

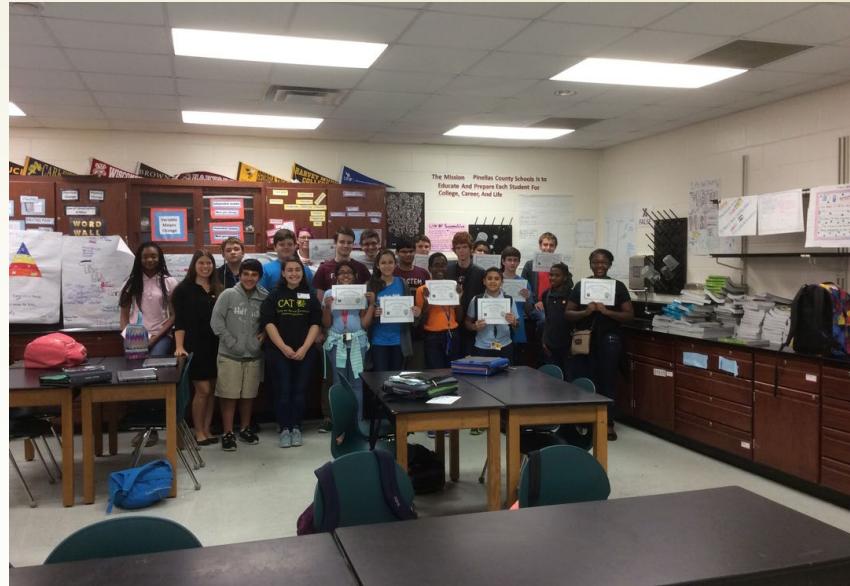
# STEM LINK

---

STEM Link Design Review

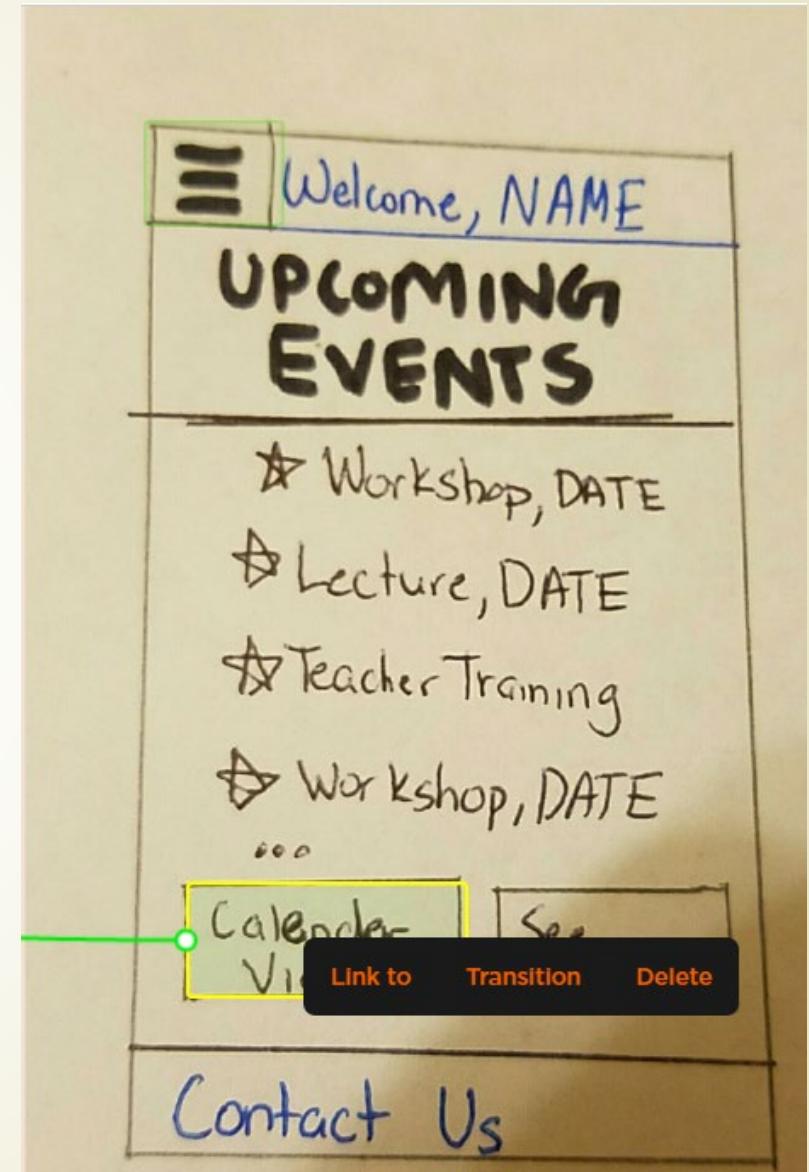
# Source of Inspiration

- ▶ All our team members could observe the STEM diversity gaps within our own STEM Classes
- ▶ In January of 2015, FLASTEM was created as an outreach program for low-income STEM students in Pinellas County
- ▶ After two years of workshops across the county, the lack of communication channels between STEM Teachers and mentors/volunteers became clear



# Designing STEM Link

- ▶ Our team used Paper Prototyping to design the UI and functionality of STEM Link
- ▶ Paper prototyping allowed us to sketch out the UI on paper and add limited functionality to the paper design
