

# ***ODYSSEY***



# **CS3216 Final Report**

## **Group 2**

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## About Odyssey

*Description of the application you have developed.*

Have you ever thought about revamping your lifestyle to become a healthier, happier and more mindful person, only to give up a week later? You're not alone: studies show that 80% of all goals that people set for themselves are abandoned within the first month! Now, if only you had a partner that you could count on to set you up for success and propel you past this initial month that kills off the dreams of so many.

Meet Odyssey, a community-based app that encourages you to achieve more and become a better version of yourself. On Odyssey, you can browse a range of categories that align best with your personal goal. With challenges that are carefully sourced and curated by the team over a wide range of categories, you will find something suitable for you whether you are interested in forming healthy routines or picking up a new interest.

Odyssey allows you to dream big while it does the nitty gritty for you: each challenge breaks a goal down into manageable, day-to-day tasks that increment slowly in difficulty and intensity. By providing you with concrete steps, you can be assured that they are on the right track to achieving your goal.

What really makes Odyssey complete is its community aspect. Working towards a goal alone can lead us to feel lost and lonely, and having someone to guide us or even just to hold us accountable has been shown to increase our likelihood to follow through on what we commit to. This is why Odyssey makes it easy for you to hop on a challenge with your friends or share your progress, struggles and achievements within your friend circle and a wider community.

Odyssey is also peppered with delightful, carefully designed details to make your in-app experience and overall journey enjoyable. With features ranging from a statistics column for those interested in measuring their progress to maps of unique lands that you can explore with your friends and collect mementos from, working towards your goals has never been breezier.

## Market Research

*Are there any existing applications out there that are similar? What makes your application special?*

### The Current Market

Personal development has always been a topic of fascination. Best selling books such as James Clear's Atomic Habits and healthy routine challenges shared around Youtube or social media platforms point to the general audience's desire to become the best version that they can be. The popularity of habit/ wellbeing apps geared towards personal development is therefore no surprise. Moreover, with such a large audience, there are also many niche users to cater to, hence arising to different apps that each offer a unique selling point to cater to a different set of user needs.

### Competitors & Limitations

We conducted research on popular existing applications which shared a similarity to our proposed idea. While our app does not intend to replace existing habit apps or hobby communities, it hopes to address a gap that is present in the current market.

1. **Habitica** is one of the more unique habit-tracking apps out there that aims to gamify habits by incorporating Role-Playing Game elements. However, it works mostly in isolation and one is not able to work with like-minded individuals in fostering a habit. Furthermore, Habitica requires users to know what they want or need to do to form a habit. This may not always be the case if the user is new to a particular field. Our application aims to provide challenges that can offer users a more structured and systematic way of nurturing a habit, and also provide communities around habits.
2. **Fabulous** is a daily routine planner that aims to inculcate habits through sticking to routines. Outside of a small subset of predefined tasks, it is up to the user to input their own tasks. However, this can be ineffective as users might not ease themselves into the habit through gradually ramping up the intensity of the task, which makes it hard to get into the habit. With our

application's curated challenges, users do not need to take the time to carefully define realistic and achievable goals themselves since they can simply follow challenges curated by the community that are proven to work.

- 3. Reddit** is a social content board with subcommunities that are formed around topics. Users can submit content to the site in the form of links, text posts, images, and videos, which are then voted upon by other members. On Reddit, users can find communities for most hobbies and interests. However, it can be quite daunting and overwhelming for beginners to enter these communities as they are unaware of where and how to begin. It can also be difficult for people who are simply trying to look for a new hobby to get started with as there is no centrally collated list of relevant subreddits available for perusal. Our application aims to provide beginner-friendly entry points to any community so as to ease beginners into the hobby / interest. Having such a centralised system as in Odyssey that shares how to get started on various hobbies would therefore be helpful in this regard, and a side benefit would even be that it would raise awareness for relatively lesser known hobbies and expand their community.

## Milestones & Timeline

*Review of milestones and timeline for the project (which ones did you hit, what ones did you miss?).*

Below is a table of comparison between the initial timeline that we had planned and our actual production timeline. Although we did not follow our initial timeline to a tee, our actual timeline mostly adhered to the original milestones that we set out to complete.

