



Graphical User
Interface for
Floor Plan
Visualization
at Allegheny
College

CeCe Colón

Motivation

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Related Work

Approach

Why SVG?

Evaluation
Strategy

Other

Graphical User Interface for Floor Plan Visualization at Allegheny College

CeCe Colón

November 20, 2017



Motivation

Graphical User
Interface for
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Related Work

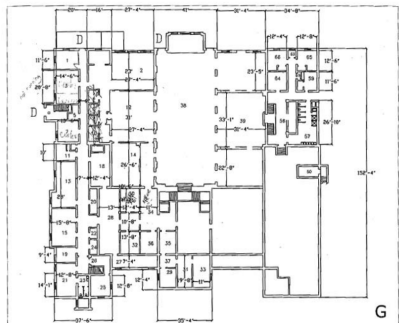
Approach

Why SVG?

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- Current Availability



BROOKS



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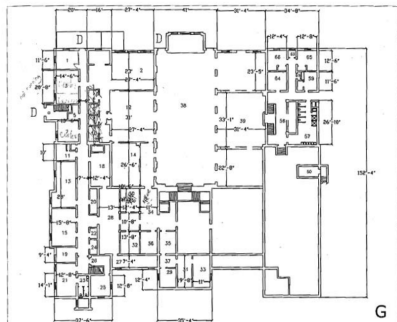
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- Current Availability
- Data and information Visualization



BROOKS



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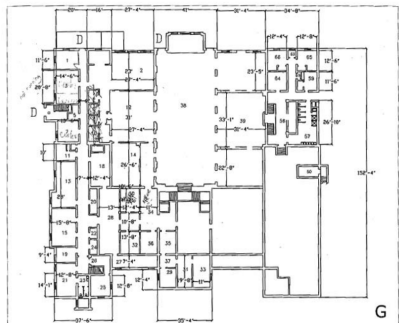
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- Current Availability
- Data and information Visualization
- Branding



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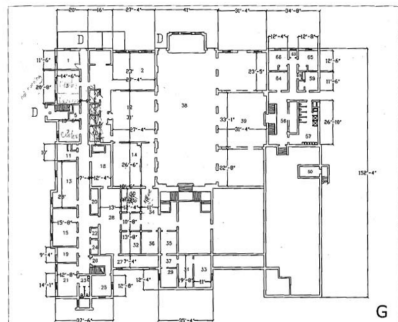
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- Current Availability
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 - New Applications



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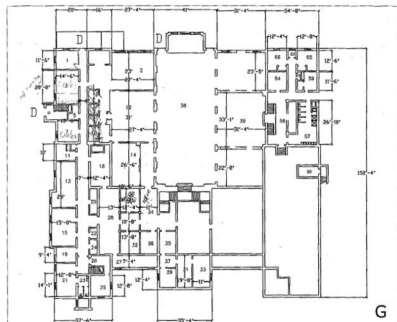
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- Current Availability
- Data and information Visualization
- Branding
 - New Applications
 - Retention



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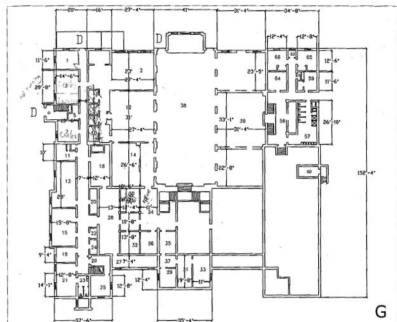
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- Current Availability
- Data and information Visualization
- Branding
 - New Applications
 - Retention
- Rooming Information



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- Graphical User Interface



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- Graphical User Interface
- Interactivity



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- Graphical User Interface
- Interactivity
- SVG 2D floor plans



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- Graphical User Interface
- Interactivity
- SVG 2D floor plans
- Goals



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- Graphical User Interface
- Interactivity
- SVG 2D floor plans
- Goals
 - CLARITY and VISIBILITY



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- Graphical User Interface
- Interactivity
- SVG 2D floor plans
- Goals
 - CLARITY and VISIBILITY
 - Display relevant information



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- Graphical User Interface
- Interactivity
- SVG 2D floor plans
- Goals
 - CLARITY and VISIBILITY
 - Display relevant information
 - Useful to different offices



