Adventure Walk

Name:
Muhammad Katib Hussain

Course:
BSc (Hons) Software Engineering

Supervisor:
Matthew Paul Leslie Horton

University of Central Lancashire
UCLan

Project Context

The idea for this project was thought of a few months after the COVID-19 pandemic had started. Following lockdown rules, me and my friends were unable to go out and do things, changing our daily routine completely. We went for walks alone as we could not visit eachother given the circumstances but we also didn't want to just sit at home and get bored. We wanted to do something together that didnt involve playing on our computers all the time whilst still being able to have fun and compete with eachother.

Thats when I thought that I could make an app to gamify our walking exprience, have fun with eachother from afar, compete against eachother without staying at the computer and being able to have a walk like we had used to do.

Among that, we are able to get a decent amount of exercise while also getting a reward within the game for doing these walks. Finding out all the positive effects this could have for me and my friends, I decided I would make this the idea the basis for my project.

Main Objectives

- Create a RESTful API to communicate with my app

- Design a simplistic UI by utilising UX standards, guidlines and principles.

- Allow a user to track their step-count and earn rewards for completing quests.

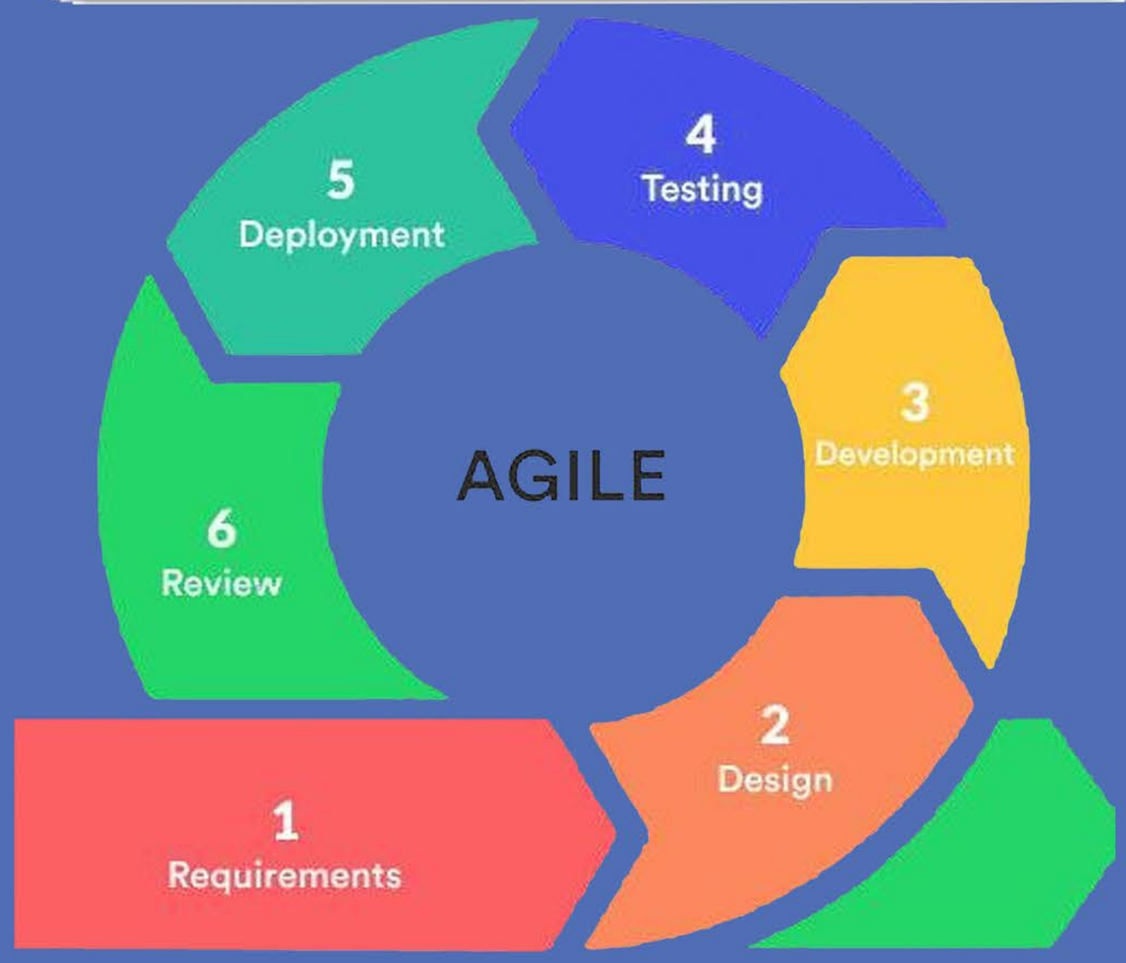
- Provide statistics measuring the patterns of activity on daily, weekly and monthly basis.

