

## **PROPOSAL FOR BCON**

We propose to create an RFID-based Arcade system, featuring client authentication, digital tokenizing and ticketing, and interconnected score tracking among machines. In this arcade, clients will be given an RFID card that will allow them to add funds, play games, check scores, and redeem tickets. The highest scores at each game will be kept track of in a database. There will be a “Rewards Center” where users redeem their tickets for prizes.

### **Submitted by:**

Connal West  
Nick Sullo  
Ben Prisby  
Omar Tuffaha

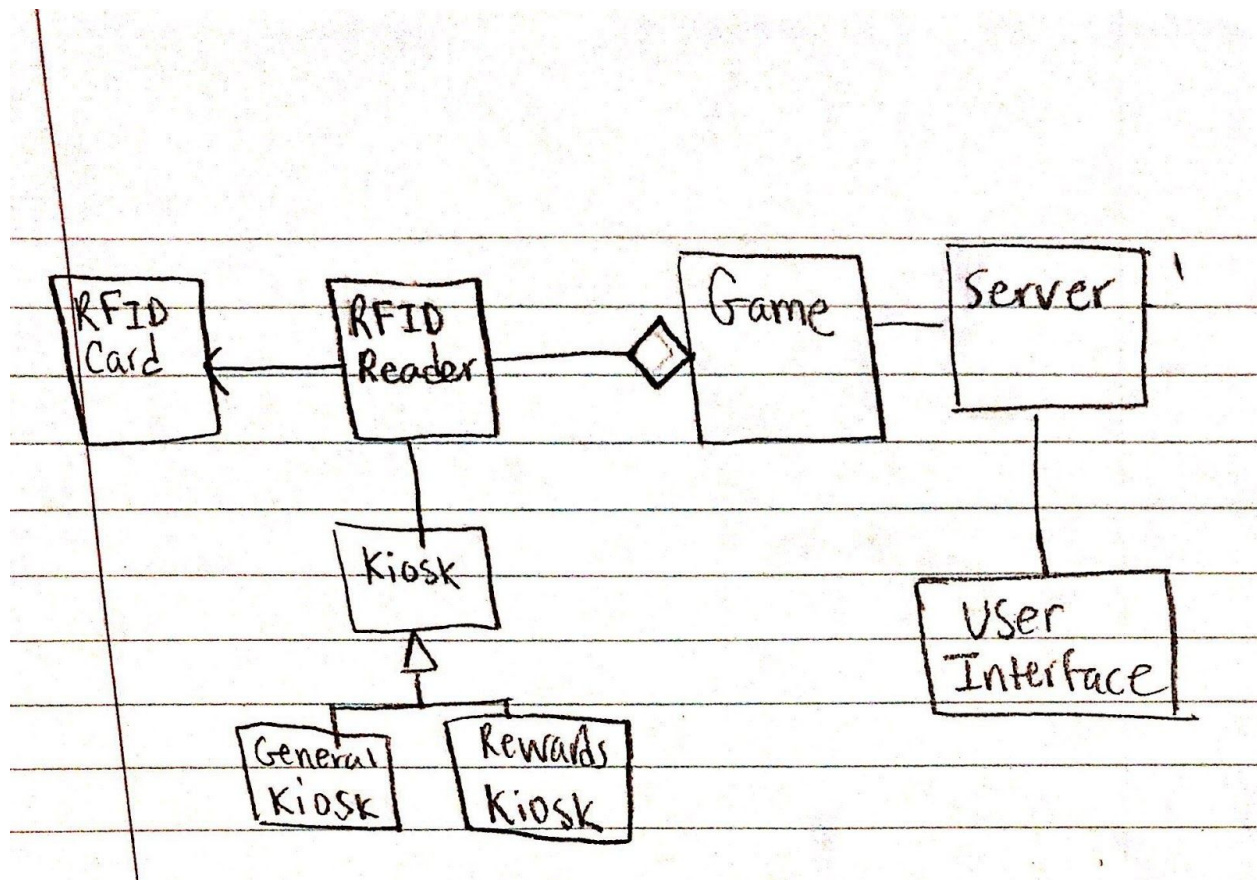
### **Date**

1/22/19

### **Objective**

The purpose of this project is to add more functionality to an already existing idea: the combination of traditional arcades, and the accessibility of RFID chips. This will be done primarily through the use and integration of a sophisticated backend that will keep track of high scores, tickets, and unique client IDs.

