**Gamblers - Design Review 0**

**Block Diagram**



**List of major subsystems**

* User-betting information: Creating an app/website to process the betting information the user wants to be updated on. Mostly relies on code.
* ESPN API: Using betting information to parse through ESPN API and create an efficient updating system.
* LCD Screen: Display selected betting information.
* LED Lights: Adapt the outcome of the user bet to give feedback to the user.
* Speakers: Design a straightforward speaker solution that provides audio feedback based on the end result of bets. This may be muted as desired by the user.

**User Betting Information:**

Description:

* Code block that creates a website/app that users can use to input data about their bets.

Requirements:

* Must be able to run off of ESP32 or other microcontroller (i.e. microcontroller must have wifi capability)
* Must have clear way of accepting bet information from user
  + Text input at least or image input that gets processed for text

Plan:

* Begin testing with webserver similar to the one we did in class on the ESP32
* Watch/read tutorials on how to allow more complex inputs (strings) and test variety of inputs
* Develop code structure to cleanly represent bet information in the code

Likely not feasible to try and link someone’s bets to their sportsbook accounts due to complex security and privacy systems on sportsbooks.

**ESPN API:**

Description:

* Code block that accesses ESPN’s website and gathers data relevant to bets given by the user.

Requirements:

* Must be able to ping espn.com for information about players with RESTful API to get online data into our system
  + Need ESPN API access token
* ESP32 or other microcontroller with wifi capabilities.

Plan:

* Create API to make simple requests that lives on an ESP32 (to verify it’s possible to do)
  + Base this on tutorials found online
* Buy ESPN API access token and test simple requests with ESPN’s website
* Flesh out the code that parses through the information received by an API request so that it can be used cleanly elsewhere in the code.

**LCD Screen:**

Description:

* Display selected betting information.

Requirements:

* Must update every thirty seconds, be able to highlight bets depending on importance (user-betting information).
* Must be able to display visual graphics seamlessly (will have to verify if ESP32 is able to handle this).

Plan:

* Create a proxy system before integration with API that updates automatically.
* Create an UI that displays information concisely and is user-friendly.
* Include visual cues depending on betting information.

**LED Lights:**

Description:

* Lights that interface with the betting system to display information results

Requirements:

* Display results of the betting information with visual stimulation using various colors.

Plan:

* Create a system where the lights will trigger with varying intensities and colors based on certain flag variables
* Interface with betting information when the betting information is interfaced with the rest of the system

**Speakers:**

Description:

* Design a straightforward speaker solution that provides audio feedback based on the end result of bets. This may be muted as desired by the user.

Requirements:

* Provide audio feedback based on certain flag variables
* Be able to be muted

Plan:

* Create the speaker driver system first then use flag variables to see what will work
* Interface with the full system when everything is created

**Power:**

Description:

* The system of cables and power regulation components that power the microcontroller and interfaces.

Requirements:

* Must be able to deliver the required current and voltage to each other subsystem

Plan:

* We don’t really know how to do this, but ideally we can have one power cable that gets stepped down to fit the requirements of the other subsystem
* If this kind of power regulation scheme is too complicated, we’ll likely settle for multiple cables coming out of the device, each carrying the power necessary for a specific (set of) subsystem(s).

Meeting with Schafer Topics/Questions –

* Processor (ESP32 or something else)
* Other component clarifications
* Ask about LCD Screen and ESP32 Interface.