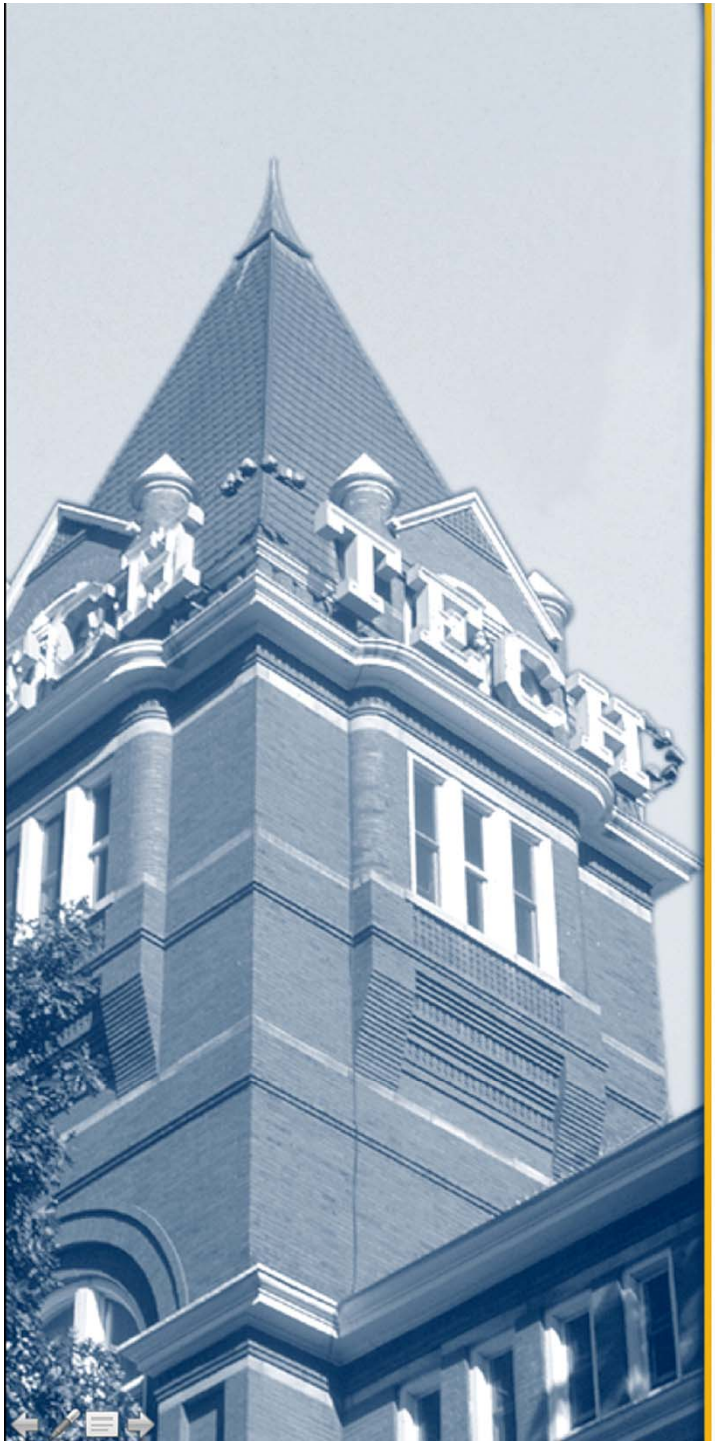


Pokémon Card Coliseum

Nanley Chery

Cameron Lewis

Pratima Narlajarla

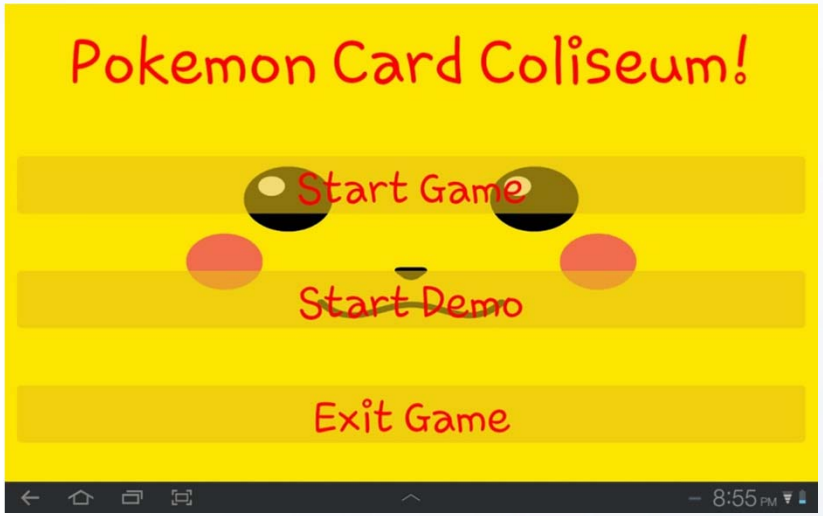
Catherine Runyan

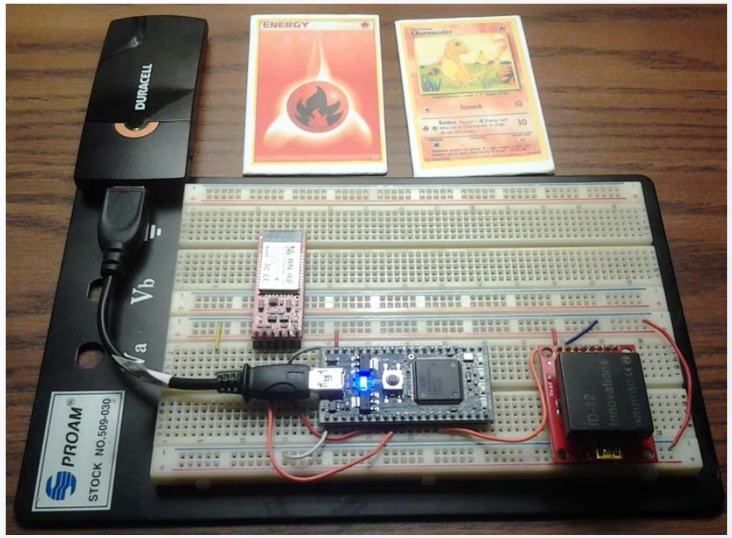
Wes Swinson

Georgia Institute of Technology

Presentation Overview

- Pokémon TCG Overview
- Project Design
  - Hardware
  - Software
- Design Analysis