## Legend

- Completed as expected
- Pushed back/ delayed
- Moved forward
- Forgone
- New feature/ feature that was initially unaccounted for

Sprint	Initial Timeline	Actual Timeline
1	<b>Planning:</b> <ul style="list-style-type: none"> <li>User interviews for requirements gathering</li> <li>User flow, UI design mockups</li> <li>User interviews based on mockups</li> <li>Planning of database schema and API design</li> </ul> <b>Development:</b> <ul style="list-style-type: none"> <li>Authentication</li> <li>User profiles (basic features)</li> <li>Add public challenges</li> <li>Join/Subscribe to a challenge</li> <li>Feature for users to check off/ update progress</li> </ul>	<b>Planning:</b> <ul style="list-style-type: none"> <li>User interviews for requirements gathering</li> <li>User flow, UI design mockups</li> <li>User interviews based on mockups</li> <li>Planning of database schema and API design</li> </ul> <b>Development:</b> <ul style="list-style-type: none"> <li>Authentication + login/ register page</li> <li>Set up home, profile, explore and category page and related backend</li> <li>Edit profile feature</li> <li>Set up store</li> <li>Deploy app</li> </ul> <b>Design:</b> <ul style="list-style-type: none"> <li>Initial design of assets for category pages</li> </ul>
Checkpoint 1: Progress Report 1 Submission		

2	<p><b>Planning:</b></p> <ul style="list-style-type: none"> <li>User testing with MVP (and seeded challenges)</li> </ul> <p><b>Development:</b></p> <ul style="list-style-type: none"> <li>Challenge page: statistics tab</li> <li>Home page: calendar view</li> <li>Add friend feature</li> <li>Notifications for friend requests</li> <li>Onboarding screen</li> <li>Set up challenge journey map (integrate 3js and base map template + auto generate map)</li> <li>Add Google Analytics</li> </ul> <p><b>Marketing</b></p> <ul style="list-style-type: none"> <li>Refining of marketing strategy</li> <li>Initial marketing channels setup (social media channels)</li> <li>Create landing page</li> <li>Designing marketing collateral</li> <li>Set up post schedule and starting with outreach and posts</li> <li>Post initial post</li> </ul>	<p><b>Planning:</b></p> <ul style="list-style-type: none"> <li>User testing with MVP (and seeded challenges)</li> <li>Revise features based on feedback received</li> </ul> <p><b>Development:</b></p> <ul style="list-style-type: none"> <li>Join/ Subscribe to a challenge</li> <li>Set up challenge details page</li> <li>Challenge statistics</li> <li>Date carousel and cards in home page</li> <li>Add Google Analytics</li> <li>Implement feed: post + reactions</li> <li>Allow users to enrol and checkoff tasks</li> <li>Notifications for friend requests</li> <li>Add snackbar/ modals to provide more feedback to users</li> <li>Temporary features for user testing: onboarding modal and provide feedback button</li> </ul> <p><b>Marketing</b></p> <ul style="list-style-type: none"> <li>Refining of marketing strategy</li> <li>Initial marketing channels setup (social media channels)</li> <li>Create landing page</li> <li>Designing marketing collateral</li> <li>Set up post schedule and starting with outreach and posts</li> <li>Post initial post</li> </ul>
Checkpoint 2: Progress Report 2 Submission		

3	<p><b>Development:</b></p> <ul style="list-style-type: none"> <li>• Mementos page</li> <li>• Implement feed: post + reactions</li> <li>• Share updates/ challenges with friends/ community</li> <li>• Forfeit challenge</li> <li>• Various issue fixes and enhancements</li> </ul> <p><b>Marketing:</b></p> <ul style="list-style-type: none"> <li>• Prepare and post collateral</li> </ul> <p><b>Miscellaneous:</b></p> <ul style="list-style-type: none"> <li>• Prepare for presentation</li> </ul>	<p><b>Development:</b></p> <p><i>Features</i></p> <ul style="list-style-type: none"> <li>• Share updates/ challenges with friends/ community</li> <li>• Complete friends feed</li> <li>• Integrate maps with challenges</li> <li>• Desktop view</li> <li>• Forfeit challenge</li> <li>• Onboarding</li> <li>• Display mementos</li> <li>• Display most popular challenges within each category</li> </ul> <p><i>Others</i></p> <ul style="list-style-type: none"> <li>• Complete seeding of challenges</li> <li>• Style existing pages</li> <li>• Various issue fixes and enhancements</li> </ul> <p><b>Design:</b></p> <ul style="list-style-type: none"> <li>• Design 3D assets of land, mementos and characters</li> <li>• Design assets for remaining categories, onboarding page and presentation</li> </ul> <p>Design STePS related assets (poster, header etc.)</p> <p><b>Marketing:</b></p> <ul style="list-style-type: none"> <li>• Prepare and post collateral</li> </ul> <p><b>Miscellaneous:</b></p> <ul style="list-style-type: none"> <li>• Prepare script + slides for in-class pitching/ STePS</li> <li>• Rehearse for presentation</li> </ul>
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## What was good

