SLOW-PITCH SOFTBALL CAMERA:

PROBLEMS AND USERS

SDMAY25-11

OUR PROJECT

- We are creating a tracker for slow-pitch softball pitches.
- The device will need to track the height of the ball and determine where it falls between a certain height range.
  - Typically 6-10 ft.
- If the ball is not in that range, it will give an audio cue that the pitch was illegal.
- This will help assist umpires call illegal pitches and improve the flow of the game by reducing the number of disagreements on rulings.

PROBLEM STATEMENT

Slowpitch softball players are have issues with the consistency of illegal pitch calls.

This inconsistency cause mistakes in their swings because the call was too late, or arguing with the umpire because the call was debatable.

CONSIDERING OUR USERS

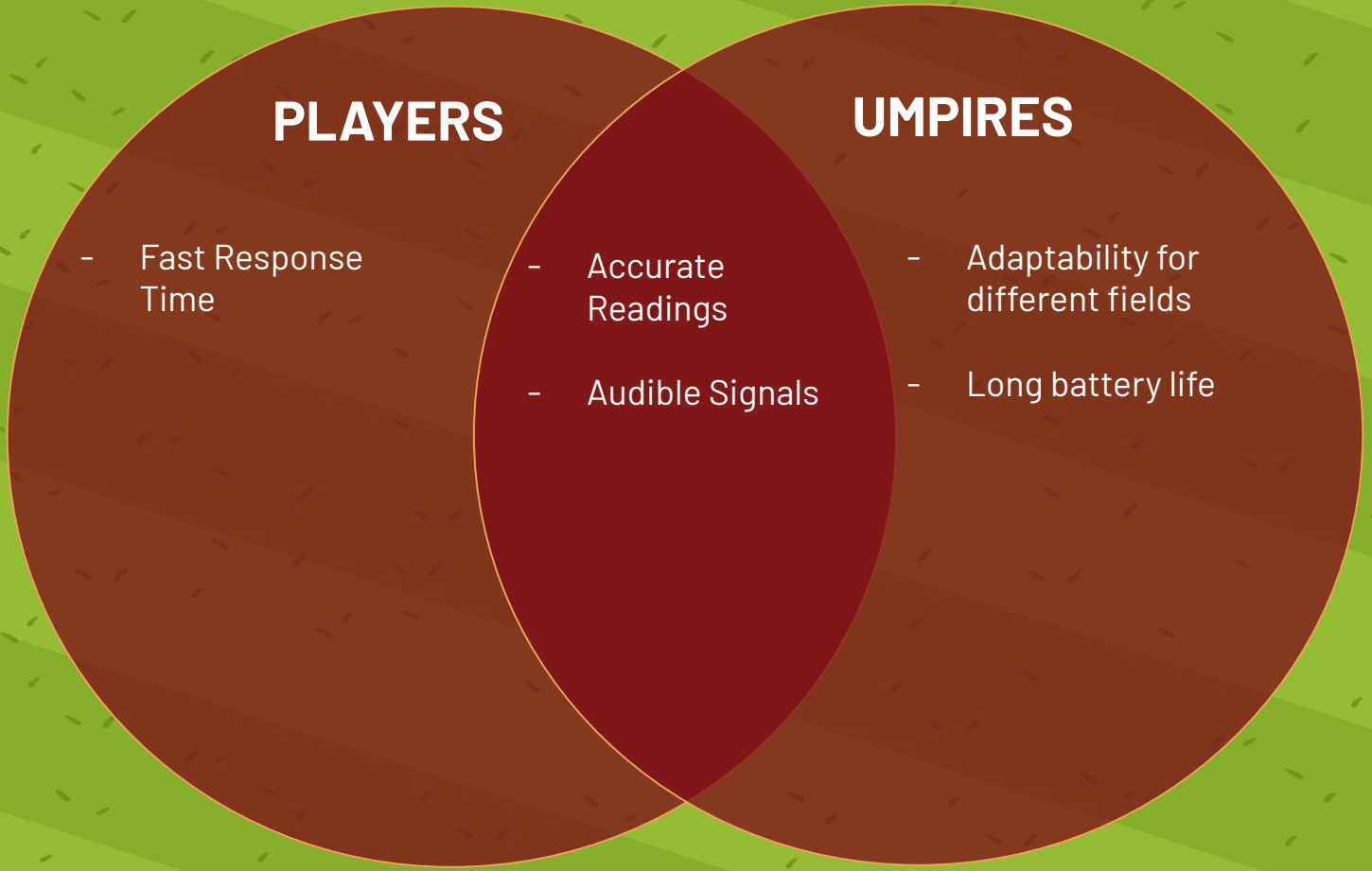
To maximize our projects user-compatibility, what features **must** we include, **should** include, and **not** include based on user needs and preferences?