  - Advantages/Disadvantages
  - Market
  - Cost
- Schedule
- Summary





Trading Card Objectives

- Object of the Game:
  - Collect prize cards
  - Defeat enemy Pokémon
- You lose if…
  - No more cards in deck
  - All Pokémon defeated

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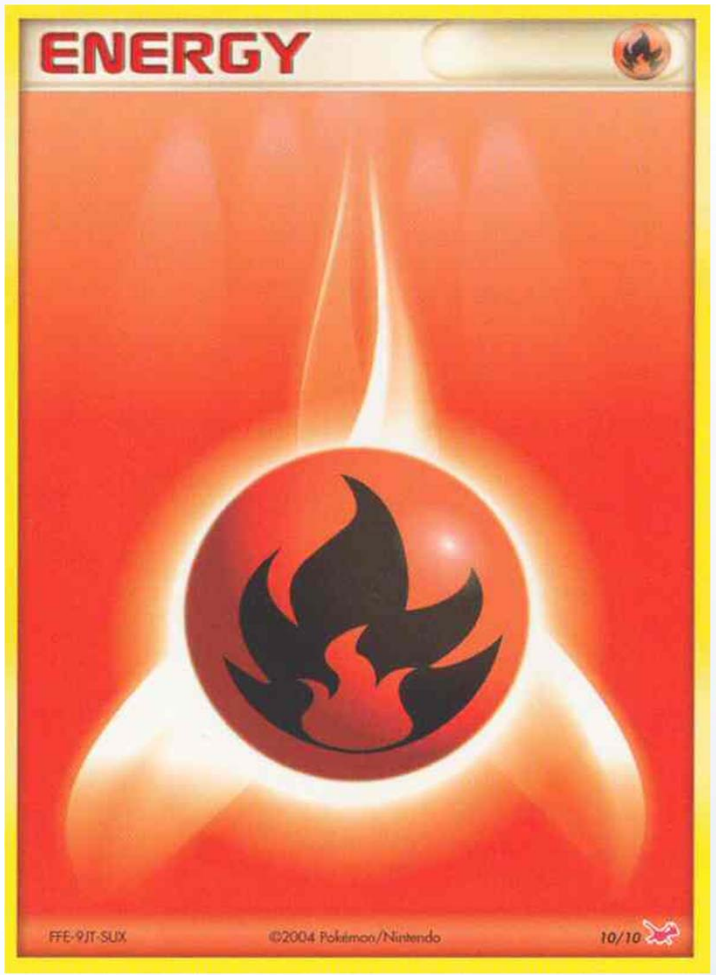
The Pokémon Card



