Sprint Meeting Notes

Date: Dec 9, 2023
Duration: 5:00 PM - 6:00 PM
Attendees: Alec Lorimer Mouhamad Ali Elamine Nupur Kumar Natalie Chung

Functional Assessment Update:

Implementation Progress:

- Version 0.1 of SLOW-ARC is in progress.
- Features being implemented:
  - Strike zone determination
  - Handling ball intersection with the strike zone plane
  - Determining adequate data points for confidence requirements

Doubts:

- Consideration for edge cases in scenarios
- Ensuring adequate testing coverage for implemented features

Deliverables Progress:

- Source code development ongoing
- Discussing how we want to go about calculations of determining “Ball” or “Strike” based on the given data of top view pitch path and side view of strike zone

Process Assessment Update:

Product Backlog Items

1. As a developer, I want to create a well documented, functional, and readable code base so that the version 0.1 of the SLOW-ARC system can be implemented and can be used by any user
2. As a developer, I want to calculate the strike zone by taking into account the positions of the home plate points and the batter’s left knee, right knee, left shoulder, and right shoulder positions so that the strike zone can be calculated
3. As a user, I need the software to handle cenarios where only a subset of position data points is provided, ensuring confidence in the strike determination.

4. As a developer, I want to calculate the the path of the pitch so that the we can use the path of the pitch to help determine if it passes through the strike zone
5. Case 1: As a developer, I want to create executable code that runs and can read the CSV files and make proper calculations based on the unit tests I have created so I can deliver an output to the user determining whether the pitch was a ball or strike
   Case 2: As a user, I want to be able to be able to execute to given code by being able to read the README file and understanding how to run and compile so that I can understand with the given data files if the specific case was a “Ball” or “Strike”

Sprint Backlog Progress:

Task 1: Establish Code Base

Description: Develop the algorithm to accurately calculate the strike zone based on batter position and plate dimensions.
Definition of Done: Strike zone calculation module implemented, unit tests passed, and integrated into the main system.

Task 2: Read through CSV file

Description: Create a parser to be able to read through given CSV files
Definition of Done: Be able to properly read in data and store the following information:

- Home plate point: front close corner
- Home plate point: back close corner
- Home plate point: front pointed part
- Home plate point: front far corner
- Home plate point: back far corner
- Left Shoulder
- Right Shoulder
- Left Knee
- Right Knee
- Ball position: middle, left, and right

Task 3: Calculate Strike Zone

Description: Integrate the strike zone calculation module with the pitch path calculation algorithm.
Definition of Done: Strike zone detection incorporated into the pitch path calculations with successful integration testing.

- Use the data of the top view of plate and side view to see the area of the strike zone
- Use the radius of the ball to see if it clips the the strike zone at all which would ultimately mean it is a strike

- Know width or far edge and near edge are in pixels and compare with the pixel of the ball for each given position

Task 4: Calculate Pitch Trajectory

Description: Integrate the strike zone calculation module with the pitch path calculation algorithm.
Definition of Done: Strike zone detection incorporated into the pitch path calculations with successful integration testing.

- View side data to see if pitch was outside or inside the strike zone based on depth
- View data to see if ball passes through strike zone from over head
- Match up the ratio of the pixel of the ball to the plate to determine if it is a strike and if it is, they should both match up to roughly the same area.
- Pitch data stored in arraylist of quads

Task 5: Create Executable Code for User

Description: Outline criteria to ensure the initial code structure meets project requirements and standards. Be able to develop code that the user can easily run and compile from simply reading the README file and see the results of either “Ball” or “Strike” for the given CSV file.
Definition of Done:

- Unit test cases written, executed, and verified against expected outcomes as well extra for test coverage
- Create a notification subsystem with interfaces for more users to subscribe to the system.
- Create a README file detailing installation steps and basic execution instructions for the SLOW-ARC system
- README document created and reviewed for clarity and completeness
- Test cases documented and reviewed by the team during final sprint review