Our initial decision not to assign strict dates to complete each feature turned out to be quite helpful for the team in hindsight, because we had more flexibility to revise our timeline when new changes arose and we also found that some features took more/ less time than expected. Most of the key features that we implemented in the end were also taken into account, which meant that we were able to plan ahead without getting bogged down by minute details.



## **What was not so good**

As can be seen between sprint 1 and 2, there were some points when our development fell behind schedule as some of us needed time to adjust to the codebase/ tech stack. It was also more time consuming than we had initially anticipated to prepare, complete and process user interviews and testing. However, we happily managed to pick up the slack near the end of sprint 2.

Another mistake we made from the start was that we falsely thought that our development period would end before STePS, and hence initially planned our timeline as such. We only later learnt that we should have completed it much earlier so that we could have had more time to begin the marketing process.

## **What was unexpected**

Our development of features was also slightly slowed by other factors. For example, much time was spent going back to refine existing features after requirement changes/ UI/UX decisions/ the discovery of bugs. Moreover, the initial timeline was also up for change in the first place since we had yet to take into account results from user requirements gathering or user testing. The results that we obtained and processed led us to introduce, scrap or improve features that we had initially planned, causing deviations from the original timeline.

There were also more features to implement than expected. For example, in order to make the user testing experience as smooth as possible, we also had to include an onboarding modal and a feature for users to input their feedback easily. These features, although not initially accounted for and also not present in our final app, took up some time as well. Another key feature that only revealed itself as we progressed along was desktop view so as to provide a good user experience across all platforms.

## Individual Contribution & Roles



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UX, full stack, deployment



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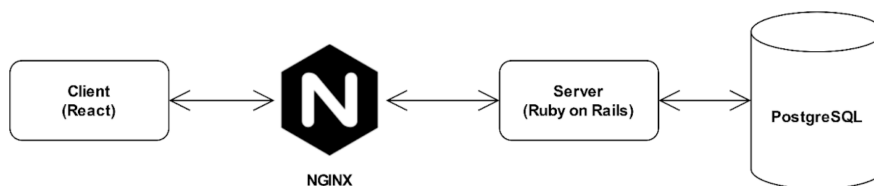
@sebastian

UX, full stack, deployment

We would also like to thank Uncle Soo and Sau Sheong for their encouragement and invaluable guidance throughout our development process. Their advice provided us with food for thought and encouraged us to critically examine the features of our application.

## Application Design

Odyssey is a progressive web application created with Ruby on Rails, React and PostgreSQL as our database management system.



### Frontend Architecture

The frontend of Odyssey is built using React with Typescript and is bootstrapped using Create React App.

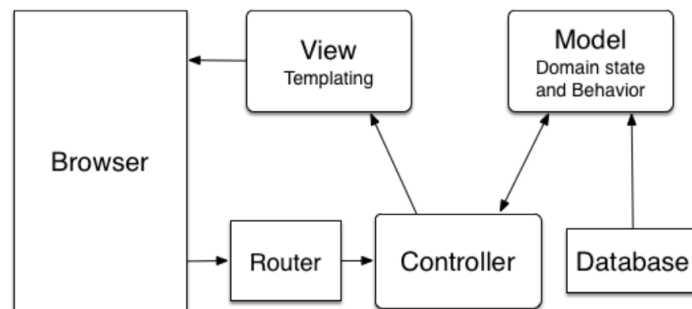
The frontend utilises the following core libraries:

- *Redux* for state management
- *axios* for API communications with the backend

- *react-router* for client-side routing
- *MUI* for ready-to-use React components
- *Sass* for CSS styling
- *Three.js* for 3D graphics

## Backend Architecture

The backend of Odyssey is built using Ruby on Rails and makes use of the Model-View-Controller (MVC) architecture.