The simplest prototype would be at least 1 client RFID card, and at least 3 RFID readers (one would be an arcade machine, one would be a general kiosk for adding tokens, and one would be for the reward center). A demo could involve showing the various functionalities of each station. The arcade machine could check how many tokens a client has left. It could ask if the client would like to play a game and correspondingly allow them to begin the game. Once the client was finished with the game, the machine would update that client's high score and total tickets. The kiosk could add tokens to the card by accepting payment, or it could display high scores, total tokens, and total tickets so far. The reward center would show the catalog of things a client could purchase with their accrued tickets. It also would update a client's ticket total when they redeem tickets for a prize. Please see the diagram below to envision a physical representation of the project objective.



This above needs to be replaced by a detailed context diagram ^

This idea could be taken a step further by allowing a client to specify the rewards they want from the reward center. Think of it as a “wishlist”. After a game, the machine could tell the client how many tickets they need until they can get the prize that they want from their wishlist. It could also suggest that they play a certain game if they want more tickets (the suggested game would be the game they have the highest high score in or perhaps a game determined by some other metric).

### Value Proposition

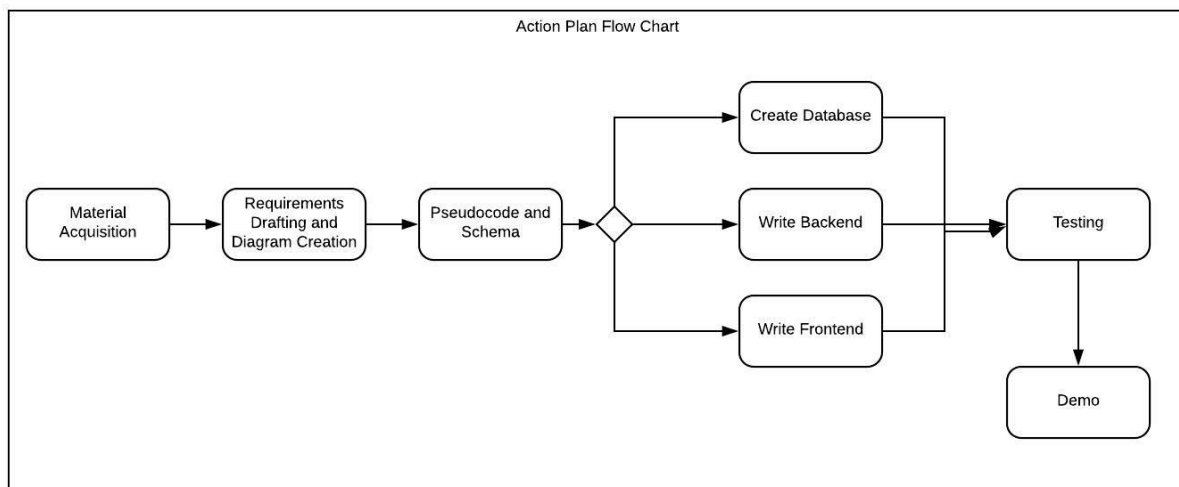
The RFID Arcade is needed to show that a well-connected backend can add far more functionality to a system of seemingly disconnected machines, as many arcades lack a centralized system to organize client data. Additionally, this project can be seen as a proof-of-concept for increasing the ease of use for arcade technology. Increasing ease of use will add value and benefit to the arcade industry greatly, as it mitigates the technical boundary to enjoying arcade games. The team is confident that the success of the RFID Arcade project will bring games to a wider audience and more people.

### Communication Plan

The team plans on meeting before and/or after class lectures on Tuesdays and/or Fridays. Topics of discussion will include the following: progress since the last time the team met, progress that the team hopes to achieve by the next meeting, and the main issues that should be dealt with at that time. The team expects to keep in touch via social media as well (specifically, communication using Facebook). As for team roles: currently Connal West has been assigned team leader, but the team expects each team member to contribute evenly across the entire project.

## Action Plan

See the diagram below for a work activity graph of BCON's action plan.



See the chart below for exact actions and deadlines for BCON's action plan.

Action	Person Responsible	Time Frame
Material Acquisition	Everyone	Ordered by Jan. 22nd
Requirements Drafting	Everyone	By Jan. 29th
Detailed Class Diagrams	Everyone	By Jan. 29th
Detailed Use-Case and Sequence Diagrams	Everyone	By Feb. 7th

Pseudocode and schema	Everyone	By Feb. 14th
Create Database	Everyone	Mid-End February
Write Backend	Everyone	February - March
Write Frontend	Everyone	February - March
Testing	Everyone	February- March
Demo Preparation	Everyone	February- March

BCON is splitting the work equally for each action and role, but the team will adjust the areas that team members will contribute to throughout the project based on each person's strengths and interests along with where the most work is needed at the given time.