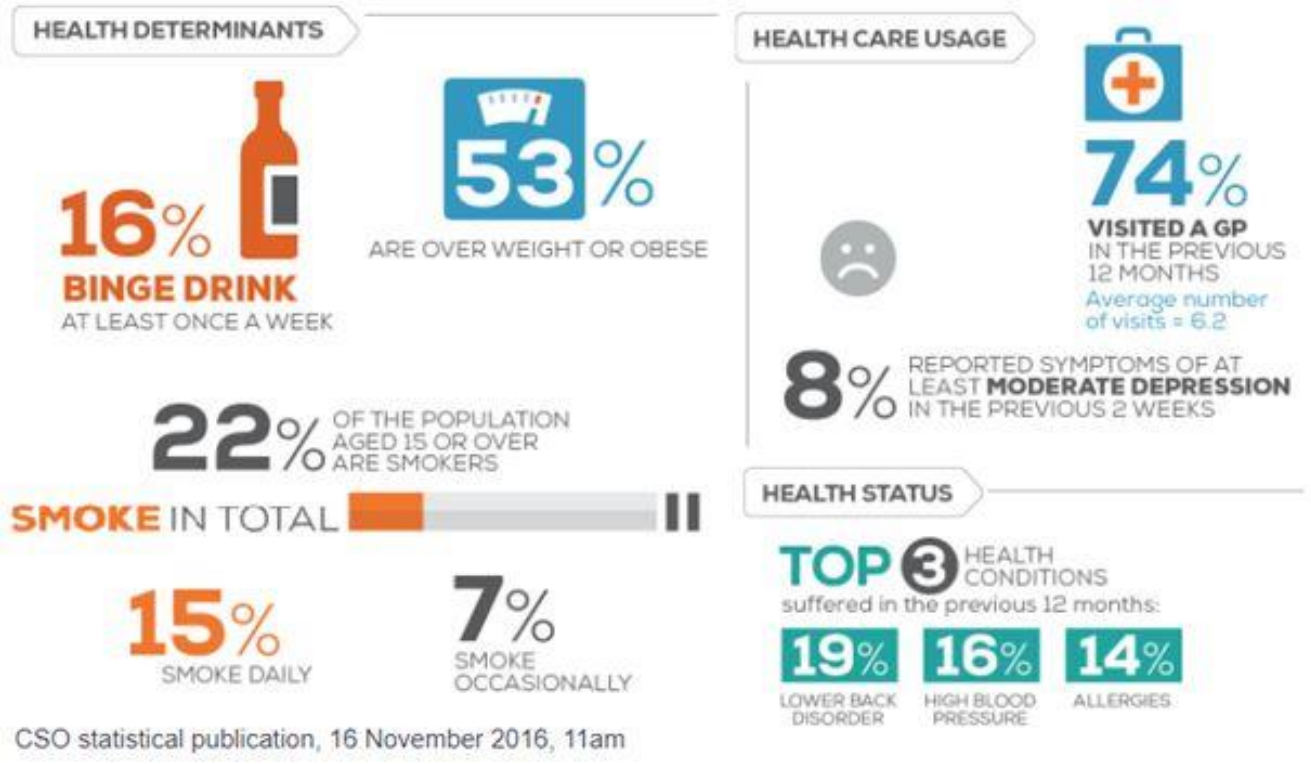
Wellbeing & Mindfulness Android Mobile Application

Problem Definition

- Overall wellbeing of Irish population is declining year by year
- Impact of Covid-19
- Main cause of deaths for young individuals in Ireland (Central Statistics Office, 2016):
  - Suicide
  - Chronic conditions
  - Drink driving



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Project Goal

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Through Researching the fields of

- Wellbeing and Mindfulness
- Overall Health & Mental Health issues in Ireland
- Mobile Application Development & connectivity with Smartwatches

to develop a suitable Android Mobile Application to help in

- stimulating good physical & mental health of its users,
- changing bad lifestyle habits to reduce stress & anxiety levels, and
- increase happiness and self-esteem.

Project Scope

Mobile application, accessible by the general population, used as a tool for overall wellbeing & lifestyle improvements

Project Objectives

- Perform Secondary research on mental health, wellbeing, and the impact of Covid-19 in Ireland
- Perform Primary research, following Mixed Research methodology:
  - Quantitative research
  - Qualitative research
- Perform comprehensive Literature review with historical and current perspectives on the topic.
- Structure System requirements in Conceptual model.
- Design, Code and Test the application.
- Perform User Evaluation, analyse the results to provide meaningful conclusions and scope for future work.
- Complete the Thesis and present the Project.