- ▶ From the POP app, we implemented the limited functionality paper prototype, the process of programming became sufficiently easier



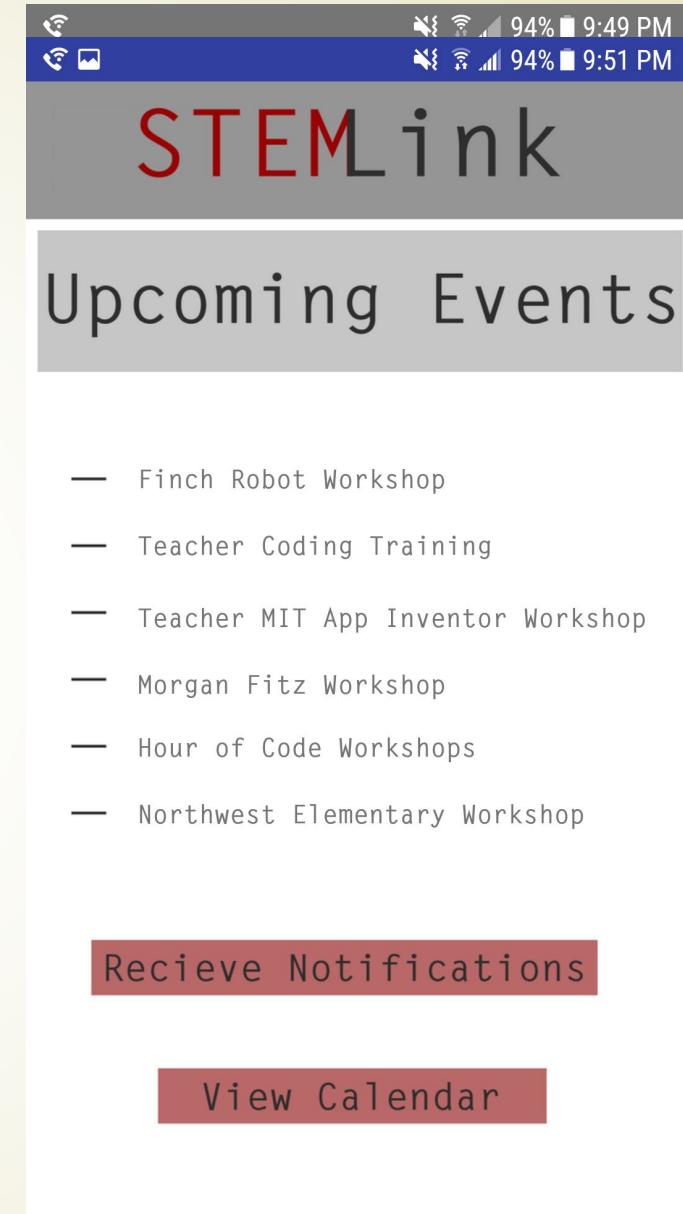
# Development Tools and Architecture

- ▶ We chose to develop STEM Link using Android Studio to target the Android platform.
- ▶ Android devices outnumber Apple and Windows and it is easier to extrapolate code between Android to Apple than vice versa
- ▶ STEM Link is ordered by a compilation of “Activities” within Android Studio- each Activity has a GUI and back-end programming
- ▶ The initial UI was designed using Photoshop and was pure static images.
- ▶ The front-end was designed initially leaving the back-end database integration for early 2017. We used Google Firebase as our back-end database for convenience and reliability