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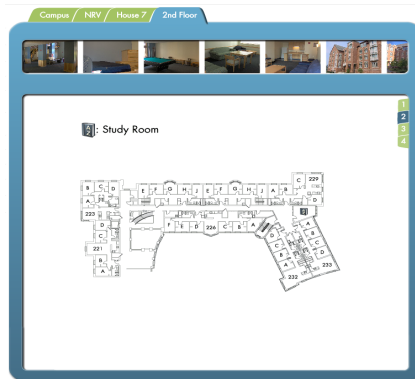
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- Paid Programs





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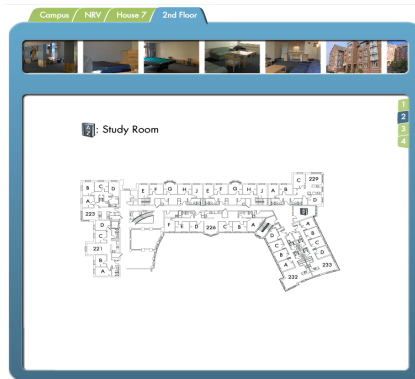
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- Paid Programs
 - Campus Bird <http://map.allegheny.edu/>





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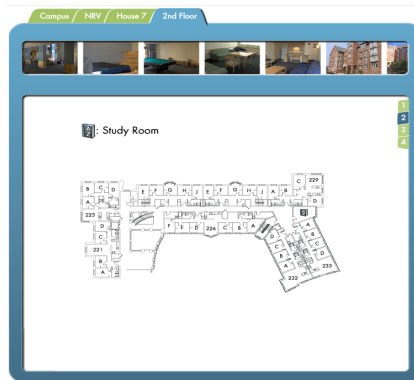
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- Paid Programs
 - Campus Bird <http://map.allegheny.edu/>
 - nuCloud





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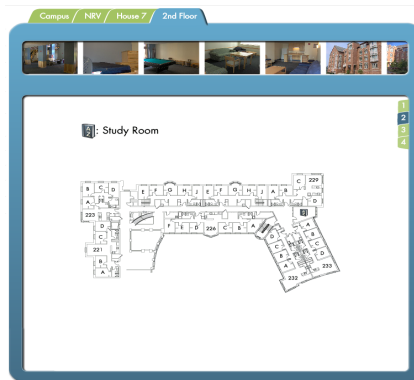
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- Paid Programs
 - Campus Bird <http://map.allegheny.edu/>
 - nuCloud
- SVG country maps





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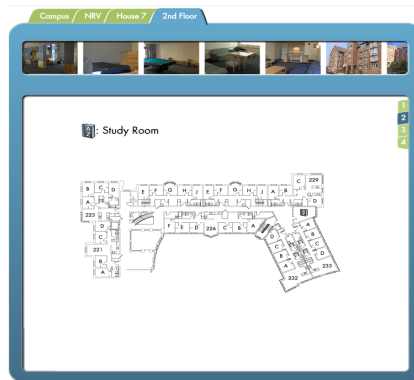
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- Paid Programs
 - Campus Bird <http://map.allegheny.edu/>
 - nuCloud
- SVG country maps
- University Created Floor Plans





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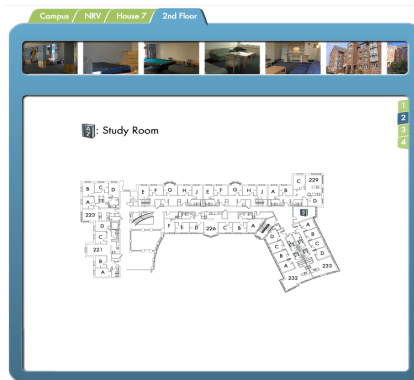
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- Paid Programs
 - Campus Bird <http://map.allegheny.edu/>
 - nuCloud
- SVG country maps
- University Created Floor Plans
 - **Case Western**





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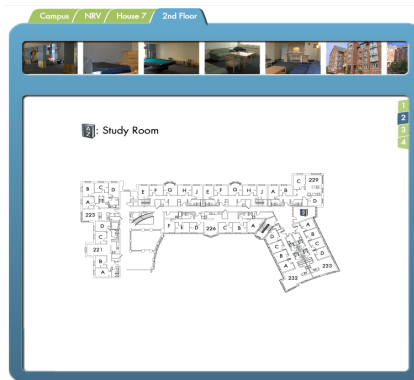
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- Paid Programs
 - Campus Bird <http://map.allegheny.edu/>
 - nuCloud
- SVG country maps
- University Created Floor Plans
 - **Case Western**
 - Rochester Institute of Technology





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- Convert current Floorplans to SVG graphics



