Prototype stage user evaluation:

Vilhelmina tested the app at its prototype phase. The game at this point had no router, but all the pages were functional. Meaning, there was very bad UI and UX and no consideration was put to efficiency for the user etc. Furthermore, the API at the time could only return one fact per country, so the "five facts" for each country was the same fact over again. Vilhelmina did not understand that she was allowed five tries per country, and did not know that she would get 5 facts. Instead she thought the fact was too unspecific and it was very hard to guess the country with one fact. To address this, we changed the game page to include both the current fact as well as x amount of text fields that read "guess to unlock" to show the user the amount of facts.

After trying out the game, she commented on the UX of the page. After informing her that the pages will be separated at a later stage, she focused on each page individually. She thought the game page was simple, but should be centered. Furthermore, she thinks the facts presented are too ugly, plain text is not good enough. Lastly, the fonts should be uniform on the page. To address these complaints, we made sure to have a preferred page styling which is present through the entire app.

Lastly, she complained about the navigation bar at the top. She said the colors did not match and her biggest complaint is that the whole button turns white when she hovers over it, but only a small part of the text is clickable. To address this, we changed the page styling a bit and made the pressable parts a little bigger.

Formative stage user evaluation:

Status update from user eval: - Game still has a few issues:

- 1. Rate limit issue, the api throws error when trying to access it too much. We made sure to optimize the API requests through batch requests instead of one fact per request. Furthermore, we now try to fetch from the API again after getting an error (with a sleep between to make sure we don't exceed the access level). This stops the site from breaking after getting an error.
- 2. Country list expansion. Each user should get random countries from the list but should not get the same country. The list was too small, so we made sure to expand it greatly. It was considered to pop each country that was guessed, but from a practical standpoint, having more countries instead solved the issue. It also made each attempt more unique.
- 3. Some countries in the list have alternative names (i.e. UK, Great Britain, United Kingdom, England), the game doesn't recognize all these names. To address this issue, we considered implementing a dictionary for each each country and include all the possible other names for it. Instead, we opted for a third party component for the input, which displays all the valid countries. This way, if the user is unsure if they should type "UK" or "united kingdom", they can simply start writing and the component will match their input to the countries available. This also allows the user to scroll in the list of all

countries. We decided that this feature was a lot better for the game as it ended up looking very nice from a UX perspective as well as providing some important user feedback (showing if their guess is valid or not).

- 4. Game view UI needs a little bit improvement in design, now they look a bit empty. This issue was somewhat address in the prototyping stage, but clearly was not enough. More work was put into the UI for the facts. Now they show 5 distinct blocks with either a number and a fact or the text "guess to unlock".
- 5. User wanted to be able to look at the facts after the round was complete. So we added the functionality of clicking out of the result page, or pressing home to navigate back to the game view with the facts for the round.
- Leaderboard implementation missing names, defeats the purpose. To address this complaint, we implemented the firebase displayname functionality. It serves as a username and now displays with the score of the user. If an account was created before implementing the display name, "anonymous" will show instead.
- -Website looks pale white for the user who didn't enable dark mode. More work was put into the css to make sure we don't have anything user specific that could alter the look significantly. Also we made sure that the site has followed our plan for the overall look and feel.
- -User settings still don't have actual functionality, we should probably replace it with profile like names, latest streaks, profile pic? We did indeed change the settings page to only display facts about the user instead of allowing them to change email etc. To keep it simplistic, we decided to only show (and save) the users' latest attempt this session as well as their overall high score.