

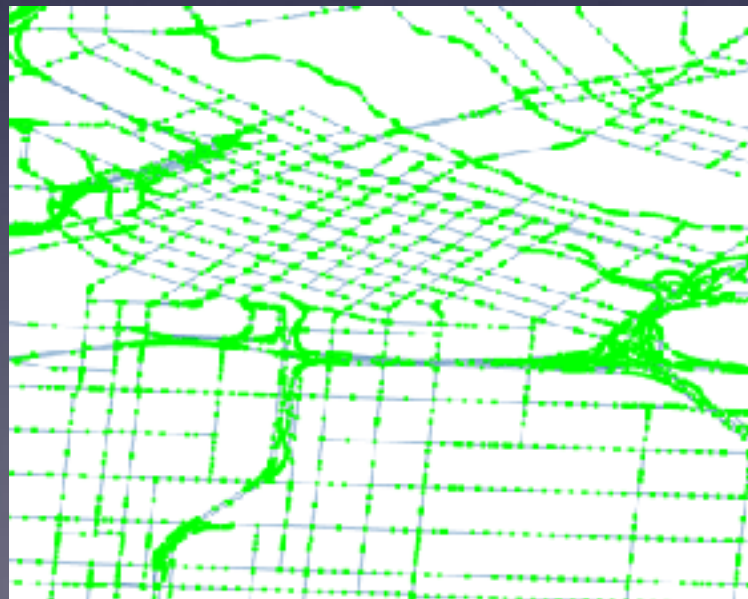


# BRIDGES Workshop

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*ACM SIGCSE 2019*

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# What is BRIDGES?

## External Data

GENIUS

IMDb

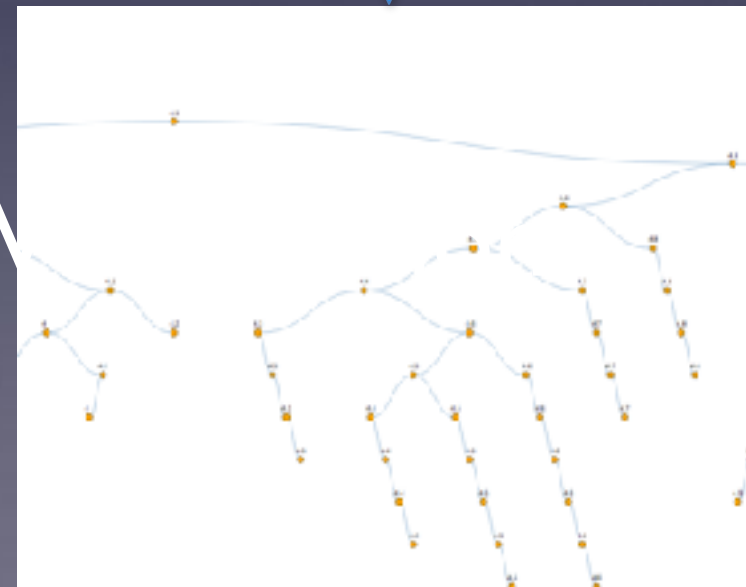
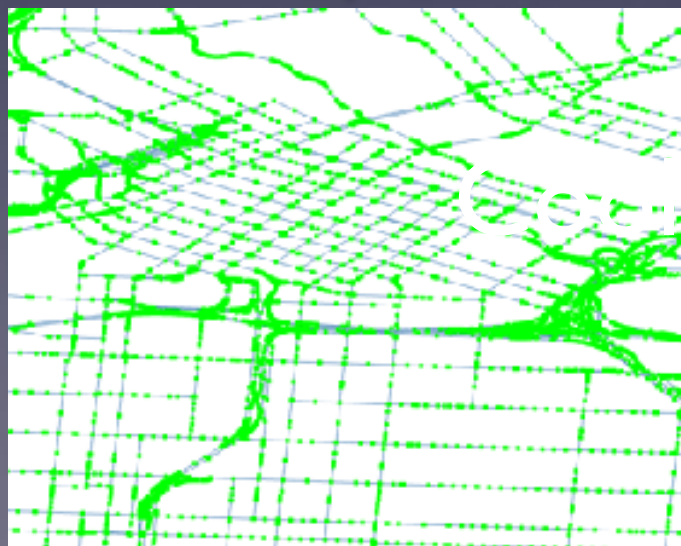