WHO ARE OUR USERS?

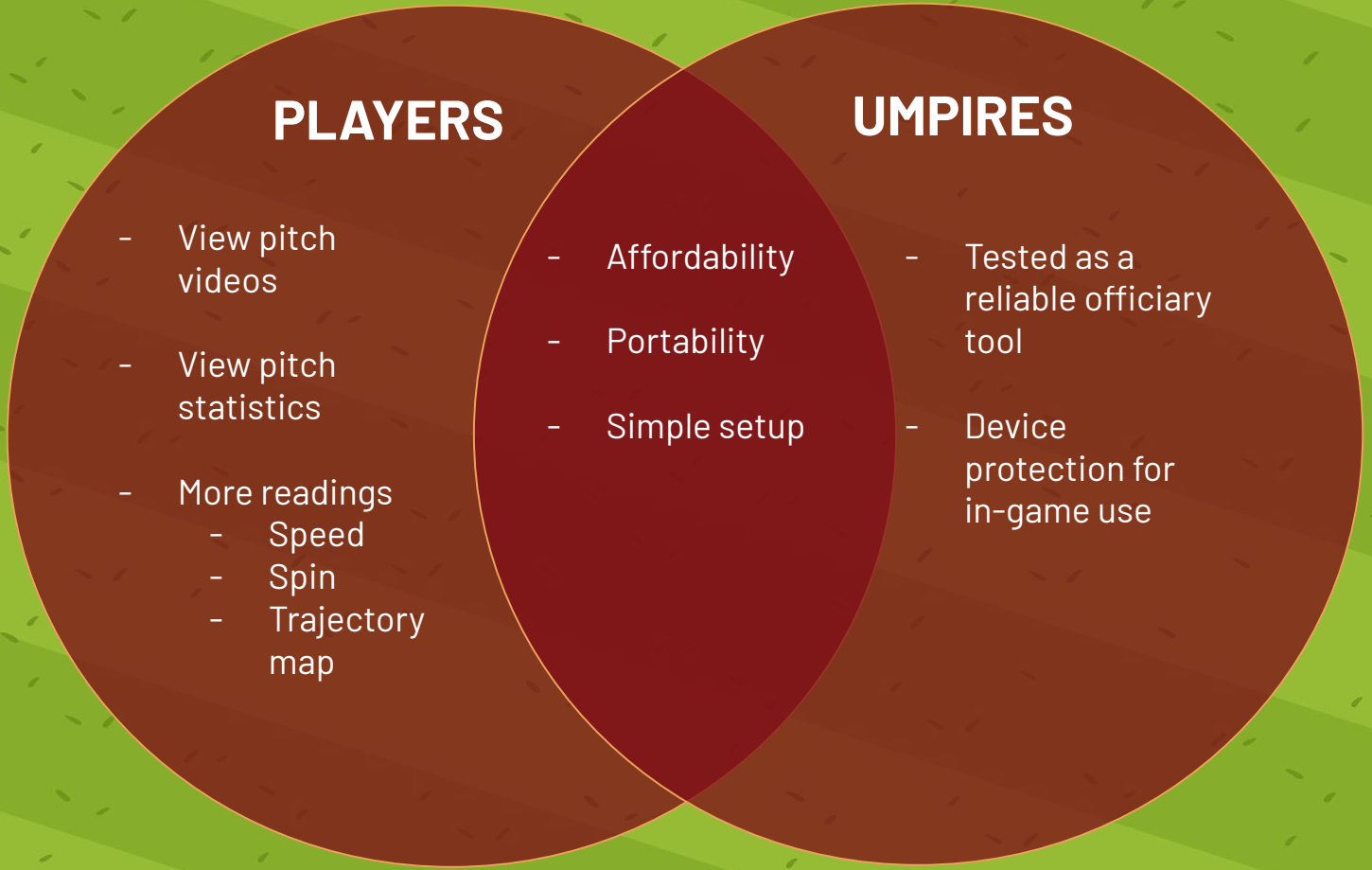
Players practicing or playing recreational slow-pitch softball.

Umpires officiating recreational slow-pitch softball.