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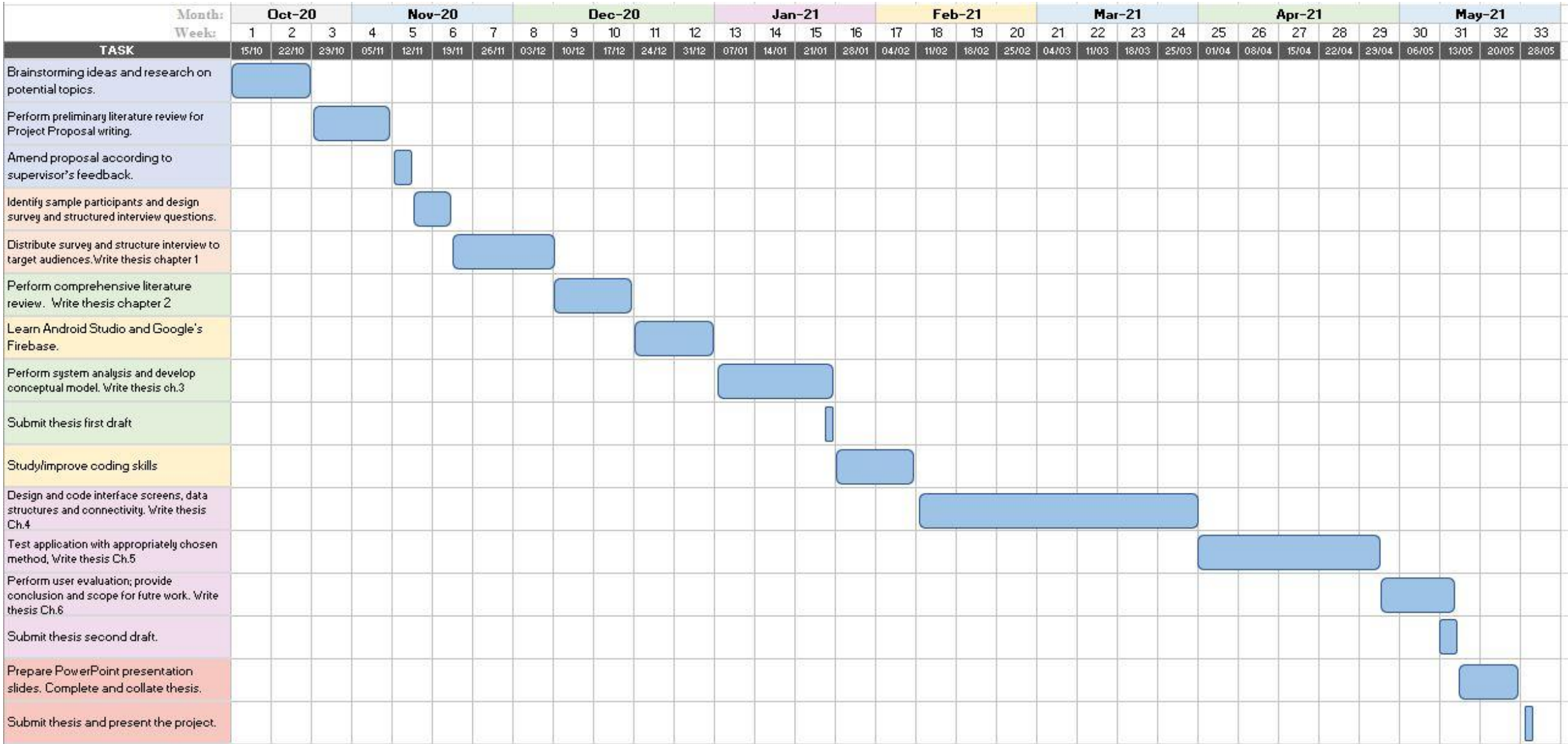
Project Gantt Chart



Chosen Research and Development Methodologies

- The *Mixed Research* methodology was used for this project:
    - Qualitative research
    - Quantitative research

