



FAMU-FSU COLLEGE OF ENGINEERING

ECE Information Kiosk Spring Presentation 1

Team 2 (EE), Team 26 (ME)

Our Team



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Lead ME



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Lead EE



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Lead CpE



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Our Team



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Design ME



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Computer Science



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Computer Science



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Lead IME

Fall Recap

- Scope
 - Provide a way to make information readily available for students, faculty, and visitors
 - Create fun interactive infotainment center
 - Location
 - Feedback from targeted end users

Fall Recap

- Lay out
- Mounting Plan
- Accessibility

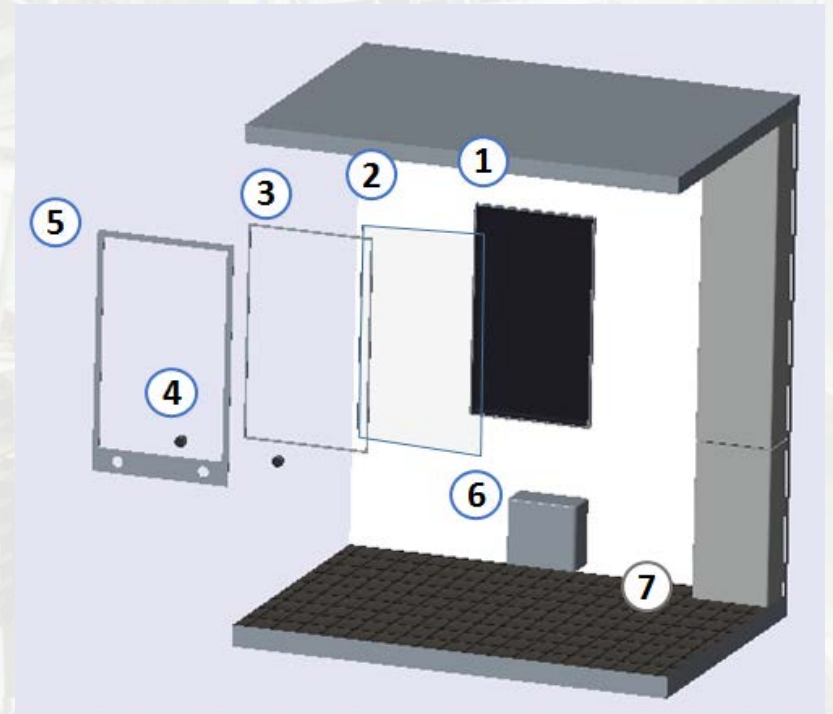


Illustration 1. Initial Kiosk set-up

Current Events

- Components
 - Purchased interactive elements
- Mounting
 - Revision coinciding with budget constraints based on construction
 - Utilizing free machine shop services for redesign
- Programming
 - Currently in progress

Initial Budget

- Overlay - \$1,100 (Orange)
- Monitor/TV - \$450 (Blue)
- Wall Mounting - \$500 (Purple)
- Computer/
Any other unexpected costs - \$450 (Green)

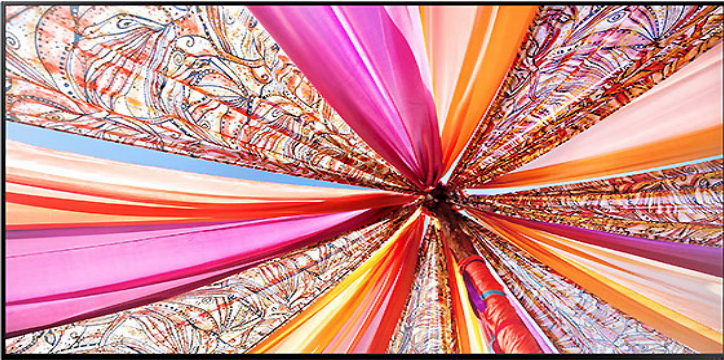


TSITouch IR Overlay

- IR Technology
- Protection
- Reliable Vendor
- Model specific design



DB55E Samsung LED TV



- 55" Screen
- Commercial Display
- Visual Ergonomics



| | 500 | | | 1500 | | | 2500

Updated Budget

Android TV Box



Wall Support



Metal Frame



Applying Ergonomics [Problem]

INITIAL CHALLENGE??