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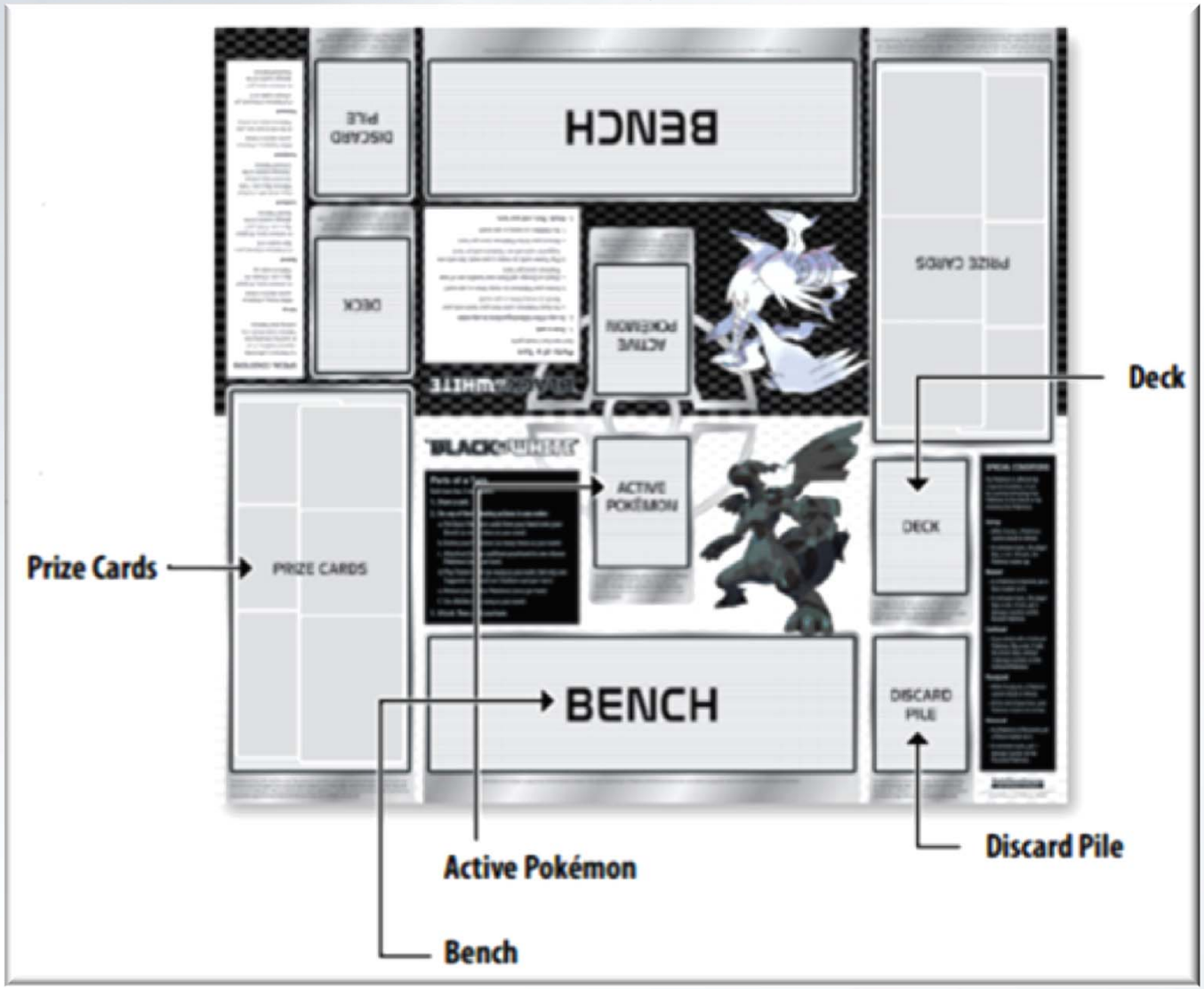
Zones of the Pokémon TCG



Typical TCG Setup

Design Prototype

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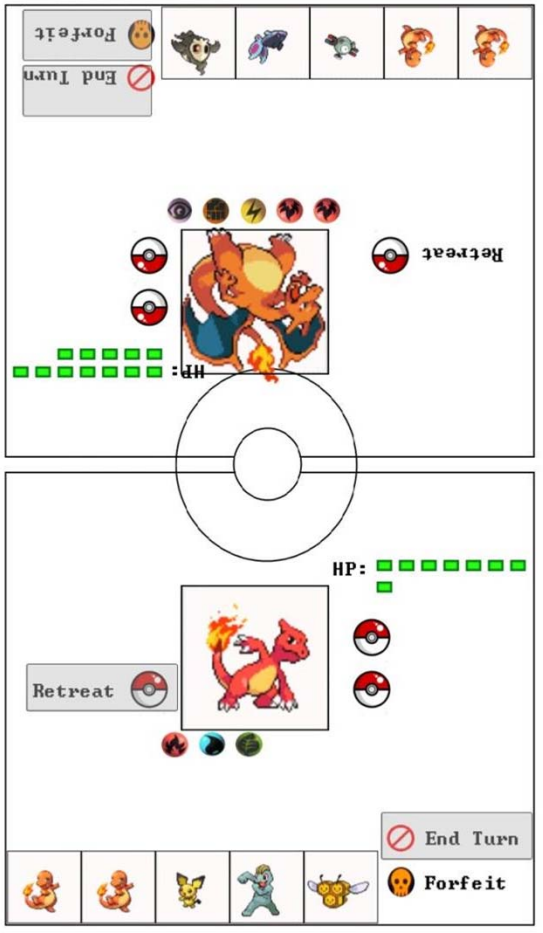
Project Features