- Dynamic Systems Development Methodology (DSDM)
    - Agile methodology for software development
    - Feedback-driven approach
    - Rapid Prototype development

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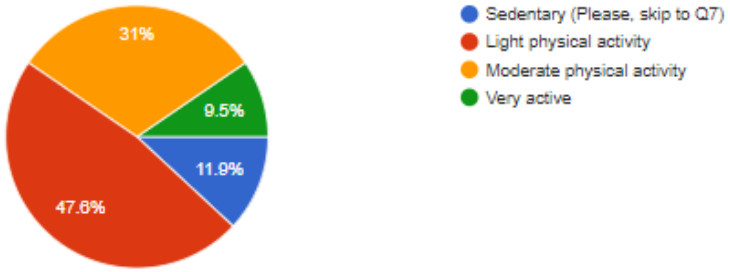
System Requirements: General Population Survey Results

- Tool used: **Google Forms**
- Total Number of respondents: **42**
- Performed in **November'2020**

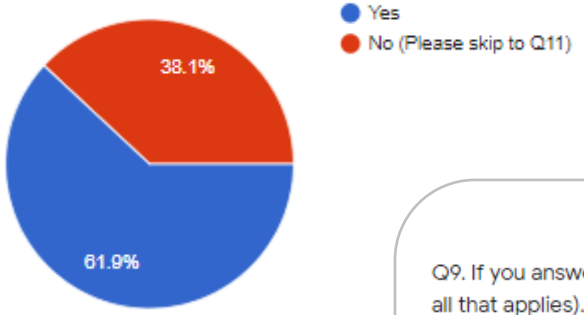
Q4. What is your current level of physical activity?

42 responses



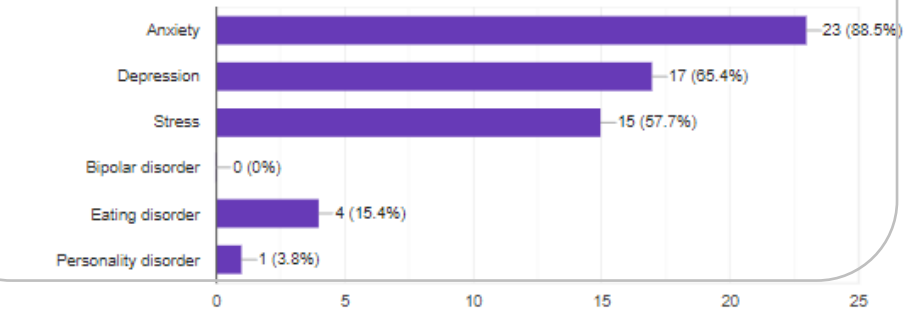
Q8. Have you ever had any mental health issues?

42 responses



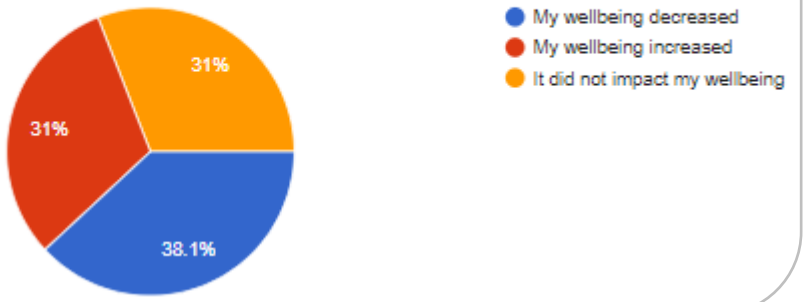
Q9. If you answered 'Yes' to Q8, which of the following did you struggle with? (Please, select all that applies).

26 responses



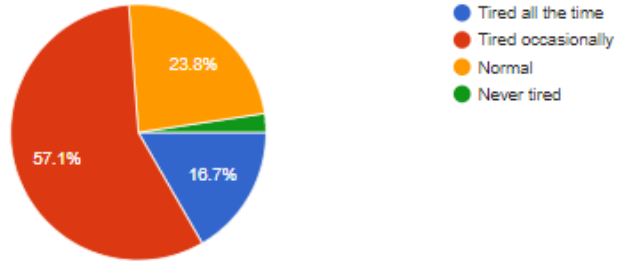
Q11. How has COVID-19 impacted your level of wellbeing?