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- Convert current Floorplans to SVG graphics
 - Adobe Illustrator



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- Convert current Floorplans to SVG graphics
 - Adobe Illustrator
 - Inkscape



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- Convert current Floorplans to SVG graphics
 - Adobe Illustrator
 - Inkscape
- SVG code editing



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- Convert current Floorplans to SVG graphics
 - Adobe Illustrator
 - Inkscape
- SVG code editing
- Adding Interactivity



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- Convert current Floorplans to SVG graphics
 - Adobe Illustrator
 - Inkscape
- SVG code editing
- Adding Interactivity
 - JavaScript



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- Convert current Floorplans to SVG graphics
 - Adobe Illustrator
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- SVG code editing
- Adding Interactivity
 - JavaScript
 - HTML



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Other

- Convert current Floorplans to SVG graphics
 - Adobe Illustrator
 - Inkscape
- SVG code editing
- Adding Interactivity
 - JavaScript
 - HTML
- Displaying all information in a fluid way



SVG vs Everything Else

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Why SVG?

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Other

50x50 bitmap



50x50 SVG



Bitmap scaled to 150x150



SVG scaled to 150x150



- XML-based vector graphic



SVG vs Everything Else

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50x50 bitmap



50x50 SVG



Bitmap scaled to 150x150



SVG scaled to 150x150



- XML-based vector graphic
 - Compatible with HTML, JavaScript (jQuery), and CSS



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Bitmap scaled to 150x150



SVG scaled to 150x150



- XML-based vector graphic
 - Compatible with HTML, JavaScript (jQuery), and CSS
- Scripting interactivity



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50x50 bitmap



50x50 SVG



Bitmap scaled to 150x150



SVG scaled to 150x150



- XML-based vector graphic
 - Compatible with HTML, JavaScript (jQuery), and CSS
- Scripting interactivity
- D3.js, Snap.js, Raphael.js



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50x50 bitmap



50x50 SVG



Bitmap scaled to 150x150



SVG scaled to 150x150



- XML-based vector graphic
 - Compatible with HTML, JavaScript (jQuery), and CSS
- Scripting interactivity
- D3.js, Snap.js, Raphael.js
- No resolution limits



SVG vs Everything Else

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50x50 bitmap



50x50 SVG



Bitmap scaled to 150x150



SVG scaled to 150x150



- XML-based vector graphic
 - Compatible with HTML, JavaScript (jQuery), and CSS
- Scripting interactivity
- D3.js, Snap.js, Raphael.js
- No resolution limits
- Faster load times



Evaluation Strategy

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**Evaluation
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Other

- Manual Testing



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Other

- Manual Testing
- System Usability Scale (SUS)



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- Manual Testing
- System Usability Scale (SUS)
 - Standardized method of evaluation



Evaluation Strategy

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Other

- Manual Testing
- System Usability Scale (SUS)
 - Standardized method of evaluation
- Self Created Questionnaire



Evaluation Strategy

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- Manual Testing
- System Usability Scale (SUS)
 - Standardized method of evaluation
- Self Created Questionnaire
 - Specific feedback in context for Allegheny



Other Considerations

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Other

- Institutional Review Board Form
 - Focus Group and Surveys to determine included information
 - Survey for post floor plan evaluations

| Task | Begin Date | End Date |
|---------------------------------|------------|----------|
| Chapter 1 and 2 final draft | 20 Nov | 12 Dec |
| Collecting original floor plans | 12 Dec | 20 Dec |
| Creating SVG images | 20 Dec | 15 Jan |
| Interactivity for SVG | 15 Jan | 15 Feb |
| Building Program Framework | 15 Feb | 15 March |
| Evaluation/Debugging | 15 March | 5 April |
| Final draft for edits | 1 April | 20 April |
| Edits | 20 April | 27 April |
| Final, bound copy submitted | 27 April | 1 May |



Future Work - Extended Applications

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Other

- Pelletier Library



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Other

- Pelletier Library
 - Stacks layout



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Other

- Pelletier Library
 - Stacks layout
 - Study Rooms



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- Pelletier Library
 - Stacks layout
 - Study Rooms
 - Public Computer Locations



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 - Stacks layout
 - Study Rooms
 - Public Computer Locations
- Campus Programming Spaces



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- Pelletier Library
 - Stacks layout
 - Study Rooms
 - Public Computer Locations
- Campus Programming Spaces
 - Campus Center



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 - Campus Center
 - Shultz



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 - Shultz
 - Tippie