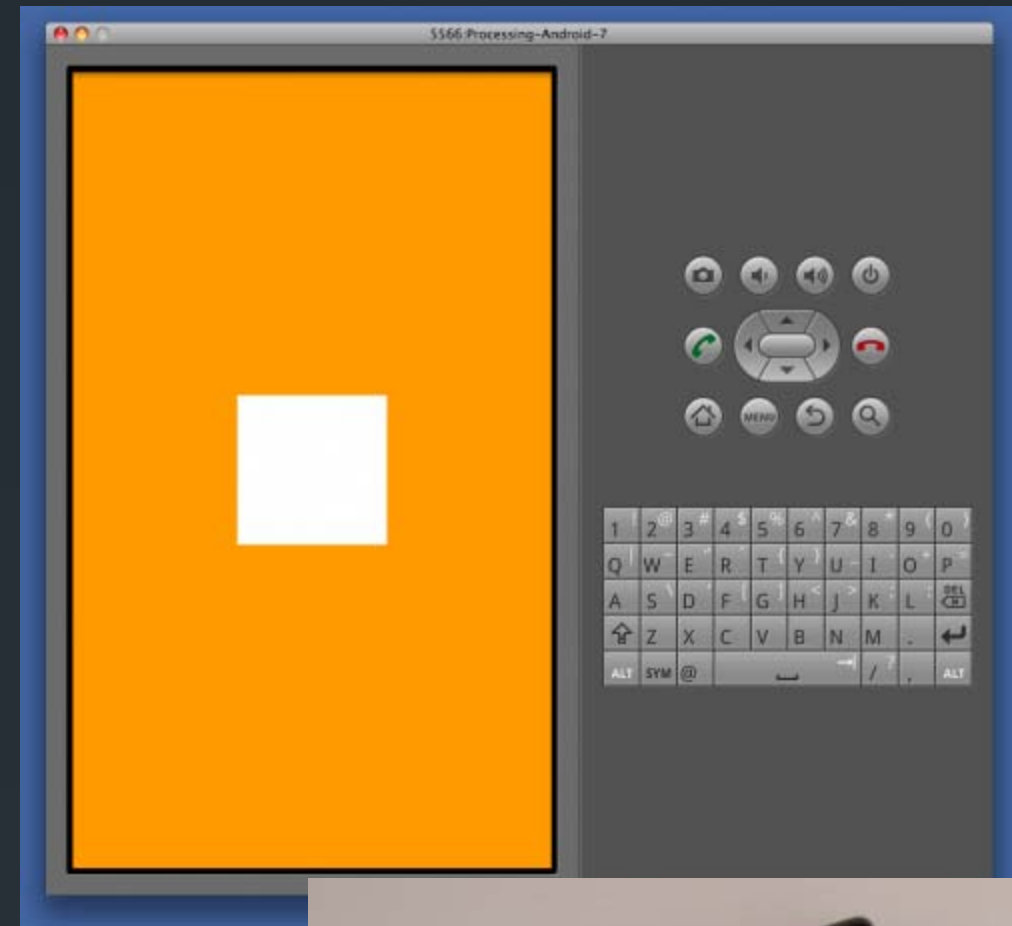# Application: Win7 Touch Package

- 6 separate applications
  - 3 games
  - 1 screensaver
  - Surface Globe, much like Google Earth
  - Surface Collage, image organizer

Developing Something *New*

- Processing & Android

References

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3. *Interaction with Digital Tabletops* (2006), Scott & Carpendale, IEEE Comp. Graph. & App.
4. *The effects of changing projection geometry on the interpretation of 3D orientation on tabletops* (2009), Hancock, Nacenta, Gutwin & Carpendale, ITS.
5. *Around the Table: Are Multi-Touch Surfaces Better than Single-Touch for Children's Collaborative Interactions* (2009), Harris, Rick, Bonnett, Yuill, Fleck, Marshall & Rogers, Proc CSCL.
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7. *Bats & APEs: Designing an Interactive Tabletop Game for Natural History Museums* (2012), Horn, Leong, Block, Diamond, Evans, Phillips & Shen, ACM CHI.
8. The Design, Development, and Deployment of a Tabletop Interface for Collaborative Exploration of Genomic Data (2012), Shaer, Strait, Valdes, Wang, Feng, Lintz, Ferreirae, Grote, Tempel & Liu, Int J of Human-Computer Studies.
9. *Territoriality and Behaviour On and Around Large Vertical Publically-Shared Displays* (2012), Azad, Ruiz, Vogel, Hancock & Lank, DIS.