42 responses

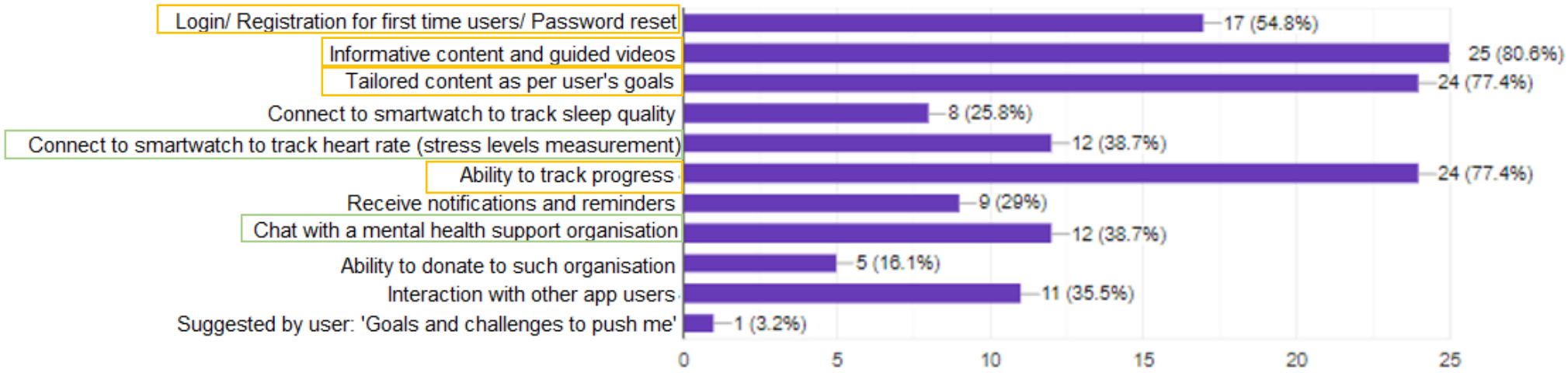


Q13. How would you describe your current level of tiredness?

42 responses

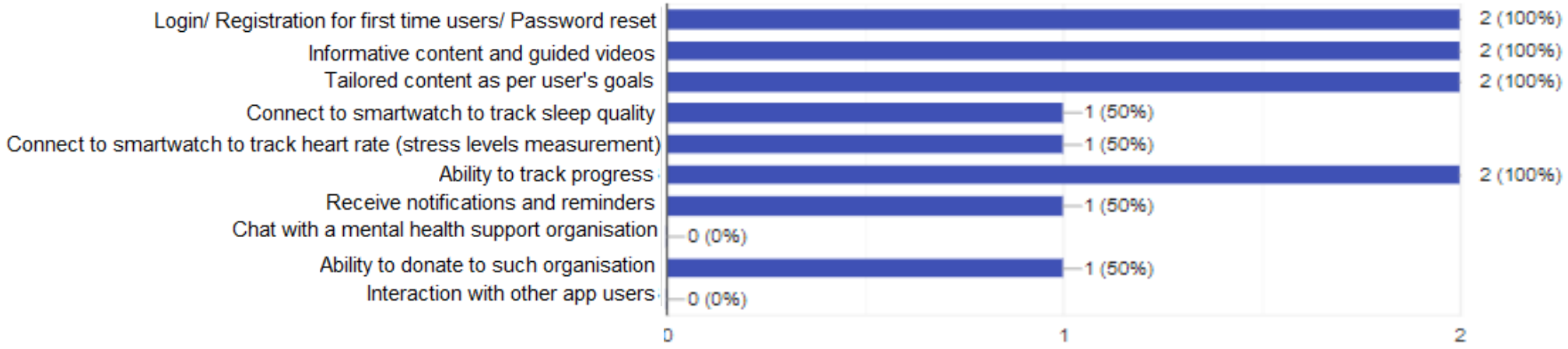


System Requirements: General population Survey Results



System Requirements: Management Personnel Structured Interview Results

- Tool used: **Google Forms**
- Total Number of respondents: **2**
- Performed in **November'2020**