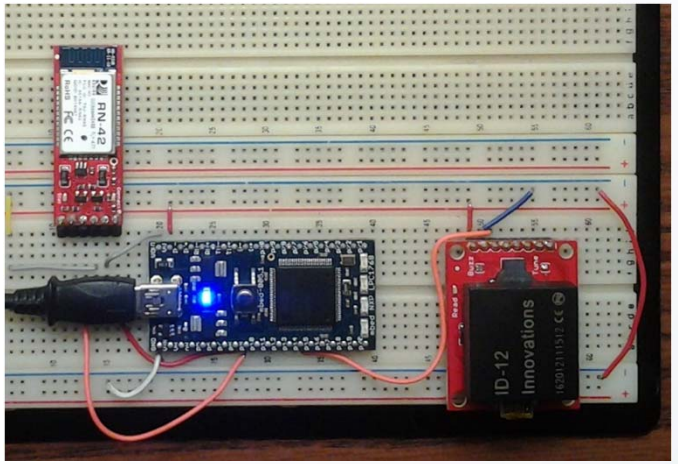
- Exciting and immersive user experience
- Reduces physical clutter
- Feedback to players

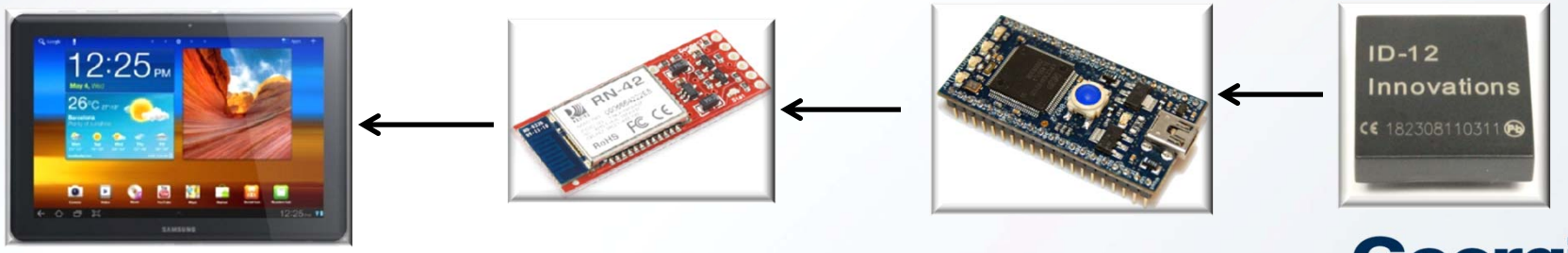


Hardware Design Schematic

Major components:

- Samsung Galaxy Tab 10.1
- BlueSMiRF Bluetooth Modem
- LPC1768 Mbed Microcontroller
- ID-12 RFID Reader





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Hardware Design

- RFID Reader (125kHz)
  - Detects RFID tags (2-5 inch range)

- Mbed Microcontroller
  - Provides connection between Reader and Bluetooth module
  - Powers through a rechargeable 5V Battery

