DLTI2
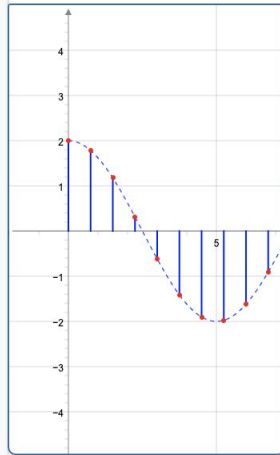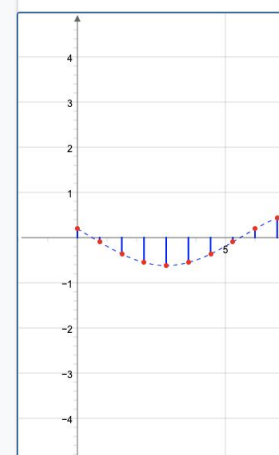
William Wu, Will Smith, Bandhan Patel

2 cos(0.2π)

Controller
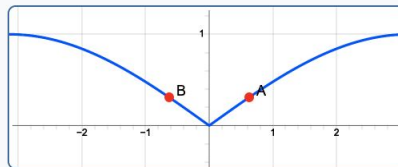
DCLevel: 0

Amplitude: 2

Frequency: 0.1

Phase: 0

0.618 cos(0.2π + 0.4π)

