Understanding :
The Application is being developed for athletes where they can see the workouts created by the coaches. Further once athlete starts the activity, wearable will start keeping the track of data and Our team has to work on creating endpoints (APIs) which will pull/ push the workout data from/to 5 different devices (Polar, Garmin, Strava, Suunto, Wahoo) and in the format which is supported by the respective device.

Client has shared the code where our team will review it and work on reducing unnecessary code, review proper error handling and recommendation for DB queries wherever possible.

Regarding Apple Watch - for Phase 1, we are considering an app which will fetch the activity data from Apple Health and sync it with our server through the provided apis as they dont have a public API to push directly.

From the provided document by Brian (https://docs.google.com/document/d/1HPRBgAcbmwovhAHfOcjGczUeIEfd-4nDQ6Q_BoEJBAc/edit), Following are the few items which are not considered for phase 1, we will review these for phase 2 and provide efforts for same before proceeding :
1/ Converting and calculating (Algorithm) for HR zone, power zone
2/ HRV algorithm
3/ FTP calculation
4/ Recovery %
Other than this for Apple Watch, we will also review swimPro and provide a timeline along with features for your approval. For now, we have considered an Apple Watch app for syncing with Apple Health.

Tech stack : Laravel

Code Details : https://platform.cloudways.com/server/806078/access_detail

Queries & Assumptions :

[Brian]: For point #1, I want to clarify that your team will format the workouts to display properly for each device, correct?

[Team smartData] : Our Laravel API creation team will create a standard Pull and Post API for the respective providers (for Strava, Garmin, Polar, Suunto and Wahoo).

In the case of Pull, our API creation team will create the data in standardized format that can be used by your team accordingly.

In the case of Post we are assuming your team will provide us the standard data so that our team can create the end point and the data can be posted to the respective platforms in a standardized format.

Assuming data handling, rendering etc. will be managed by your team

[Brian] : As you probably know, we cannot format the content on the devices. The API pulls from our DB and sends the appropriate data to the devices.

[Team smartData] : Yes, we will be formatting the workouts to display properly on the respective devices. The method of exporting the format to the respective devices will depend upon the compatible format supported by these devices. Once the workout will be created, it will be exported in a compatible format for the respective device.

Additionally, we can save the format into your DB and Pull in order to Push that formatted data on the respective devices. Assuming you will be sharing the details of the DB schema with us.

[Brian] : 1. Will you pull the data in the most usable format? For example, GPS coordinates may be best in a txt file instead of overloading a DB table. Also, is your team familiar with importing mass amounts of workout data? For example, since there are many metrics saved every second or so during a workout, what type of formatting has your team completed in the past? Our primary competitor in this space is Training Peaks. Does your team save the data in the same way that Training Peaks displays their data (similar to the attached images in this project)?

[Team smartData] : Regarding GPS coordinates, to retrieve the coordinates and perform any analysis/calculation on them to store in a database with indexing capabilities might be more suitable. However, if the application only needs to store and retrieve the coordinates then storing them in a text file can be a simple and efficient solution.

Yes, we are familiar with importing mass amounts of workout data, in our past projects we use different supported files formats(.FIT, .GPX) to save the mass amount of workout data.

Our approach : As application is in Laravel so we have several ways to import mass amounts of data.
-In Laravel we can create multiple records in a single database query.
-Laravel's "chunk" method: This method allows you to process large amounts of data in smaller chunks to avoid memory issues
-Utilizing different Activity formats to send and retrieve the workout data
Regarding how TrainingPeaks saving data in backend is difficult to track technically as companies rarely expose their database handling but based on our past experience (inline with the attached images) in developing similar application, we ensure you best possible solution to store large amount of data in the database

[Brian] : we have very little logic presently to convert the data that is being pulled in.

[Team smartData] : Please confirm the exact models of devices which you have integrated
[Brian] : We have integrated the latest Garmin, Polar, and Strava imports. As you know, device models are not relevant to the API imports.

[Team smartData] : For HRV calculation, you need real time feed of heart rate . Was checking thats why
[Brian] : No. HRV is a recovery metric, calculated as an HRV average after a user wakes up