Portable Scoreboard

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Background

Various community sports leagues use public spaces and sports complexes, but typically do not have access to a scoreboard during competitions. There are some available commercial products, but these are expensive and do not have many desired features.

Problem Statement

The Idaho Falls Friday Night Flag Football League (www.fridaynightflag.com) previously acquired a portable scoreboard, but due to design and hardware failures it is no longer functional. Rather than attempting to repair or modify the existing scoreboard, the League is willing to sponsor a Capstone project to meet their, and potentially others', needs for a flexible and user friendly system.

Deliverables

The capstone design team will provide the following deliverables:

1) Specifications, design, parts lists, program to control, and user interface(s).
2) An operational scoreboard meeting essential requirements, with stretch goal including enhancements.

Design Requirements:

- Large enough to read from 40 yards
- Bright enough to read in sunlight
- Portable with handle, and requires no more than 1 person to move/set up
- 6-8 hour battery life (can run on battery or extension cord)
- Can be mounted on a tripod, fence, or freestanding base
- Control/user interface (system must not be Raspberry Pi based)
    - Dedicated controller that has a range of 200+ feet; or quick connect/disconnect phone so multiple phones can have app and operate
    - Physical buttons on the scoreboard to start/stop the clock, and adjust scores up/down
- Weather proof to rain/outdoor conditions (also consider temperatures and wind)
- Robust "hardened" design for rough handling
- Under $500 to make
- Desired Enhancements
    - Can input team names (not just fixed home/visitor)
    - Cycle ads/scrolling words mode
    - Quick boot and shutdown sequences
    - Has a buzzer/speaker for timers