- Bluetooth Modem
  - Passes the serial stream of bits to the tablet

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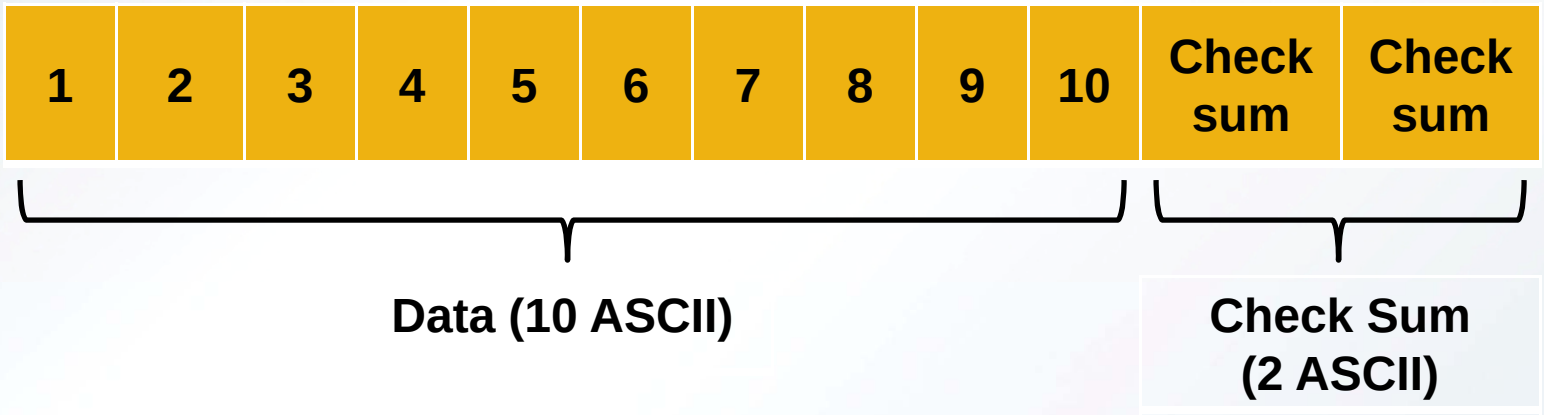
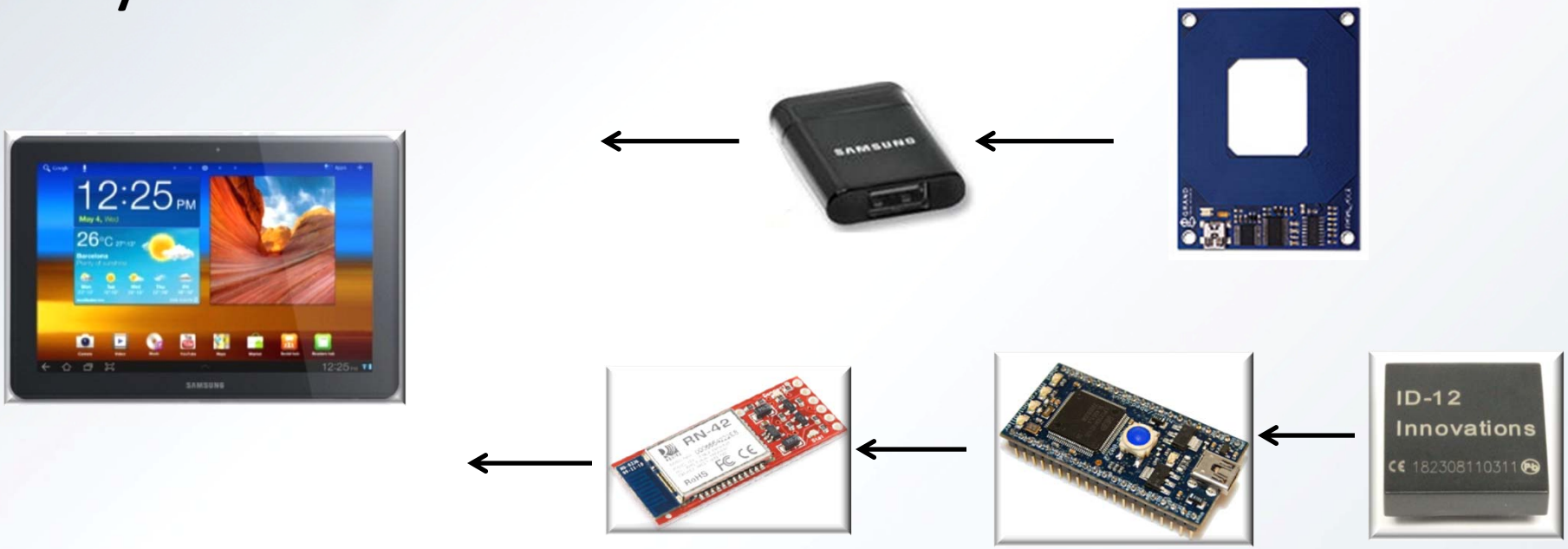
Hardware Design (cont.)

- Communication Protocol
  - Software app to reads data stream via Bluetooth
  - Transmits unique 10 digit ID (12 byte ASCII string)



Hardware Design Issues

- FTDI drivers for the Parallax RFID reader were incompatible with the operating system of the tablet



Software Design Platform

- Development Platform:
  - Java 1.6
  - Android 3.2 SDK (13 API)
  - Eclipse + EGit plugin