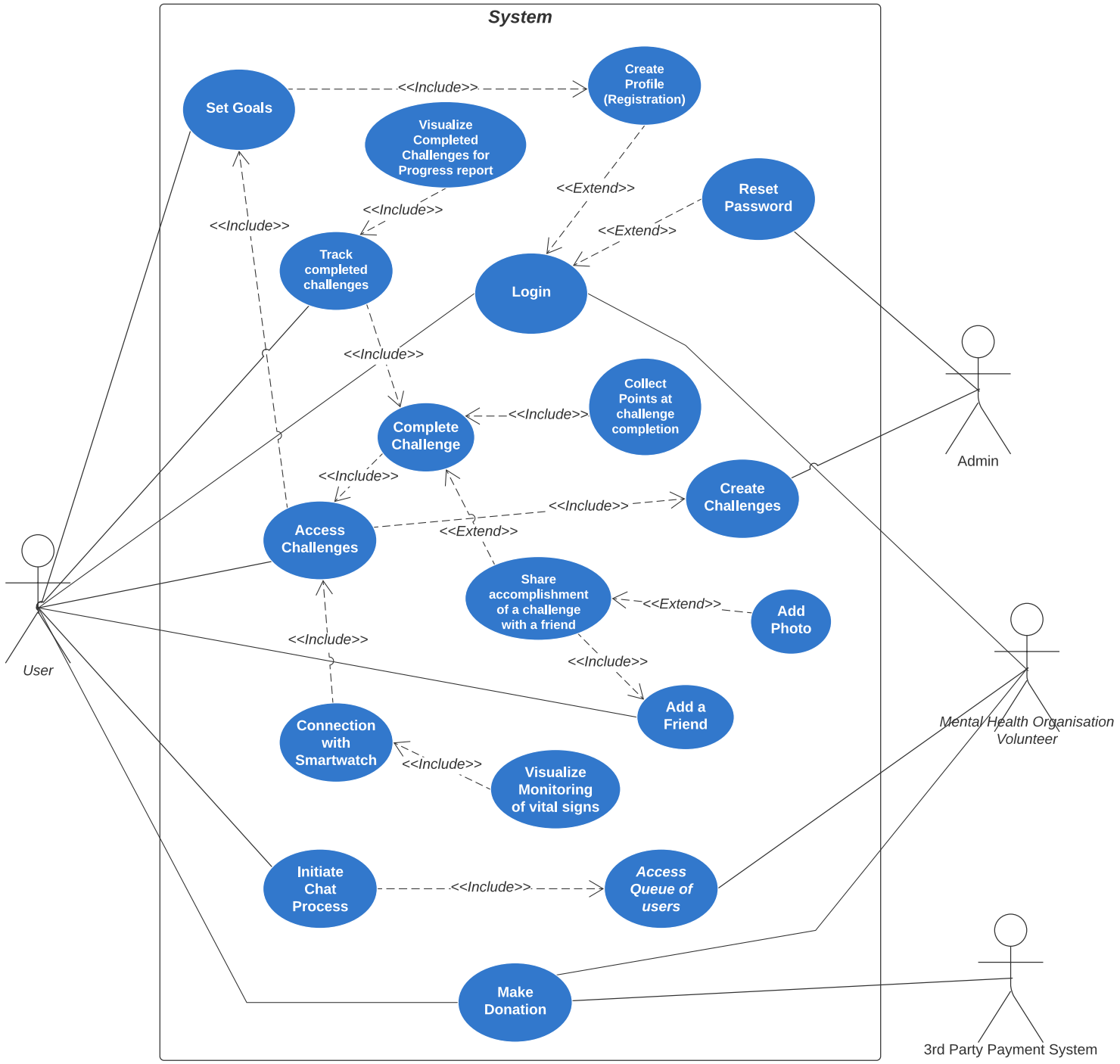
Conceptual Model:

Use Case Diagram

- **Actor**: role that a subject can play while interacting with the System.

- **Use Case**: representation of a distinct business functionality in a System.

- **<<include>> and <<extend>>:** stereotypes that represents relationships between Use Cases.