MVC is a design pattern that divides the responsibilities of an application to make them easier to reason about. The responsibilities of the various layers are as follows:

- **Model:** handles the domain state and behaviour. Each of the models map to a corresponding table in the database.
- **View:** handles the presentation of the user interface. In the case of Odyssey, the view layer is responsible for constructing the API responses.
- **Controller:** handles the application logic. Incoming API requests are routed to the appropriate controller by the router. Then, depending on the request, the controller will create or update data in the model layer, or retrieve data from the model layer to be passed to the view layer.

By separating these concerns, we are able to achieve modularity, making Odyssey easier to extend from.



## Deployment Configuration

In order to make the deployment of Odyssey easy and reliable, we made use of containerisation to ensure that the deployed application runs in a consistent, reproducible environment. This was done through the Continuous Delivery (CD) pipeline that we set up. Upon changes being merged into the master branch of the repository, the backend and frontend applications are automatically built into Docker images and pushed to GitHub's container registry. Deploying the updated application then involves logging into the production server and pulling the updated images.

## Database Schema

To summarise the semantics of our database schema (shown in the previous page):

- A **challenge** belongs to a **category** and has an associated map. A challenge also has many tasks that need to be completed.
- A **user** can enrol in a **challenge**, and this information is represented by the presence of a corresponding row in the *user\_challenges* table. The schedule that the user wishes to adopt for the enrolled challenge is represented by the *schedules* table.
- Upon enrolling into a **challenge**, the **tasks** that a user needs to complete are represented by entries in the *user\_tasks* table which have a direct correspondence to the entries in the *tasks* table.
- A **user** can send and receive many **friend requests**. This information is represented by entries in the *friend\_requests* table.
- When a **friend request** is accepted, a row in the *friendships* table is created to indicate a **friendship** between the 2 associated users. The corresponding row in the *friend\_requests* table is also deleted.
- A **user** can create many **posts**, and each post must be associated with a corresponding **challenge**. Similarly, a user can also have many “**reactions**” to a post, and these “**reactions**” are represented with the *post\_reactions* table.
- Prior to our official launch, our landing page was used to collect the **emails** of interested users. The collected emails are stored in the *landing\_emails* table.

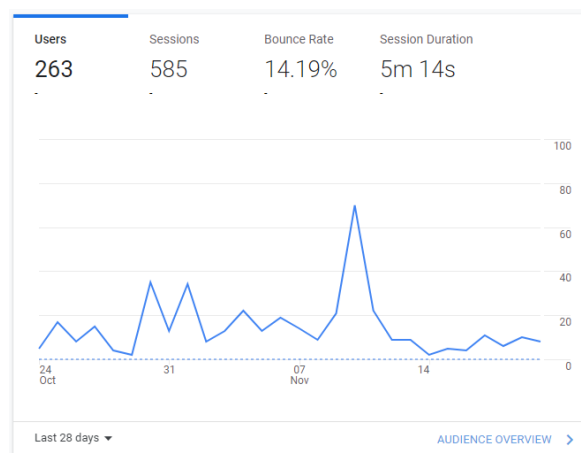
## User Adoption

*Report on the current number of users who have installed, active users, etc. Perhaps Google Analytics data and screenshots (or similar analytics tools) to support your claims.*



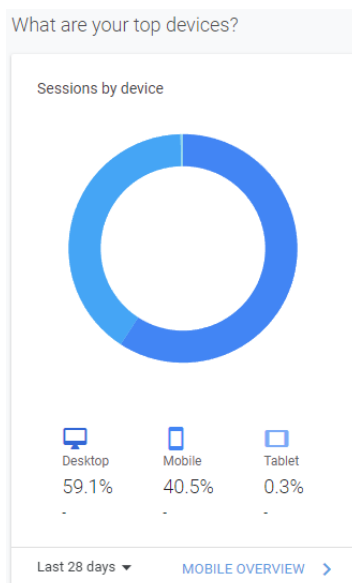
As part of our marketing campaign, we created [Instagram](#) and [Facebook](#) accounts to showcase the features and benefits of our app. As we had set up the accounts before the completion of our MVP, we also created a landing page with an email funnel so that interested viewers could be kept posted. Over the span of our instagram account, we reached a total of 284 accounts and gained 84 followers.