Frequency Response

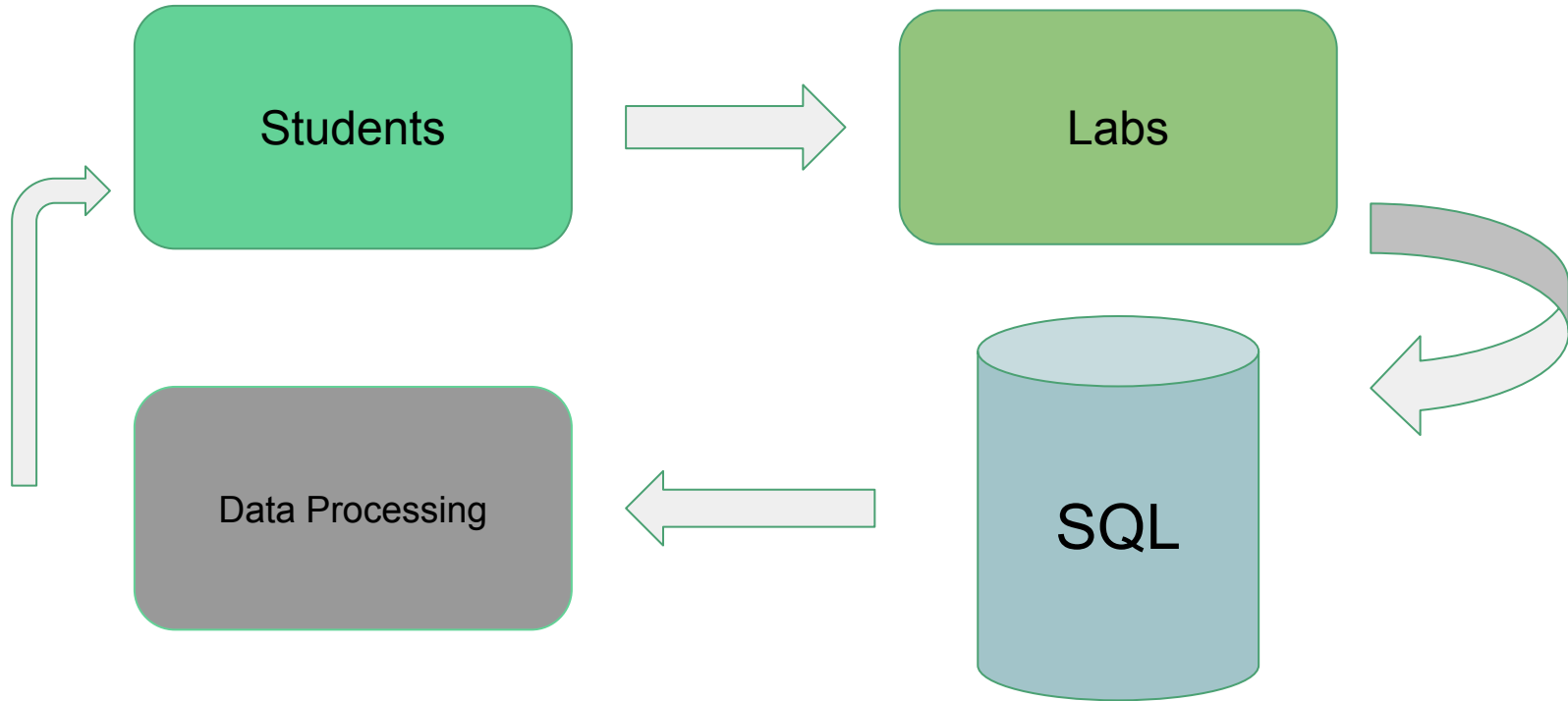First Difference

Mag First Difference

B

A

Phase First Difference
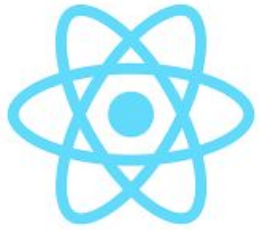
A

Post GUI State | Get GUI State

What's the problem?

- Unable to save states
- No database connection
- Unable to record student answers to a database
- Unable to grab states from database
- GUI doesn't update in real time
  - Slider <--> input, slider -> graph

What we want

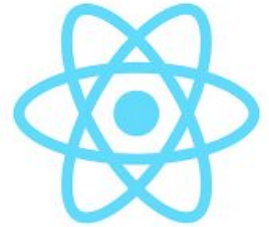# Tech Stack

Labor Division

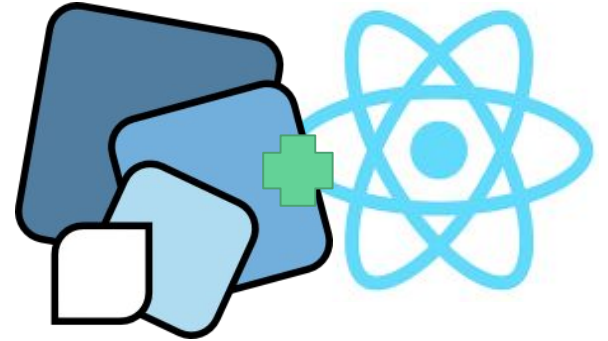Will - GUI, React

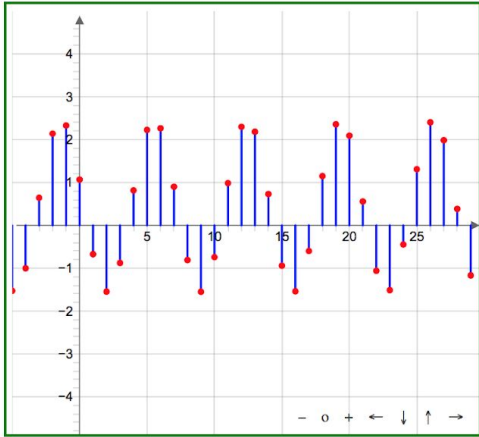William - SQL, Node/Express

Bandhan - SQL, CSS

Front end

Goal

Tools

Material-UI

LCT framework

Controls

First Difference ▾

Amplitude

2

Frequency (* 2pi)

0.91

Phase (* pi)

