## **Target Users**

The target users are individuals in Singapore who are eligible for Individual Physical Proficiency Test (IPPT).

## **Requirements Elicitation**

Software Requirements Specification

1. The app must prompt the user for their profile information when the app is first opened.
   1. The app must prompt for the user’s personal details
      1. The app must prompt for the user’s name.
      2. The app must prompt for the user’s birthday.
      3. The app must prompt for the user’s residential location.
      4. The app must recommend the two nearest IPPT testing venues from the user’s residential location.
         1. The app must query the database for two IPPT testing venues that are the nearest to the user’s residential location.
         2. The app must display the two nearest IPPT testing venues for the user’s information.
   2. The app must prompt for the user’s current fitness abilities.
      1. The app must prompt for the user’s IPPT exemptions.
      2. The app must prompt for the user’s current number of push-ups he can perform in a minute.
      3. The app must prompt for the user’s current number of sit-ups he can perform in a minute.
      4. The app must prompt for the user’s current timing for his 2.4km run.
   3. The app must calculate the user’s current IPPT score using the user’s fitness abilities using the IPPT scoring metrics.
   4. The app must prompt for the user’s target IPPT score.
      1. The app must prompt for the user’s target number of push-ups performed in a minute.
      2. The app must prompt for the user’s target number of sit-ups performed in a minute.
      3. The app must prompt for the user’s target 2.4km run timing.
      4. The app must calculate the user’s target IPPT score using the user’s fitness abilities using the IPPT scoring metrics.
      5. The app must prompt for the user’s intended IPPT test date.
2. The app must formulate a personalized training plan according to the user’s current and target IPPT scores, taking into consideration the time period to his fitness test.
   1. The app must display the number of days from the current date until the user’s intended IPPT test date.
   2. The app must recommend the appropriate training (sit-ups, push-ups and run timings) to be performed daily based on the exercise algorithm.
      1. The app must recommend the appropriate training for the user to complete.
         1. The app must recommend the appropriate repetition of push-ups to be completed in a minute.
         2. The app must recommend the appropriate repetition of sit-ups to be completed in a minute.
         3. The app must recommend the appropriate timing for the 2.4km run.
   3. The app must recommend additional related exercises that are effective to improve the user’s fitness abilities other than the IPPT.
      1. The app must query from its database for a recommended workout that is suitable for the fitness activities in which the user needs to improve upon.
      2. The database must return a recommended workout that is catered to those areas for improvement.
   4. The app must recommend nearby venues for the user to engage in exercise.
      1. The app must query from its database for a list of exercise venues that are convenient for the user to train.
      2. The database must return a list of exercise venues that are near the user’s residential area.
      3. If the list of exercise venues does not have a park or a gym, fill up the shortfall with the next nearest venue.
   5. The app must display the recommended workout to users in an appropriate format.
      1. For each exercise on the recommended workout, the exercise information must include its name.
      2. For each exercise on the recommended workout, the exercise information must include a guide on how to perform the exercise.
      3. For each exercise on the recommended workout, the exercise information must include how many repetitions to perform.
      4. For each exercise on the recommended workout, the exercise information must recommend the appropriate exercise venue with the necessary equipment for the exercise.
      5. For each exercise on the recommended workout, the exercise information must allow users to mark the completion of a particular exercise.
   6. The recommended workout must be refreshed daily.
3. The app must be able to track the user’s fitness progress.
   1. The app must be able to accurately track the user’s push-ups using video recognition.
      1. The app must perform video analysis on the user’s push-up attempts for a minute.
      2. The app must identify the correct push-up form from an incorrect one with an accuracy of 90%.
      3. The app must count the number of correct push-ups performed by the user within a minute.
      4. The app must log the number of correct push-ups performed by the user within a minute.
      5. The app must replay the video recording for the user to see the push-ups performed by himself.
   2. The app must allow users to indicate the number of sit-ups completed by the user within a minute.
   3. The app must be able to record the user’s 2.4km run timing.
      1. The app must be able to retrieve the user’s latest running information from third party fitness apps through API call.
         1. The app must retrieve the run’s details (distance, timing, speed at 1km intervals).
      2. The app must log the user’s run details.
      3. The app must provide analysis of the user’s current run as compared to his targets and his previous attempts.
4. The app must be able to analyze the user’s fitness progress.
   1. The app must be able to retrieve the past training data of the user.
   2. The app must be able to display the past training data of the user in an appropriate manner.
      1. For push-ups, the app must display past attempts in an appropriate format
         1. For each push-up attempt, the historic must contain the date of attempt
         2. For each push-up attempt, the historic must contain the number of correct push-ups attempted.
      2. For sit-ups, the app must display past attempts in an appropriate format
         1. For each sit-up attempt, the historic must contain the date of attempt
         2. For each sit-up attempt, the historic must contain the number of correct push-ups attempted.
      3. For 2.4km runs, the app must display past attempts in an appropriate format
         1. For each run attempt, the historic must contain the date of attempt
         2. For each run attempt, the historic must contain the time taken for finishing the run
      4. The app must be able to forecast the eventual IPPT score of the user from his past fitness progress.
5. The app must be able to connect the user with other nearby users of similar IPPT scores.
   1. The app shall recommend the user, at least 3 and maximum of 10 users who have nearby residential addresses and who are of IPPT scores within a 10-points range of his.
   2. The app must allow the user to be able to message other recommended users to interact to exercise in the nearby exercise facility together.

Data Dictionary

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| Term | Definition |
| IPPT | An annual fitness test administered to Singaporeans males who have undergone National Service. |
| IPPT exemptions | Some Singaporean males are excused from certain fitness station in the fitness test due to medical history and they will only be required to complete the remainder fitness stations. |
| IPPT score | Measured using the IPPT scoring metrics which adjusts for the age of individuals. |
| Exercise algorithm | Based on some magic website, it recommends the appropriate amount of progressive training users ought to do to hit the target by the test date. |
| Correct push-ups | Refers to IPPT’s standard for a push-up. |
| API | Refers to application programming interface, which is a set of definitions and protocols for building and integrating application software. |
| Exercise venue | Refers to parks, training facilities and gyms. |
| Nearby | Within a 300m radius from the user’s residential area. |
| Database | Refers to an organised collection of structured information, or data, typically stored electronically in a server. |
| Fitness ability |  |
| third party fitness apps |  |
| Appropriate exercise venue |  |
| Record | Writing to a cloud database |
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