Critical Components

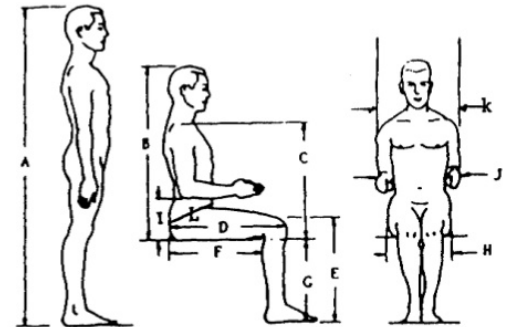


Height positioned
Reach positioned

Eye-Sight

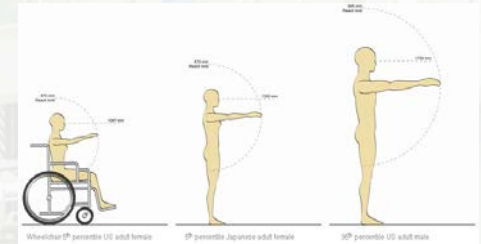
Anthropometric Data and Analysis

32nd batch



Ergonomics Assignment

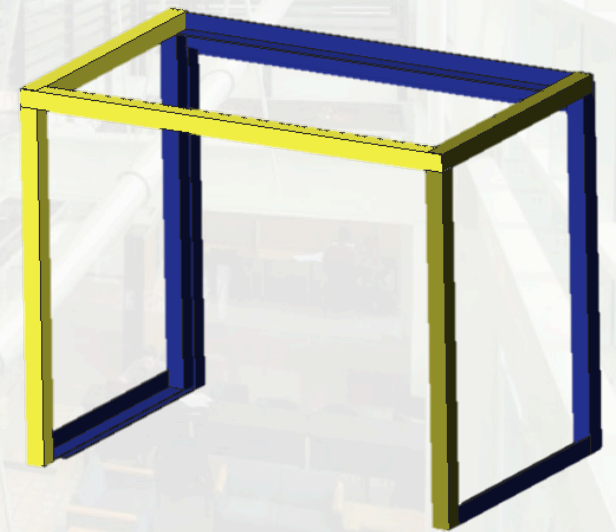
Steps for an Ergonomic Fit [Solution]



- 1) Consider relevant populations. Students, ages 18-29
- 2) Define key dimensions with the critical components
- 3) Determine boundary measurements
- 4) Compare dimensions with existing real world products
- 5) Apply dimensions and refine details as needed
 - **Final Solution: Tilt-adjustable and ADA compliant kiosk**

Alcove Frame

- Designed for ADA requirements
- Allows interchangeable fascia
 - Plates fasten lateral panels to frame
 - Channel fastens surface panel
- Blue anchored to the wall
- Yellow hardware attached to blue



Touchscreen Cabinet

- Anchored to wall above alcove frame
- Touchscreen mounted to “tailgate”-style frame for maintenance
 - Pulley system for soft descent
- Tilt incorporated into tailgate frame
- Lock hardware needs to be designed