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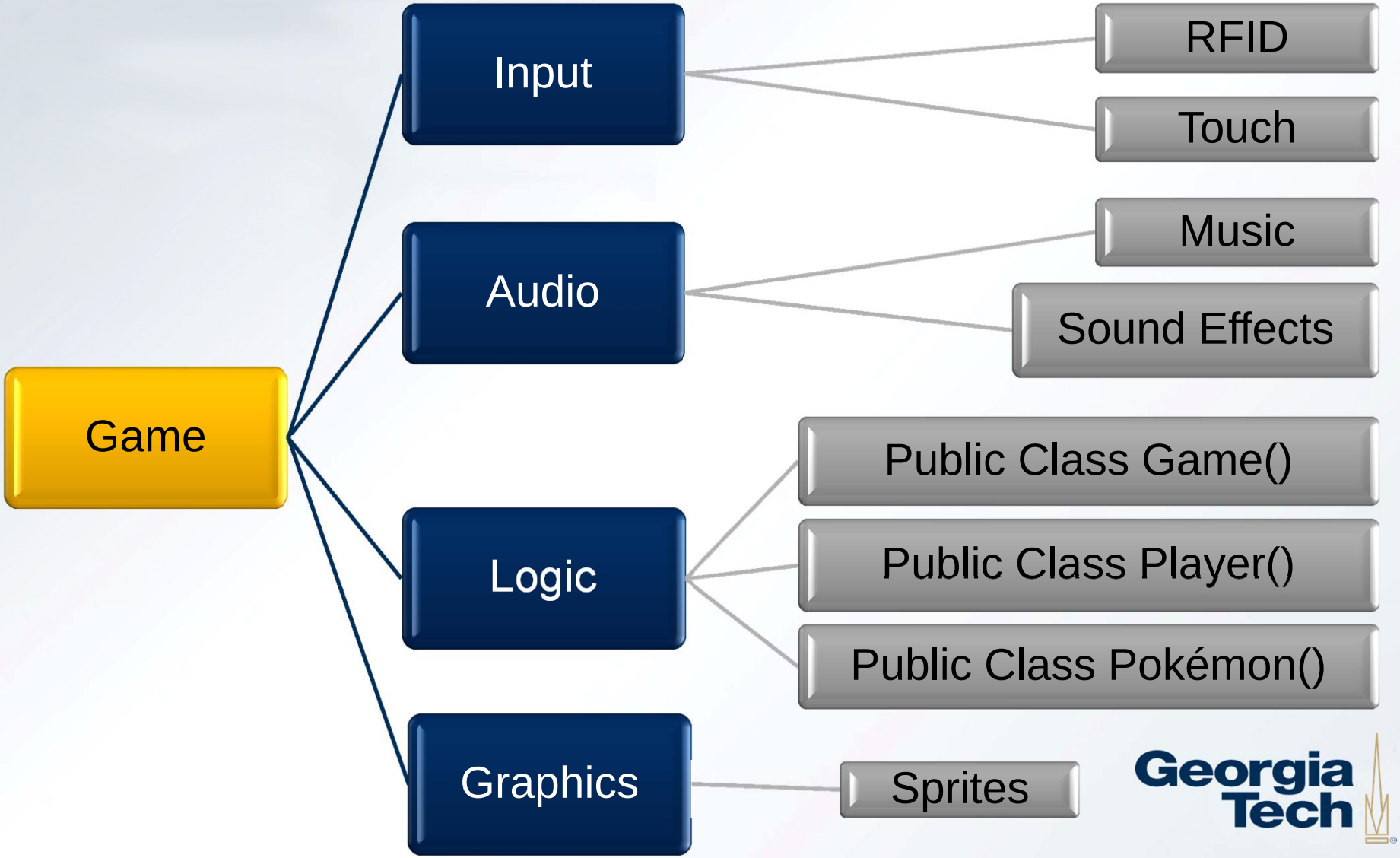
Software Logic Design

- RFIDListener
  - Receives tag and generates card object
- Main Game Loop
  - Handles events and game states
- Renderer
  - Updates screen based on game state

Software Media Design

- Background music and visual elements
- Pokemon sprite & sound displayed via indexing

Software Design Schematic



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Software Design Issues

- Can’t rotate standard Android dialogs

Design Advantages and Disadvantages

Advantages

- Eliminates extra pieces and cards
- Teaches game rules
- Builds on existing consumer base
- Integrates upcoming technology

Disadvantages

- Can’t use with existing Pokémon cards
- Android platform only
- More expensive than original design

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Market Analysis

- Targets children ages 6-18
  …who want to be Pokémon masters
- Pokémon Card Coliseum's success will hinge on:

- Creating new experience
- Catering to existing users
- Improving gameplay

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Cost Analysis: Prototype Development

Equipment

Included in Final Design		Not Included in Final Design	
Item	**Cost**	**Item**	**Cost**
Samsung Galaxy Tablet*	$400.00	USB to 30-pin Converter	$13.99
ID-12 RFID Reader	$29.95	Parallax RFID Reader	$39.99
Mbed Microcontroller	$59.00		
BlueSMiRF Bluetooth Modem	$39.95		
RFID Tags (55tags*$0.50)	$27.50		
Pokemon Mat	$11.99		
Rechargable 5V Battery	$25.99		
(* not included) **Subtotal**	$194.38		
(* included) **Subtotal**	$788.76	**Subtotal**	$53.98

Personel

Job Description	Number	Project Duration	Hours Worked per Week	Salary	Design Cost
Hardware Engineer	2	15 weeks	10	$50,000	$750
Software Engineer	3	15 weeks	10	$50,000	$11,250
				Subtotal	$12,000

Totals

Equipment	$842.74 *	$248.36
Personel	$12,000.00	$12,000.00
Total	$12,843 *	$12,248

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Cost Analysis: Production

Pokémon Card Colesium Tablet Extension

Part		Current Market Cost	Expected Production Cost
ID-12 RFID Reader	x1	$29.95	$8.00
Mbed Microcontroller	x1	$59.00	$20.00
BlueSMiRF Bluetooth Modem	x1	$39.95	$13.00
Pokemon Mat	x1	$11.99	$2.00
Rechargable 5V Battery	x1	$25.99	$7.00
	Total	$166.88	$50.00

Pokémon Card Colesium RFID Pokémon Cards

Description	Non-RFID		RFID	
	Estimated Production Cost	Market Price	Estimated Production Cost	Market Price
Single Card	$0.02	$0.20	$0.10	$0.25
60 Card Deck	$2.20	$12.99	$7.20	$15.99
	Profit per Deck	$10.79	**Profit per Deck**	$8.79