OpenStreetMap



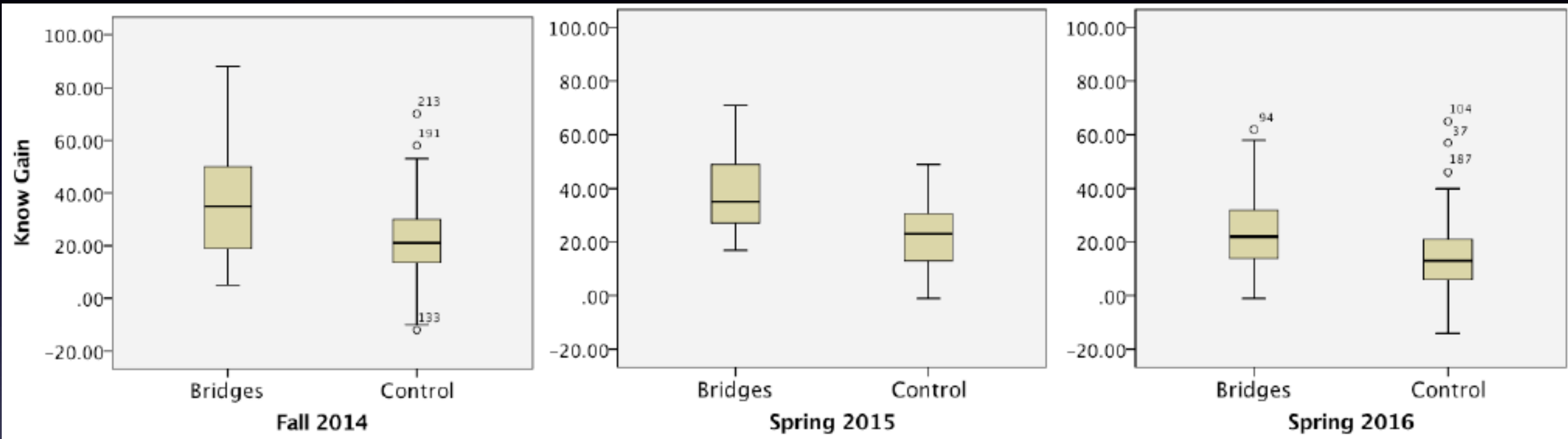
## Student Program

```
main () {  
  bridges <-- Create Bridges Object  
  obj_list <-- Get Data(data source)  
  ds <-- Build Data Structure (obj_list)  
  bridges.setDataStructure(ds)  
  bridges.visualize()  
}
```

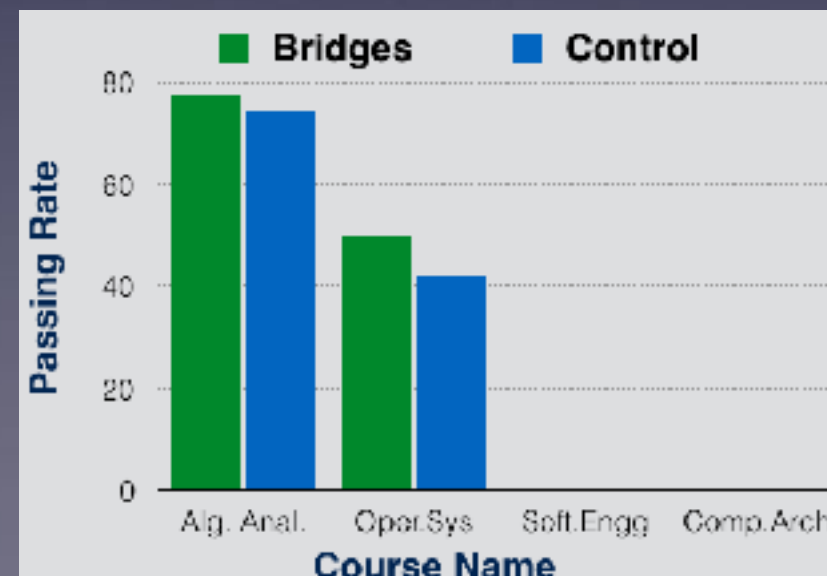
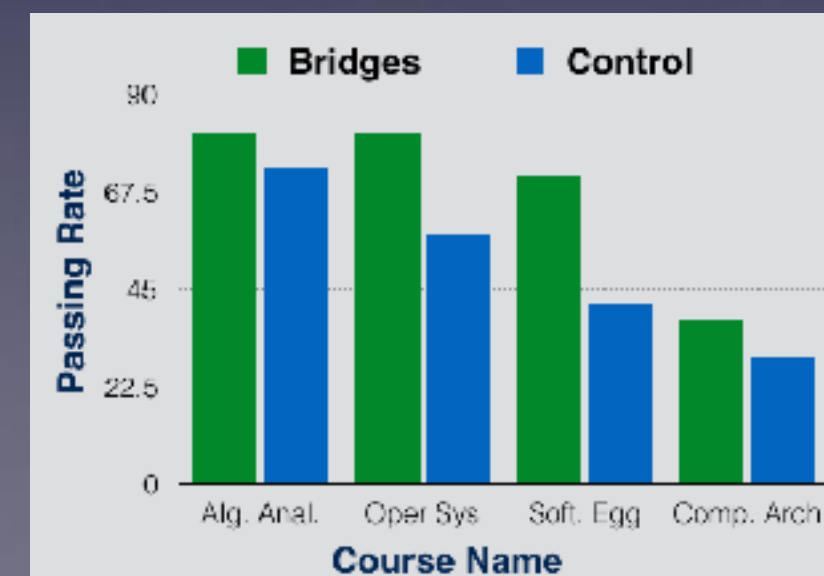