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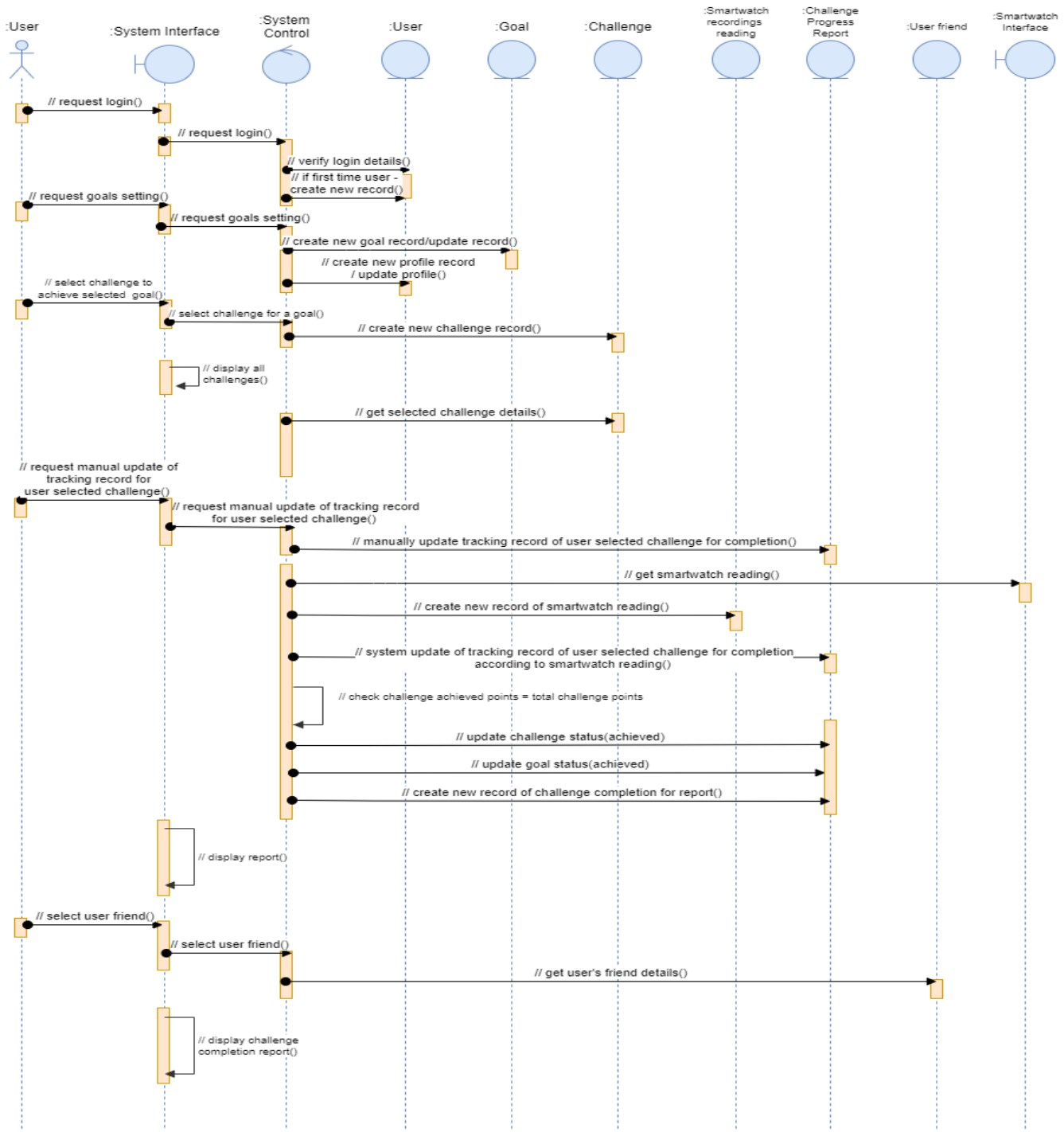
Conceptual Model:

Sequence Diagram

- Shows how the object's state changes over time.
- Key tool to understand flow and processing of the application.
- Shows interactions in the form of messages between objects.

- **Actor:** sends messages to the system.
- **Boundary class:** encapsulates the connection between Actors and Use Cases, providing an interface.
- **Control class:** handles the logic of the Use Case (controller of the system). It does not encapsulate any data.
- **Entity classes:** are persistent objects that encapsulate both data and behaviours.