Cost Analysis: Summary

Summary

	Year 1	Year 2	Year 3	Year 4
Total Cost Per Year	$1,100,000	$2,750,000	$1,925,000	$275,000
Overhead (150%)	$1,650,000	$4,125,000	$2,887,500	$412,500
Adjusted Cost	$2,750,000	$6,875,000	$4,812,500	$687,500
Adjusted Cost Per Unit	$137.50	$137.50	$137.50	$137.50
Total Profit Per Year	($50,000)	$375,000	$437,500	$37,500
Profit Per Unit	($2.50)	$7.50	$12.50	$7.50

Total Profit	**$800,000**

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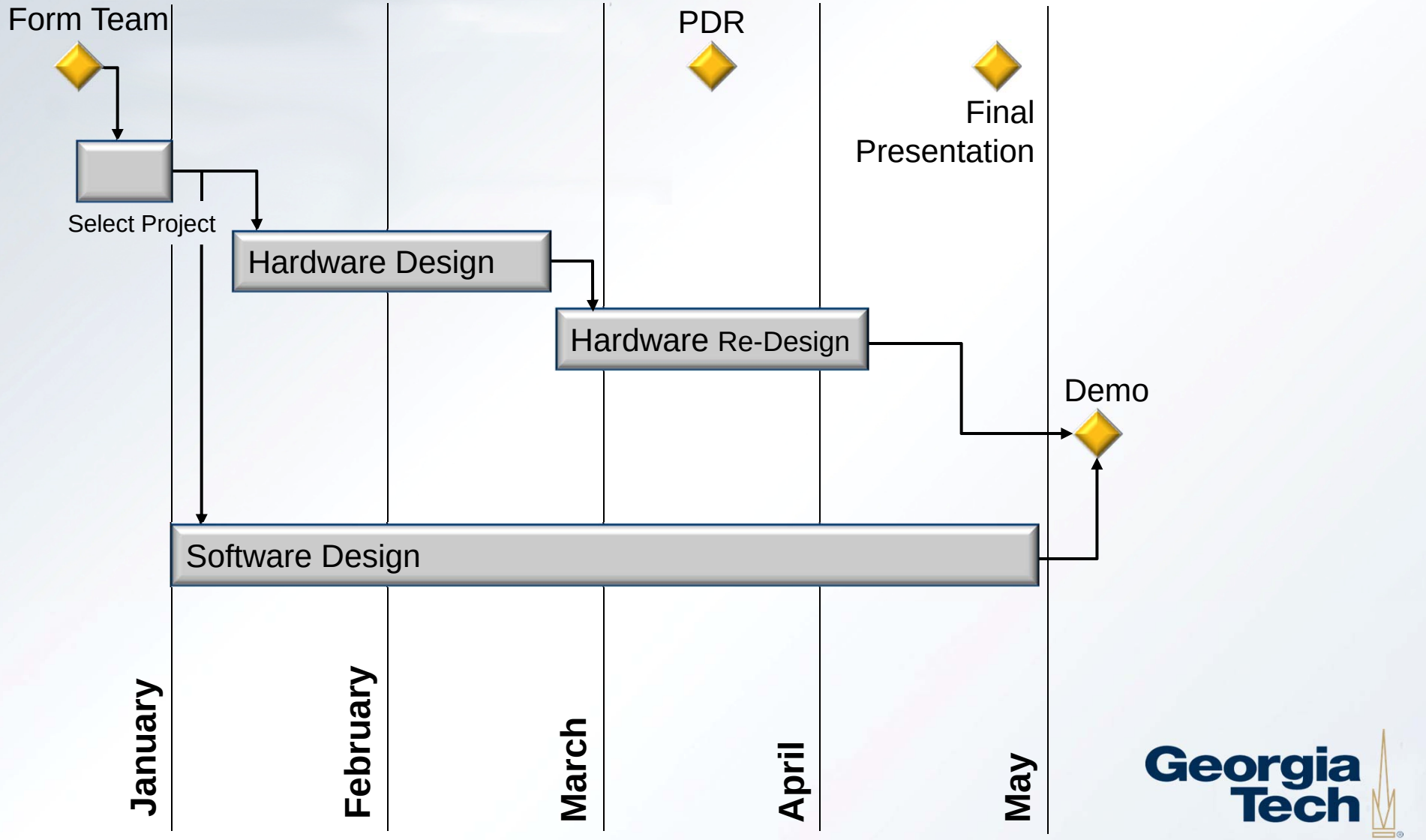
Project Schedule



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Design Analysis

- **Hardware complete**
  - Bluetooth functional
  - RFID Reader functional, sends RFID tags to Bluetooth device via a microcontroller
- **Hard/Software Interfacing complete**
  - Software successfully interacts with Bluetooth and reads RFID tags
- **Software Approaching Completion**
  - Software structure/design finalized
  - Pokemon/RFID/Input code completed
  - Game logic code still in progress