Revamped/Dynamic UI



Static Photoshop UI

# Marketing & Testing STEM Link

- ▶ No competition for our product within Pinellas County currently
- ▶ Our connections through FLASTEM helped us market and gain support for the product through workshops and demonstrations
- ▶ Customer Surveys and beta testing were conducted among the targeted audiences- STEM teachers, students, and mentors- to receive feedback and potential marketing strategies
- ▶ Our recent HackPCS workshop and hackathon were prime events for testing and receiving feedback on the beta version of the app.

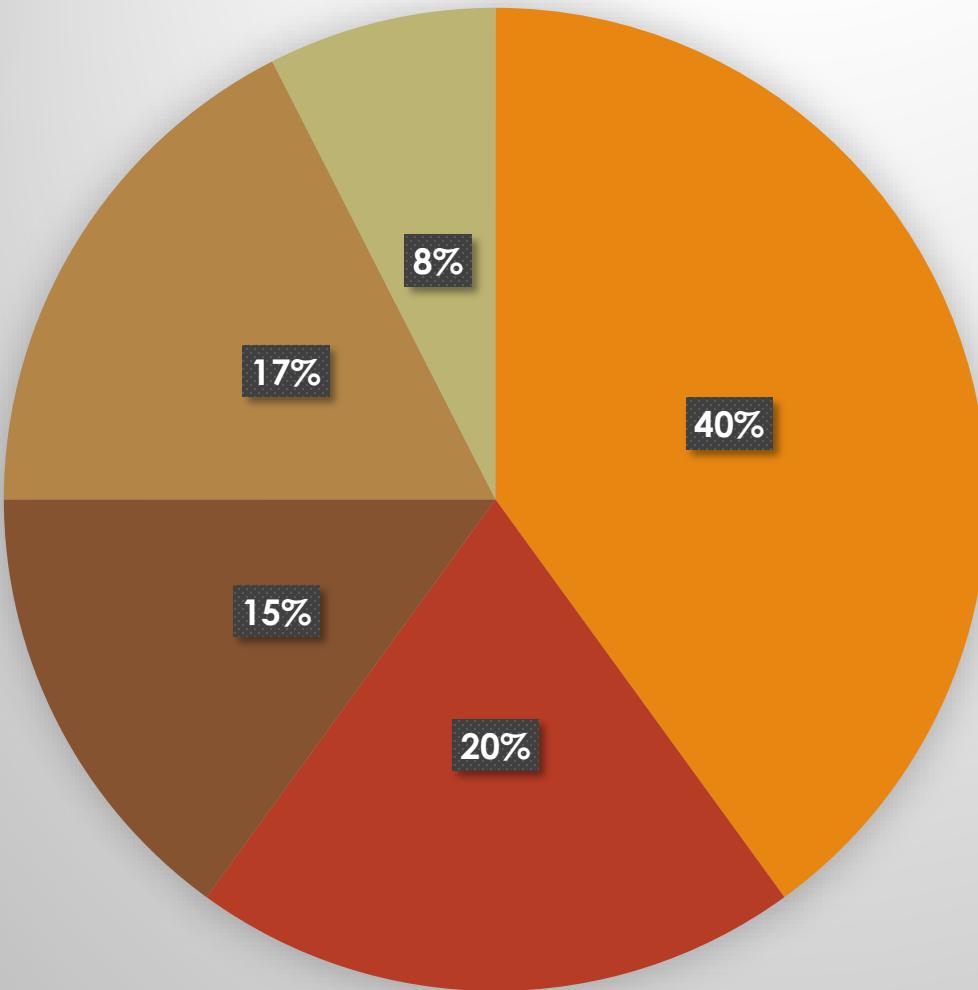


## For Teachers:

1. How many students do you have within your STEM classes/extracurricular STEM program?
2. How often do you struggle with teaching STEM concepts because you yourself don't have a full grasp of the material?
  - a. Are these STEM Concepts related to technology? Ex. Programming, robotics, etc
  - b. Do you have volunteers and mentors who help you?
3. Would you like to have a program that allows easy communication with STEM mentors and volunteers in the local area?
  - a. What platform would you want the program on? (ex. Mobile, website, desktop program, etc)
  - b. Which platform do you think your students would want it on?
4. What features would you want the most within this program?
5. How often do you think you would use a program like the one previously described?
6. Do you believe you could enhance the quality of STEM Education by creating a collaborative STEM network between students, teachers, and mentors/volunteers?