As of 21st November 2021, Odyssey has managed to acquire 101 users, with 263 unique visitors (however, we only integrated Google Analytics 28 days ago so the actual number of users may be higher). This works out to be a 38.4% conversion rate, which can be attributed to our emphasis on building an attractive landing page. This is a lot higher than the average landing page conversion rate, which stands at around 2.35%<sup>1</sup>.



```
Loading production environment (Rails 6.1.4.1)
irb(main):001:0> User.all.count
=> 101
```

<sup>1</sup> <https://www.impactplus.com/blog/what-is-a-good-landing-page-conversion-rate>



Our decision to implement a desktop view was also well substantiated by user data as we found that a majority (59.1%) of users accessed our app via desktop.

## Future Plans & Strategies

With the conclusion of Sprint 3, Odyssey's main features are more or less complete. A feature that we are considering adding soon is to allow users to create their own challenges. We had shelved this feature temporarily as we realised this feature comes with its own set of complications that we might not be able to resolve well in time. For example, to differentiate between the quality of user-created challenges, we would also need to introduce a set of features for moderation such as upvoting, or potentially implement admin roles to approve challenges to be posted publicly. Given the unexpected amount of complications that come from supporting user-created challenges, we prioritised providing quality curated challenges to our users and polishing the other aspects of our application first. Now that we have a more flexible and free timeline, we have the capacity to revisit this feature. We think that this feature can push for our user base to grow sustainability as the more users are onboard our app, the greater the incentive for other users to join our app due to the larger community and challenges available.

Other considerations include allowing users to customise their challenge to be public, private, or just shared among friends, introducing templates to facilitate

the ease of creating new challenges, and supporting the customisation of the accompanying map and memento.

Another main focus now would be to add more categories and challenges into the application to allow Odyssey to appeal to a wider range of users. Given Odyssey's unique selling point of having curated challenges, an obstacle we foresee in doing so is that the development team might not have the necessary domain knowledge to come up with our own challenges. To overcome this, we plan on contacting and partnering with domain experts and influential people in designing challenges for their field of expertise.

We also plan on partnering with organisations that champion causes for healthy living. A potential partnership is with the Health Promotion Board (HPB), which has several challenges such as [Sleep Challenge](#) and [National Steps Challenge](#). Establishing these partnerships would lend more credibility to Odyssey through increasing the quality of curated challenges and also benefit HPB by having increased publicity and participation of these challenges as well as having a community around these challenges.



## Insights

Through the time we spent together working on Odyssey, we have learned many lessons.

### *Ideation*

Starting with ideation, we practised the skill of identifying real-world problems and current gaps in the market. From the long and arduous process of continuously coming up with and shooting down ideas, we learnt how to critically evaluate and identify what makes an idea good and worth solving.

### *Market Research & User Testing*

Next, from conducting market research and user interviews, we learnt how to design an application such that it addresses what users really want and need instead of what we assume users want. It is important to reach out to users in early stages as their feedback and insights play an important role in shaping the overall direction of an application and what we choose to focus on. For example, there were many possible approaches that we considered to encourage users - positive vs negative reinforcement, being strict with deadlines vs being flexible etc. Our user interviews helped us to decide on a direction to take, which was to focus on positive reinforcement and being lenient with deadlines, plus accommodating the variation in users' schedules as a big factor on whether they have the capacity to follow through with a challenge. Having this settled as early as possible made sure that we would not have drastic overhauls in the later stages of development.

### *Learning how to learn*

As we developed our project, we picked up new technical skills such as ThreeJS. More than just picking up a specific library or framework, we learnt how to first start with a vision, then having the confidence to dive into the vision and learn the necessary skills to make it work. Over time, as popular frameworks deprecate and new ones are continuously introduced, the skill to continuously reinvent ourselves and adapt to changing technologies is an important one to have, and we are grateful that we had the opportunity to learn how to learn through this intensive process.

And with that we have come to the end of our Develop Odyssey challenge! Thank you to everyone along the journey, especially Uncle Soo and Sau Sheong.