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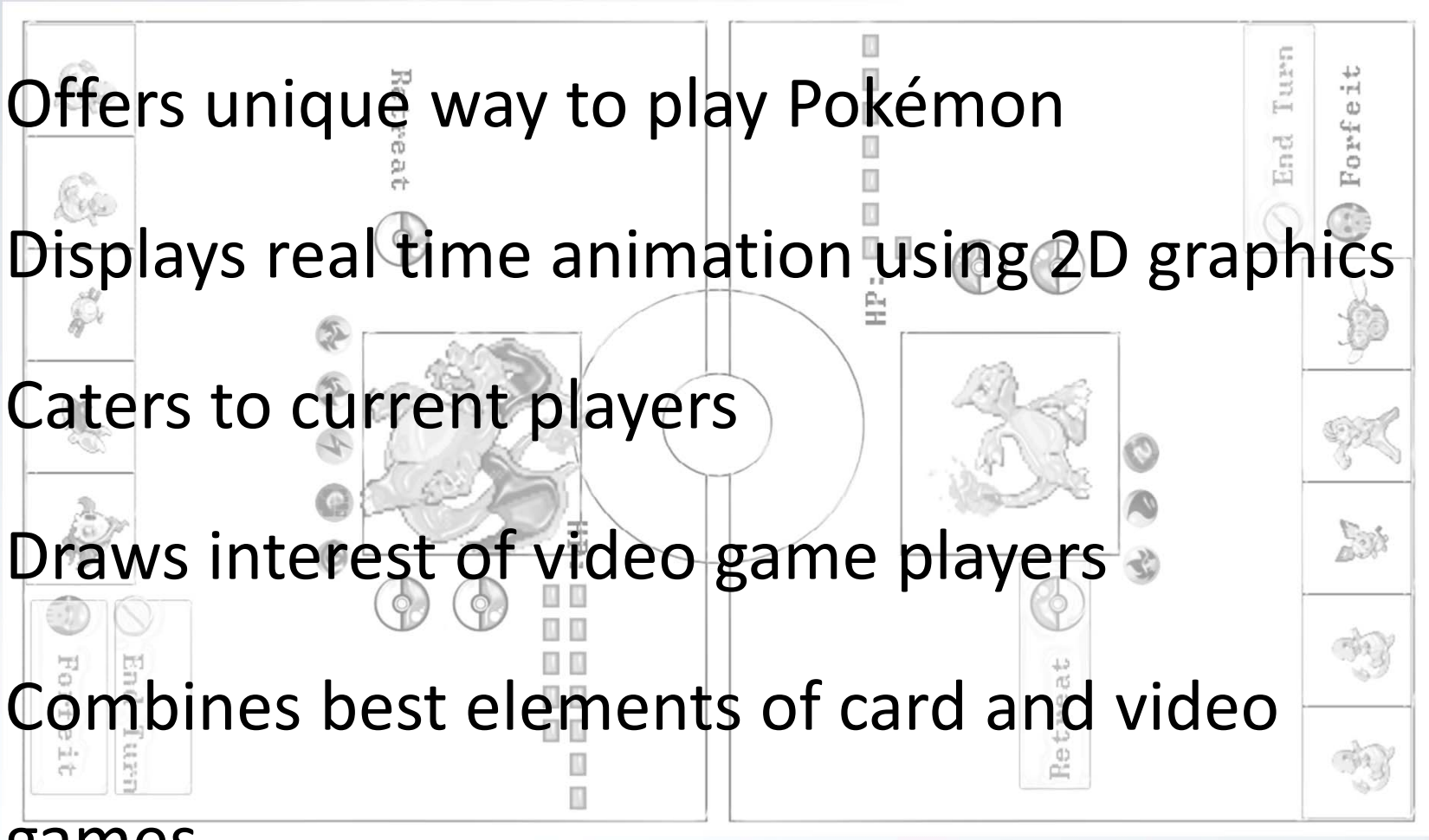
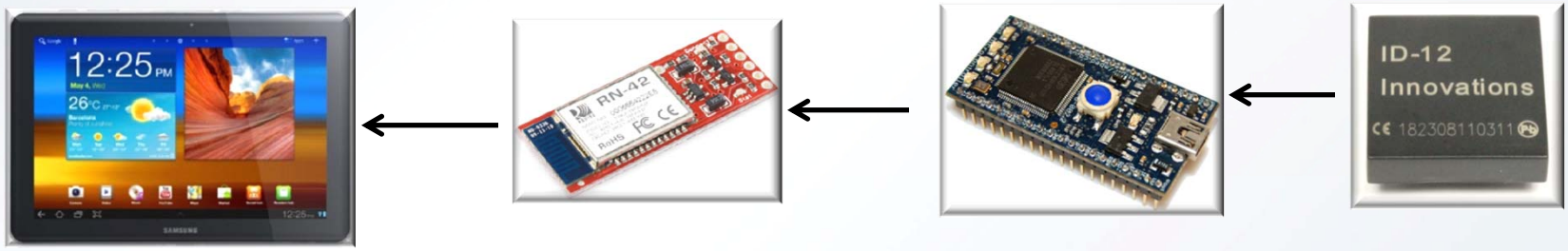
Pokémon Card Coliseum



- Offers unique way to play Pokémon
- Displays real time animation using 2D graphics
- Caters to current players
- Draws interest of video game players
- Combines best elements of card and video games

Questions?



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