## Teacher Responses



- Teacher/Mentor Communication
- Resources
- STEM Events
- Videos/Streams
- Purchasing Kits



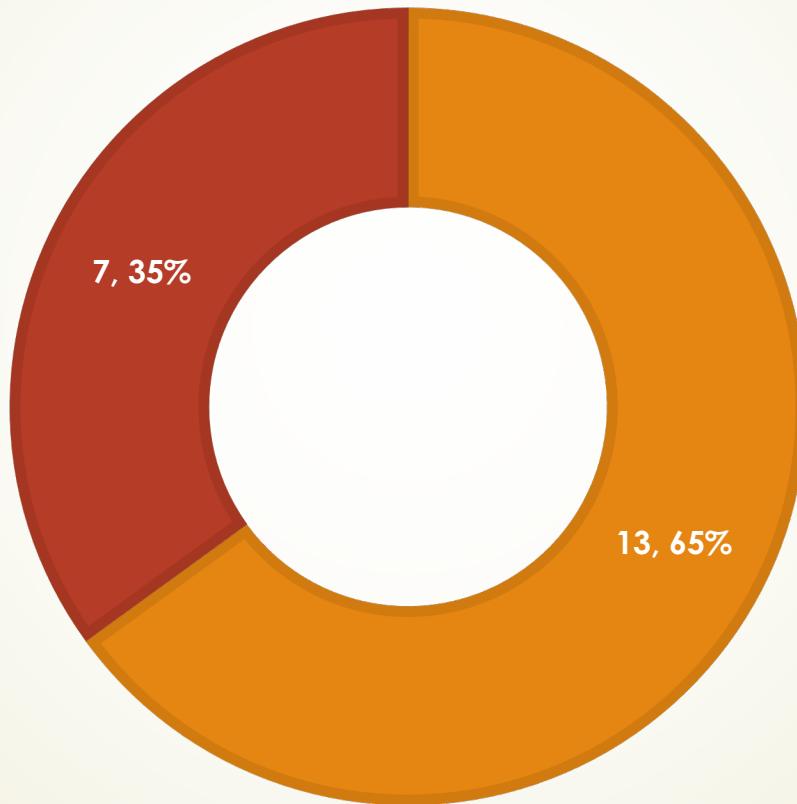
### **For Mentors/Volunteers:**

- 1. Do you currently have access to contact/volunteer with local STEM Teachers/activities?**
  - a. If not, would you like to have access?**
- 2. Would you download a mobile application that allows you to safely and efficiently communicate with STEM teachers and educators?**
- 3. Would you be willing to download an application that contains a teacher/mentor marketplace where you could volunteer monetary contributions or volunteering hours?**
- 4. What types of resources would you like added to improve your STEM knowledge?**
- 5. Do you know any of your peers who are interested in volunteering/mentoring at local schools, but are unable to establish communications with the school?**



## MENTOR RESPONSES

■ Yes ■ No



# STEM Link Challenges

- ▶ Rendering the high quality images from Photoshop within the native Android phone involved high processor usage and was not optimal for lower-end Android phones
- ▶ Transition from VOLE to STEM Link occupied sufficient amount of time and little tangible progress was made in relation to the overall project
- ▶ Upgrading Marketplace to ensure safety and efficiency for all users
- ▶ Documentation was initially viewed as a handicap and treated with discontent





# STEM Link Future

1

Finalizing database  
testing and ensuring  
validity of user data

2

Video  
Steaming/Storage  
functionality within  
app for remote users

3

Expanding STEM Link  
into a software model  
that can be used for  
any topic/interest