# BRIDGES Works! Eval. Results

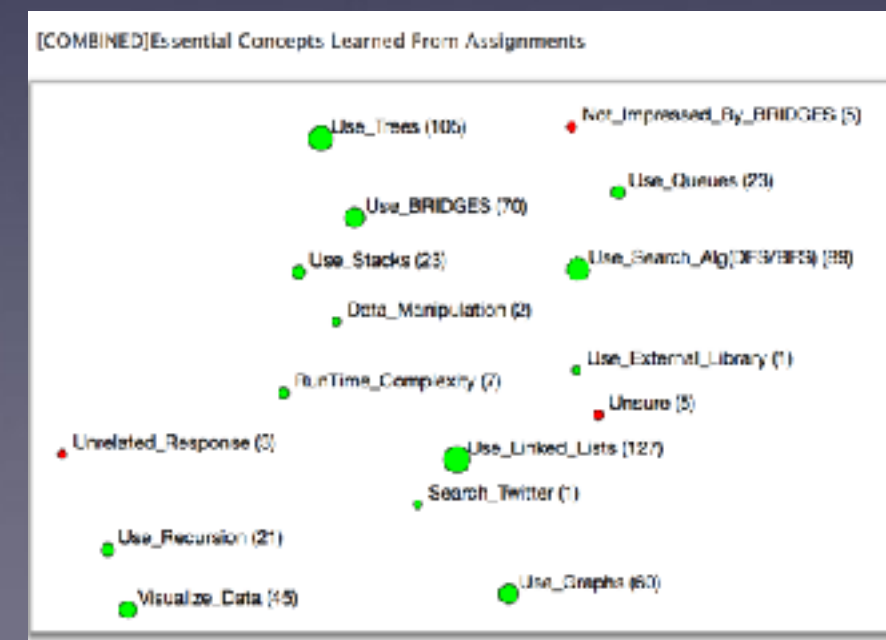
## Knowledge Gains



## Progression through the major



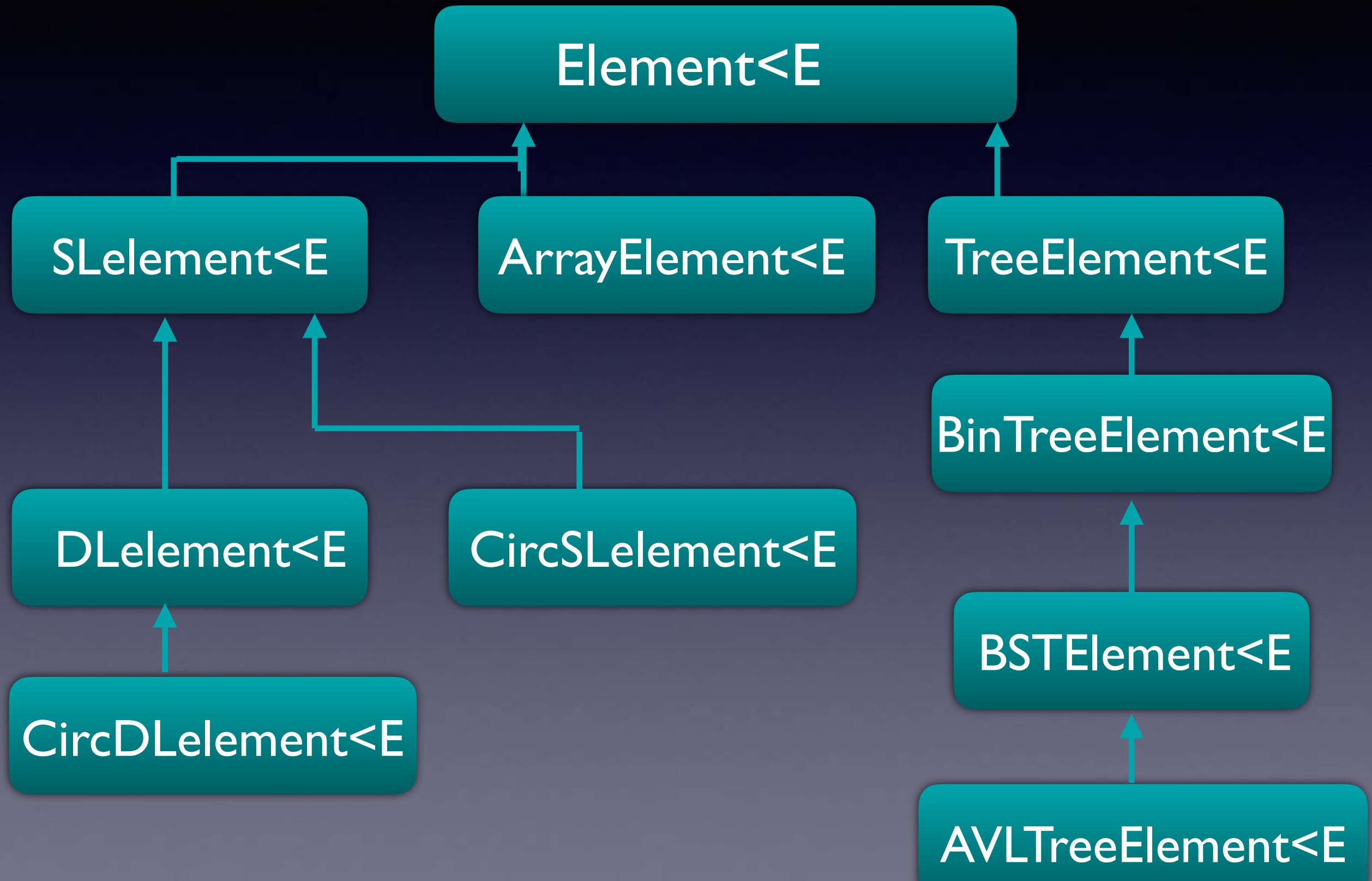
## Student Feedback



# BRIDGES Elements

**Supported data structures:** Arrays, lists, tree structures, graphs

**Language Bindings:** C++, Java, Python



# Project Participants/Contributors

## Investigators

Kalpathi Subramanian  
Jamie Payton  
Erik Saule  
Paula Goolkasian  
Robert Kosara  
Michael Youngblood

## Students

David Burlinson  
Stephen Macneil  
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Mihai Mehedint  
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Chris Grafer  
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Matthew Mcquaigue  
Anna Boekelheide  
Alec Goncharek  
Allie Beckman

**Funding:** NSF DUE-1245841 and DUE-1726809



# Workshop Overview

Time	Activity
<b>7.00-7.10</b>	<b>BRIDGES Overview</b>
<b>7.11-7.20</b>	<b>Participant Introductions, Goals</b>
<b>7.21-7.50</b>	<b>BRIDGES Setup, Simple Array Example</b>
<b>7.51-8.20</b>	<b>A Simple BRIDGES Project (Song Lyrics)</b>
<b>8.20-8.30</b>	<b>Coffee Break (Refreshments)</b>
<b>8.30-9.30</b>	<b>Complex BRIDGES Project : Open Street Map</b>
	<b>(Dijkstra Shortest Path - Minneapolis)</b>
<b>9.30-9.50</b>	<b>Q &amp; A + Discussion</b>
	<b>BRIDGES Participation - Opportunity</b>
<b>9.50-10.00</b>	<b>Surveys (SIGCSE, BRIDGES)</b>
<b>10.00</b>	<b>Adjourn, Followup with Presenters</b>

# BRIDGES Participation - Opportunity

- BRIDGES under active development (**new IUSE grant - to disseminate BRIDGES to external users!**)
- Need help in contributing and extending BRIDGES.
- Build up engaging assignments and data sources that also reinforce CS rigor.
- Use BRIDGES in the classroom, collect data and provide feedback; **stipends available**; all evaluation materials(surveys, pre/post tests) provided through online (Qualtrix). Alternately **TA support** can be provided.
- Full technical support provided, and interaction with Bridges community.