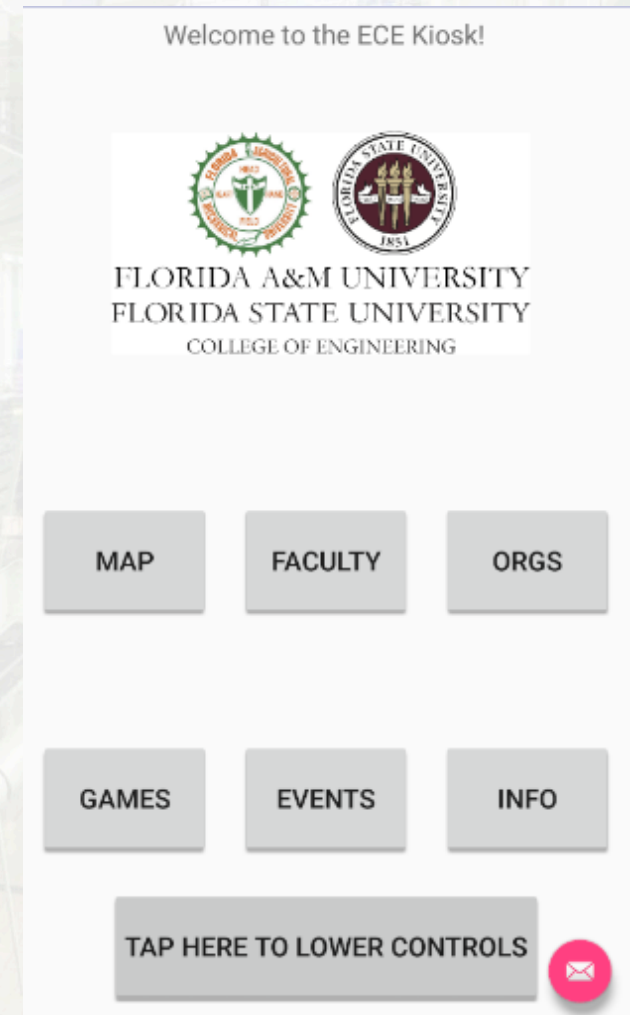
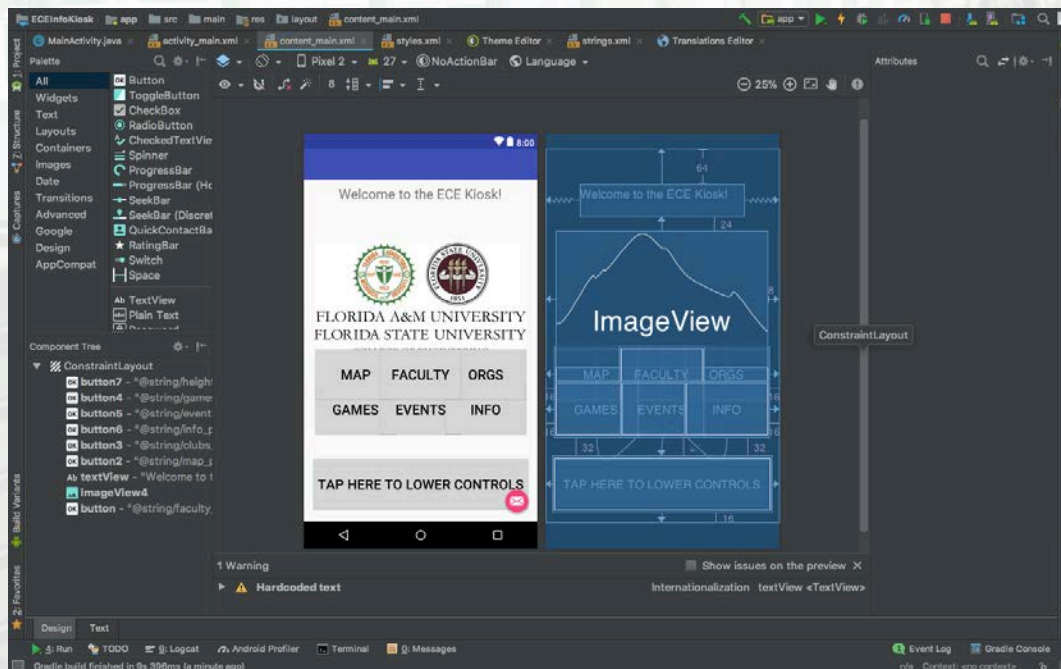


Software Development

- Purchased TX 3 mini
 - Android TV box
 - Similar architecture to Amazon Fire TV
 - Perfect for displaying app
- IR Overlay
 - Install simple driver on computer to enable touch
- New website will be online soon
 - Will be able to install Drupal API and begin to bring website content into app

User Interface

- Laying down the basics of the UI
 - Allow for moveable controls



Games & Rewards

- Trivia
 - Get to know the professors
 - Heads of departments
 - Fun facts
- Scavenger hunt
 - Locations
 - Get codes from different office locations
- CMS open to print quota rewards
- Tetris