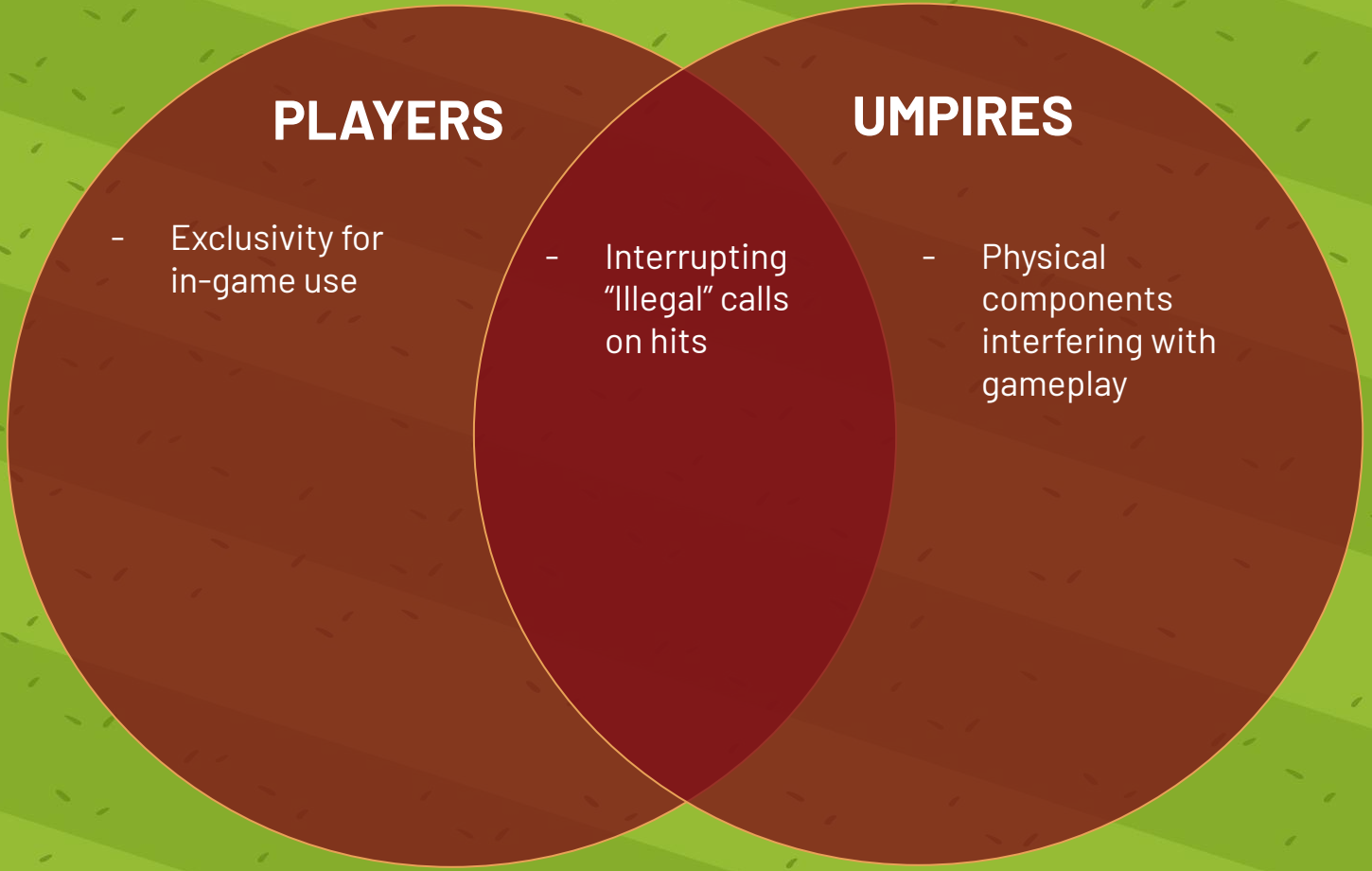
OUR USERS' NEEDS



OUR USERS' WANTS



OUR USERS' NO-NOS



CONCLUSIONS

- Both users and referees want to preserve the integrity of the game. An accurate, non-intrusive, responsive model is needed for easy gameplay.
- Referees desire an easy setup and long battery life for officiating multiple games
- Players would like an opportunity to view past pitches and their statistics.
- All users would like a cost effective and portable tool.

DESIGN CONSIDERATIONS

YOLOV9

Trained object detection model for accurate results

MOBILE APP

A mobile app allows for an affordability and portability.

C++

Fast computing language to analyze camera video

CALIBRATION

A setup calibration allows for adaptability to each field

IN-APP STORAGE

Stored videos can be viewed/exported

C++ Object Detection

Training Data

OpenCv

YOLOv9

(x, y)

height(x,y)

Mobile Application

"Illegal"

View/Share Pitches

Settings/ Calibration

OUR CURRENT DESIGN MODEL