Future Work

- Adding a social system to allow friends and family to compete with eachother.

- Add leaderboard system to represent the most dedicated and achieved players per measurable category

- Add a plethora of modes to play and perhaps adding geocaching to a more physical and determined adventure



Technical Complexities

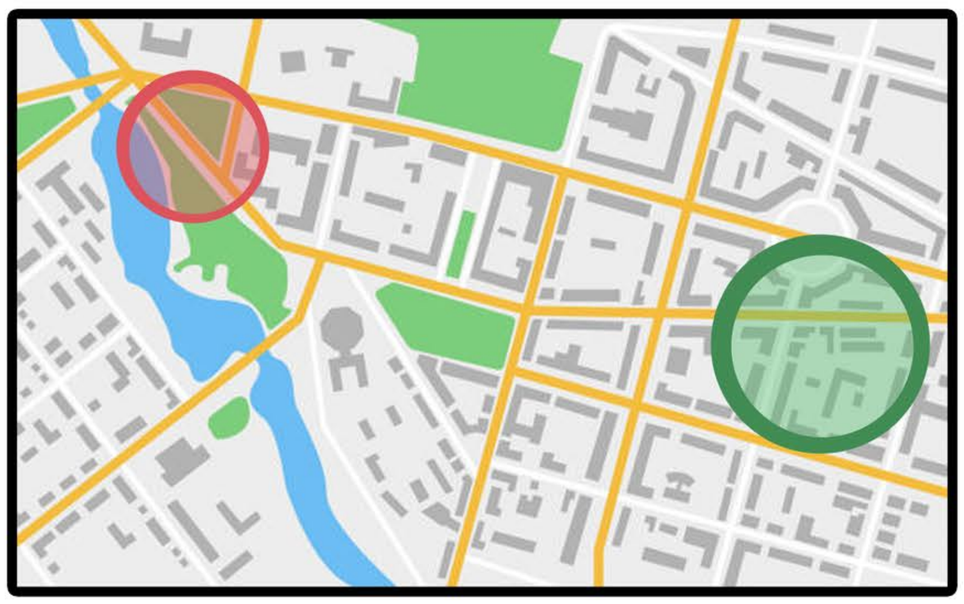
- Using mathematics to calculate a good approximation for setting a quest location and checking for quest completion

- Using EFCore to connect to my database and using the MVC design pattern with a layered file structure for my server's architecture

- Using Google Maps API to its full potential and using GPS/Network data to discern the user's exact location.

- Utilising packages to provide a graphical representation of data procured from the user in a succint form.

The Premise (User Interface)



The Red Circle

- Represents the players location
- A red circle encompassing the player of a 10 metre radius allows a quest to be completed if the useris close enough to the objective.

The Green Circle

- Represents the quest location
- Has a radius of up to 20 metres so if a user is close enough to the exact location of the quest, the quest is considered as complete.
- Radius exists so users don't enter dangerous locations to complete their quest