Comparison

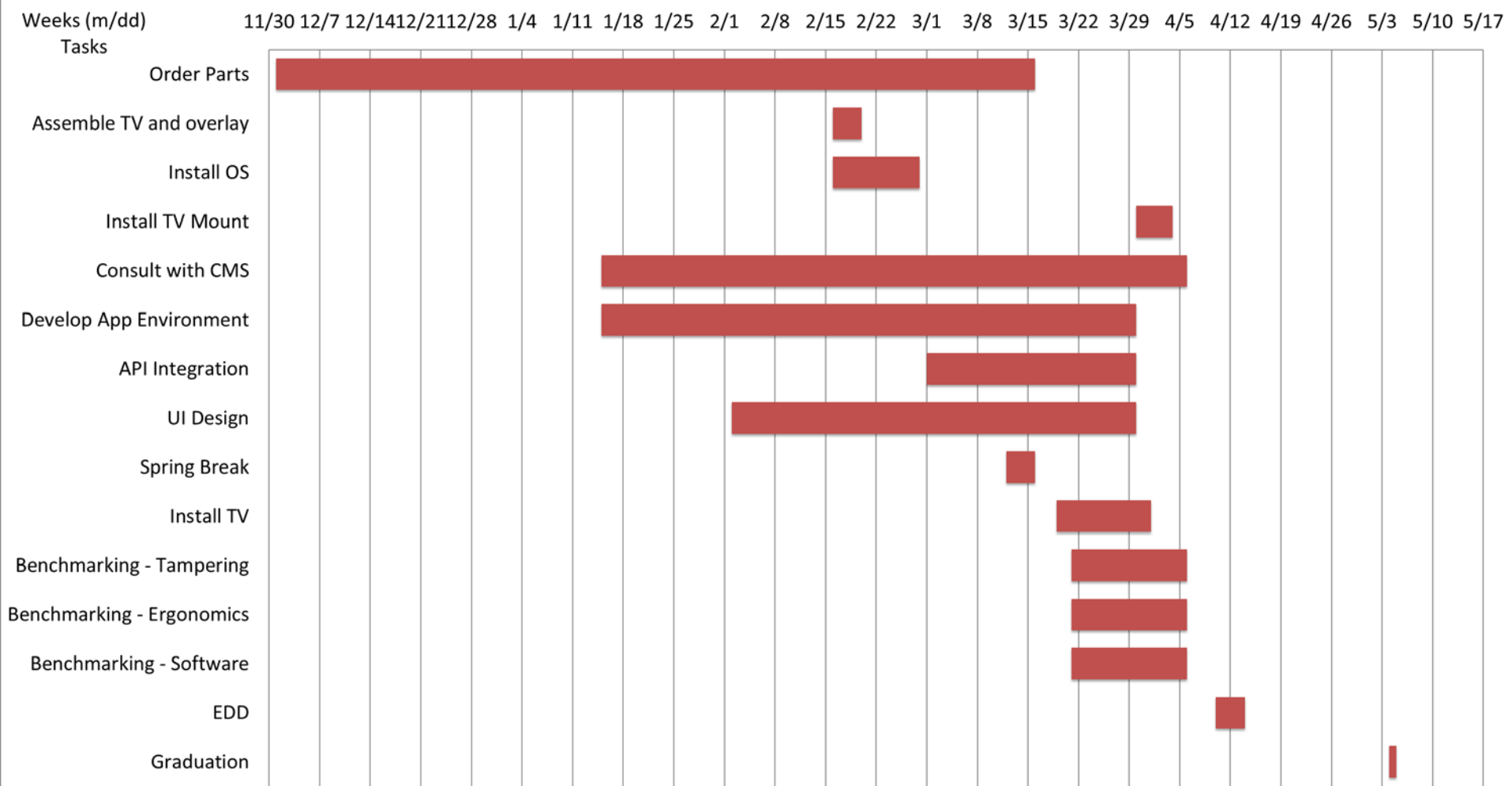
Fall 2017	Spring 2018
55" TV (4K) + Capacitive Overlay	55" TV (1080p) + IR Overlay
Wall build-out for flush mounting	Alcove-style "desk" Frame
Android App + HTML + CSS	Android App + HTML + CSS
Windows 10 w/ Android Emulation	Native Android OS
Games	"Guess the Faculty"
Calendar System	Looking at options
Interactive Maps	OpenGL ES 2.0
TV mount for protrusion	TV mount for protrusion and angle

Project Expectations

- Wall-mounted TV w/ touchscreen display
 - Protruding >8" from wall w/ surface
 - Compliant with ADA Standards
 - Wheelchair accessibility
 - Visually Impaired individuals with walking canes
- Operating System: Android OS
 - Physical Android hardware
- App with interactive elements that communicates with COE website through an API (Application Programming Interface)
 - Will include: Maps, faculty profiles, organization pages, games, events, general info of the college and accessible controls

Gantt Chart Update

ECE Information Kiosk Gantt Chart Spring 2018



Pictures



Brian Baker



Questions?