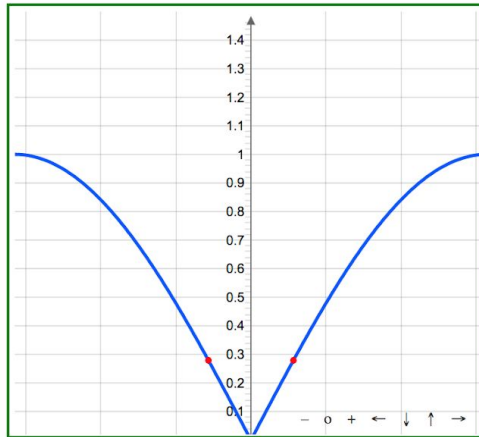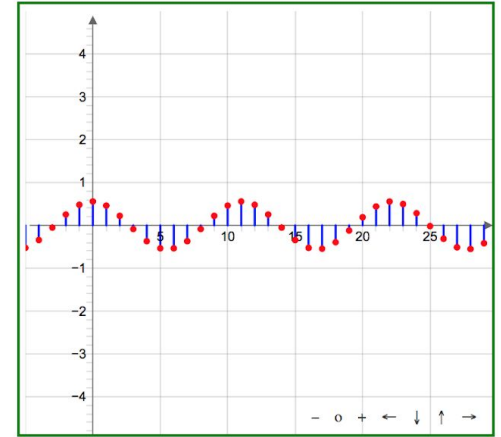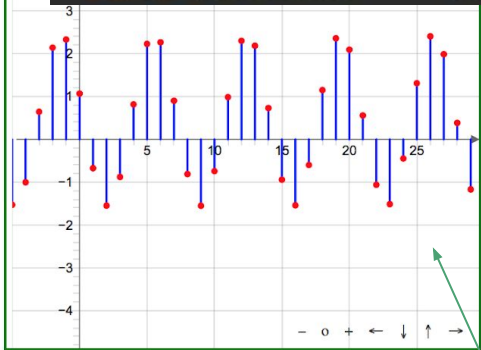0.4

DC Level

0.45
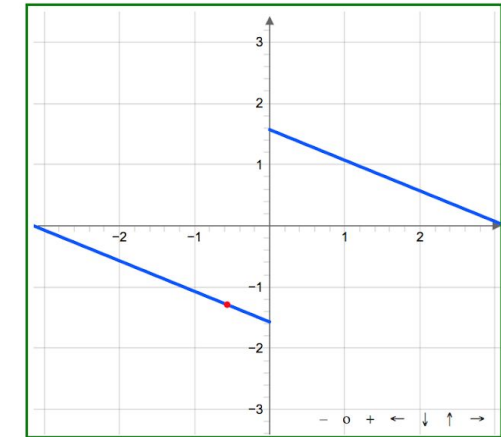
```
this.board = brd;
this.points = [];
this.stems = [];
```

Controls

First Difference ▾

Amplitude

2

Frequency (* 2pi)

0.91

Phase (* pi)

0.4

DC Level

0.45
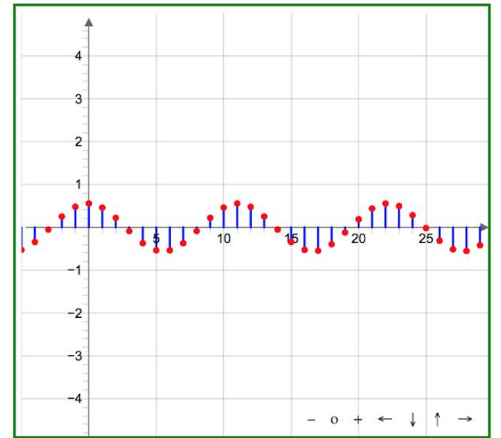
```
let arbitrary = (x) =>
    (Math.cos( x: this.state.freq * x+ this.state.phase * Math.PI)
        * this.state.amp + this.state.dc*1);
```

Submit [Student ID]

Get JSON list

Back end

Implementation

- MySQL Database
- Node.js/Express/Cors

```javascript
var con = mysql.createConnection({
  host: "localhost",
  user: "root",
  password: "password",
  database: 'labs',
});

con.connect(function(err) {
  if (err) throw err;
  console.log("Connected!");
});
```

Student_id	Lab_id	Question_number	Variable1	Variable2	Variable3	Variable4	Variable5
1234	1	1	2.11	0.79	0.45	0.22	1
1111	1	1	2.65	1	0.77	0.56	1
999	1	1	2.35	1	0.24	0	4

DEMO

Future Implementations

- Frontend additions
  - Mathjax and equations on top of the GUIs
  - Better UI
- Backend additions
  - Update tables with appropriate changes to fit all labs
  - Grab a state from the database
  - Fix backend bugs

Reflection

- Difficult switch from original DLTI to React template (took about 1/3 of semester)
- Challenges
  - Frontend: Lack of React experience
  - Backend: Starting from nothing, learning new tools (SQL, Node, etc.)
- Accomplishments
  - Code is in standard React template
  - DLTI lab demo is moving forward in terms of getting data/answers from students
  - Database implementation

THANK YOU

Questions?