Requirements Specification for Members Guest Phase 2

The main priorities for phase 2 are developing the innovative features and ensuring the software can present the most persuasive case to funders / test users (early adopters)

Key:

UI - refers to development of UI and paths through those features that allow a user to use the service.

ML - matters relating to the development of the machine learning model, and the structuring of data that it will be trained on.

Data - any data used by, collected, created or generated by the app in the form of golf course info, user info, game info, user interactions, context data (weather etc), app/site traffic and logs (records of software processes).

List existing features? See accompanying Spreadsheet

**Summary:**

For phase 2 we need to meet the innovation criteria of the Advance Voucher.

The innovative aspects of this app are around user interactions feeding the machine learning and building up rich data, structuring that data (for the ML to be optimal) and refining the UI so as to give coherent recommendations to golfers (about games) and streamline the process of using the app.

- Database optimisation

- Richer and deeper data

- Develop ML

- User testing with the existing features to inform refinement of these.

First phase would focus on getting the app into a state where, if we do user testing (with 10-20 mock accounts, already set up but with ability to edit profile and develop preferences) we can capture user interactions and behaviour and feed that data to the ML.

Database development: I see from the skeleton architecture doc that there were provisions to maybe pay for data from scotland’s top 100 courses or similar. I would recommend viewing the problem like this: you will be in a position to create a much more accurate and detailed ‘top 100’ once this app is running, putting the above site in the shade. You will be in a position to charge for access to your data. *(Scotland’s top 100 data is a bit weird anyway - so many courses with a rating of 93, alphabetised, so you have to scroll through lots of courses beginning with ‘A’ etc. Looks purile, like they just voted for their local or st andrews.*

(We can scrape - fair use - basic, generic course info from [bunkered.com](http://bunkered.com) since that info is not copyright. But description text will need some work since that would be copyright. )

Building on MVP

Full game hosting and game booking functionality developed and **user tested**

Full user profile editing and updating developed and **user tested.**

User can provide feedback on a game (about the event)

User can provide feedback on a host (about the host)

User can provide feedback on a course (?)

(*Might need to develop a separate database for ratings/feedback)*

What we would add to the app with reference to the Skeleton Architecture Doc

Sign Up

9. Create Profile (both)

* Edit / add location
* toggle profile privacy
* toggle notifications
* Bio - edit / add bio

Usage & Layout

3. Profile page

* Profile page exists
* Home location
* About me
* Golf handicap
* linked courses

4. Ratings thumbnail

* show previous ratings and comments

8. Live Feed

* additional to notifications
* identify and match potential games
* who likes to play where and when
* relative handicap, mind who they play with?
* etc

10 Cancel Booking

* weather tie in
* ML to track for off site transactions
* geolocation around time of advertised game
* geolocation turned off on phone around the time of the game (advertised)
* pattern behaviour
* verification for cancellations

Databases

1. Security

* integrity
* contingency for systems

6. Traffic

* monitoring
* stats
* app logging

Payment and Finance

3. Fraud

- cancellation risk

New Features not covered in Skeleton Document

**Images**

Database of high quality golf course images that are not copyright. (Create this?) -> would lead to users creating games using the provided image instead of uploading their own (which would be less efficient) . Start with generic images of golf.

Can add a feature later with user image upload (with moderation)

**Search**

Search by major town in area - people don’t always know the postcode …

‘St Andrews’ should return a result. If we have a region field (from bunkered) we can cross reference with that.

**Fraud Detection**

This service needs to start out by simply creating a prediction of whether a user has played a game (once cancelled). Start out by assuming that it cannot be verified, just predicted or a probability calculated.

Golf clubs partnering with the app - who would own the data created from checking against games played at club and games advertised (if not played) on the app?

Keeping transactions (games) on site / on app. You can’t stop people making friends (dating apps are focussed on people *not* in couples - they don’t break down because they are successful, they are successful because people are unpredictable. The main benefit is ease of access to golf on high price courses (courses like st boswells and Sannox are not tricky to get onto). Focus on ease of use of the app.

**UI Accessibility**

User interface, front end app will need to meet accessibility criteria. Therefore colour cannot be a functional aspect of the design, only decorative. Ensure high enough contrast and readability. Must be screen reader friendly.

**Data**

Collect and normalise much more detailed data on golf courses.

<https://www.bunkered.co.uk/>

Provide structured data on golf courses in format e.g.:

Name

Location (village/town etc)

Region

Country

Type (Parkland)

Length

Par

Holes

Contact

Address

Website

Image (+ attribution etc)

Description

Facilities

Map ref

**Encryption of personal information & data security**

Ensure personal info can not be inferred from other fields (e.g. track *when* a user plays even if user name is encrypted)

ML must have contingency (backup) recommendations / outputs get stored in db and backups of databases are saved daily. (csv to s3 bucket or similar)

**Machine Learning**

Build on the existing model

Pass richer data to the model so that more nuanced recommendations can be produced.

develop around a data cycle:

- Develop Database schema for golf course information

* More detailed golf course information added to database
* users of app interact in relation to games booked and played, experience of courses
* feedback on games booked and played recorded.
* user interaction data stored in database and fed to ML model.
* additional context data fed to ML model (e.g. weather, traffic, other sports events etc)
* games not played (cancelled)
* pattern detection
* finding out how to reward *new* connections over repeat connections (less prone to off site transaction).

**Production Ready Mobile App**

UHI Moray will not publish a production ready application that handles live transactions to app store / google play etc. This lies outwith the remit of research.

UHI Moray will work with the client to streamline the application to be production ready, i.e. the criteria for getting an app published will be researched and the develpers will strive to meet these criteria where they relate to features within the scope of phase 2.

In practice that means refining existing user workflows in the app (booking a game, hosting a game) to deliver the functionality a production version of the app would have.

**User Testing**

Richer Data and evidence of data creation through user interactions

**Innovation**

Influence golf games, iteration of games, frequency, deepen information about games played.

Building on the basic features of the MVP app which model the hosting and booking process the next phase will allow us to progress with the innovative features of the product which are wrapped up in the creation of new data (user interactions), pulling in context data (weather etc) and training the ML model on a much larger dataset so the recommendation model can give much more nuanced recommendations.

User testing with a target group will allow us to find the blocks in the business processes and to start to get realistic user interaction data that can be fed back to the ML service.