Sprint Planning Document (Sprint 1)
Sprint Goal Backlog (Sprint 1)
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High-level Project Overview

Project Mission:

- Basketball SmartGlasses Analytics is committed to delivering live statistical information from the Synergy live sports API to the Brilliant Labs AR glasses over a Bluetooth connection established by a custom-built Android app from our team.

Problems We Are Solving:

- Live statistical information is not readily available on the sideline in real environments.
- Coaches frequently must go look at stats written down or on tablets, taking their eyes away from the game for precious seconds.
- Assistant coaches and other staff cannot quickly sort, filter, and deliver relevant live statistical information to the head coach in real time.

Project Overview (High-Level Features):

- **Android Application:**
  - **Sign-in/up:** Users should be able to sign in with email/password or Google. Profile creation and customization.
  - **Starting Lineup:** Have widgets available that show all players currently on the floor, access their statistics with a press of the button corresponding to their position.
  - **Team stats:** Have a button available to view stats like team shooting percentage, rebounds, etc.
  - **Transmit button:** After selecting relevant stats, send the stats to the glasses over Bluetooth
  - **Establish Bluetooth connection:** Use Micropython API to connect to glasses
  - **Connect to Synergy API:** Make api requests, store information in a database for use in the rest of the app (all the stat buttons listed above)
  - **Run python code in Android App:** Use available libraries to compile executable python code for API access and Smartglass transmission

- **Brilliant Labs Smartglasses**
    - Connect over Bluetooth with a connection established by the android app, choose what information to send to the glasses and present it in a digestible manner.
- **Backend Services**
    - **Realtime Database**: Storing live data in the app for filtering and sending to the glasses.
    - **API:** The team uses a service called Synergy for their live stat information.
    - **Authentication:** The API has built in verification techniques like usernames and passwords to access the information.

Sprint 1 Planning

Sprint 1 Goals:

1. **Research adding functionality to group's previous model**
2. **Determine viability of computer vision model for real-time information**
3. **Research Glasses Information Delivery**
4. **Establish New Design for information delivery system that reflects project goal shift**
5. **Research Synergy API**
6. **Research using Python in Android Studio apps**
7. **Research SmartGlasses API**
8. **Setup Android Studio and create sample app**
9. **Setup Digital Android Emulator to test app on simulated phone**

Sprint 1 Deliverables:

- **Research adding functionality to group's previous model:**
    - **Assigned:** {Aiden Carroll, Gabe Gros}
    - Research previous group's model by watching their old presentations and videos
    - Clone repository and attempt to run the code/understand how it works
- **Determine viability of computer vision model for real-time information:**
    - **Assigned:** {Aiden Carroll, Gabe Gros}
    - After understanding previous group's model was not running real time, communicate with sponsor to understand importance of real-time data delivery.
    - Research feasibility of live data transmission and CV model annotation in specific use case scenario that sponsor requested.
- **Research Glasses Information Delivery:**
    - **Assigned:** {Kendall Hamm, Ethan Schwalbach, Chris Hellen}

    - Look into how the Brilliant XYZ glasses transmit and receive data, begin to conceptualize what sending information to the glasses might look like.
- **Establish New Design for information delivery system that reflects project goal shift:**
    - **Assigned:** {All Team members}
    - After concluding real-time CV model video annotation would not be something our group could feasibly support, work with sponsor to design a system that can deliver real time statistical information to the glasses in a game scenario.
    - Obtain list of all available devices/technologies available to us for use
- **Research Synergy API:**
    - **Assigned:** {Ethan Schwalbach}
    - Research how connection and data retrieval from Synergy Sports Service works.
    - Communicate with sponsor to set up an account and begin making sample requests to the API to learn more about how it works for later use in the app itself
    - Started at https://developer.connect.sportradar.com/datacore/streaming_panel/
- **Research using Python in Android Studio Apps:**
    - **Assigned:** {Chris Hellen}
    - Research how to run python code in Android studio, as the API calls, as well as the commands to the glasses, run in Python which Android Studio does not natively support.
    - Began by looking at https://docs.python.org/3/using/android.html
- **Research SmartGlasses API:**
    - **Assigned:** {Gabe Gros}
    - Research using the MicroPython API to make calls to the Smartglasses and establish a Bluetooth connection.
    - Research was done starting at https://docs.brilliant.xyz/monocle/micropython/
- **Setup Android Studio and create sample app:**
    - **Assigned:** {Aiden Carroll}
    - Download and install Android Studio, create a sample project to begin work off of and link it to the already made project GitHub.
- **Setup Digital Android Emulator to test app on simulated phone:**
    - **Assigned:** {Aiden Carroll, Kendall Hamm}
    - Kendall - Research the specifics of the ELO tablets that we plan to run the app on
    - Aiden – Create a virtual device in Android Studio to test our app on, so that we can visualize what end users will see when we are done with the app
    - Worked together to create a virtual device that corresponded closely to the ELO tablets to ensure minimal difference between current local development and remote deployment to the tablets themselves.