Final Project Review

DuelReality

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April 23, 2018
Team Members

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Agenda

- Review of Project
- FPR Deliverables
- Demo
Review of Project
System Block Diagram

1. RFID Card Input
2. 5 RFID Readers
3. LCD Screen
4. Buttons
5. BLE Module
6. Power Distribution Management
7. Power Supply
8. Phone Network
9. Server (Software)
10. Game States
11. Leaderboard
12. SQL Card Database
13. Game Calculations
14. Projector

Components:
- AMega 2560 PCB
- Bluetooth 2.0
- RFID Data Line
- LCD Data Line
- Button Data Line
- Bluetooth Data Line
- Power Line
- Server Data Signal
Proposed FPR Deliverables

● Build 2 fully functional wristband device with power supply and integrated PCB Design.

● Users are able to start, play, and end a fully functioning game from their DuelReality systems.

● Project game actions into a user’s Field-Of-View through a connected projector.

● System meet all design requirement.
Met FPR Deliverables

- 2 fully functional wristband device with power supply and integrated PCB Design.

- Users are able to start, play, and end a fully functioning game from their DuelReality systems.

- Project game actions into a user’s Field-Of-View through Hololens.

- System meet all design requirement.
System Requirement

1. Minimum of 20 cards needed for each player, RFID Tags attached to each card
2. Wristband device is light enough to wear and hold still
   
   Per device weight less than 1.0kg (2.2 pounds)
3. Support 2 Player Mode (need 2 wristband devices)
4. Bluetooth as midway communication
5. 4+ hours battery life
   
   Each device can work for 5+ hour in peak power dissipation.
6. Inexpensive for mass production
   
   Less than $60 per device
## Cost of Materials

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<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>Unit Price</th>
<th>Unit Price per 1000</th>
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<tbody>
<tr>
<td>RFID Reader</td>
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<td>$2</td>
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<tr>
<td>RFID Card</td>
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<td>LCD Screen</td>
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<td>$6</td>
<td>$4</td>
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<tr>
<td>Bluetooth module</td>
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<td>$3</td>
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<td>Plastic casing</td>
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<td>Price Per device</td>
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<td>Total (2 device)</td>
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Demo
Thank You!

Questions?