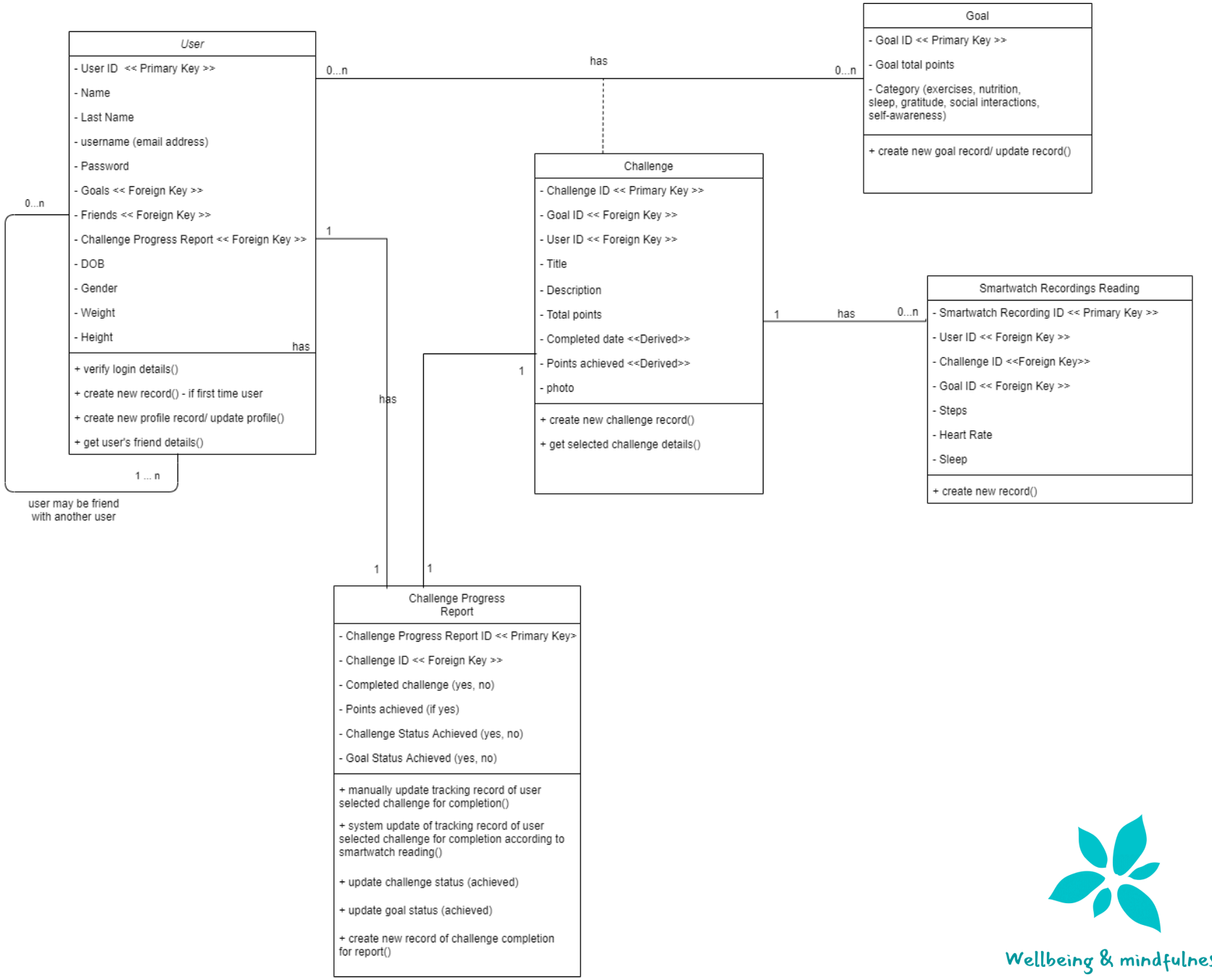


Conceptual Model:

Object Class Diagram

Shows the relationships between classes, interfaces and object instances.

Each class contains **attributes** & **methods**.



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Alternative Design Solutions

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Low-End Solution	Mid-Range Solution	High-End Solution
- Login/ Registration/ Reset Password - Set Goals - Access challenges according to Goals set - Complete challenges - Collect points at a challenge completion - Track completed challenges - Visualise completed challenges for Progress Report	- All functionalities from *Low-End* Solution + - Connection with Smartwatch - Visualise monitoring of vital signs	- All functionalities from *Mid-Range* Solution + - Share accomplishment of a challenge with a friend - Add photo of the accomplished challenge - Add a friend - Initiate chat process with Mental health organisation - Access queue of users in the chat (for Mental Health organisation only) - Make a donation

Mid-Range Solution was chosen as most realistic Design Alternative to complete the project on time.