

OVERVIEW

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Design Thinking Phases: PROTOTYPE // TEST // DEFINE

LAST WEEK'S ACTIVITIES (WEEK 10):

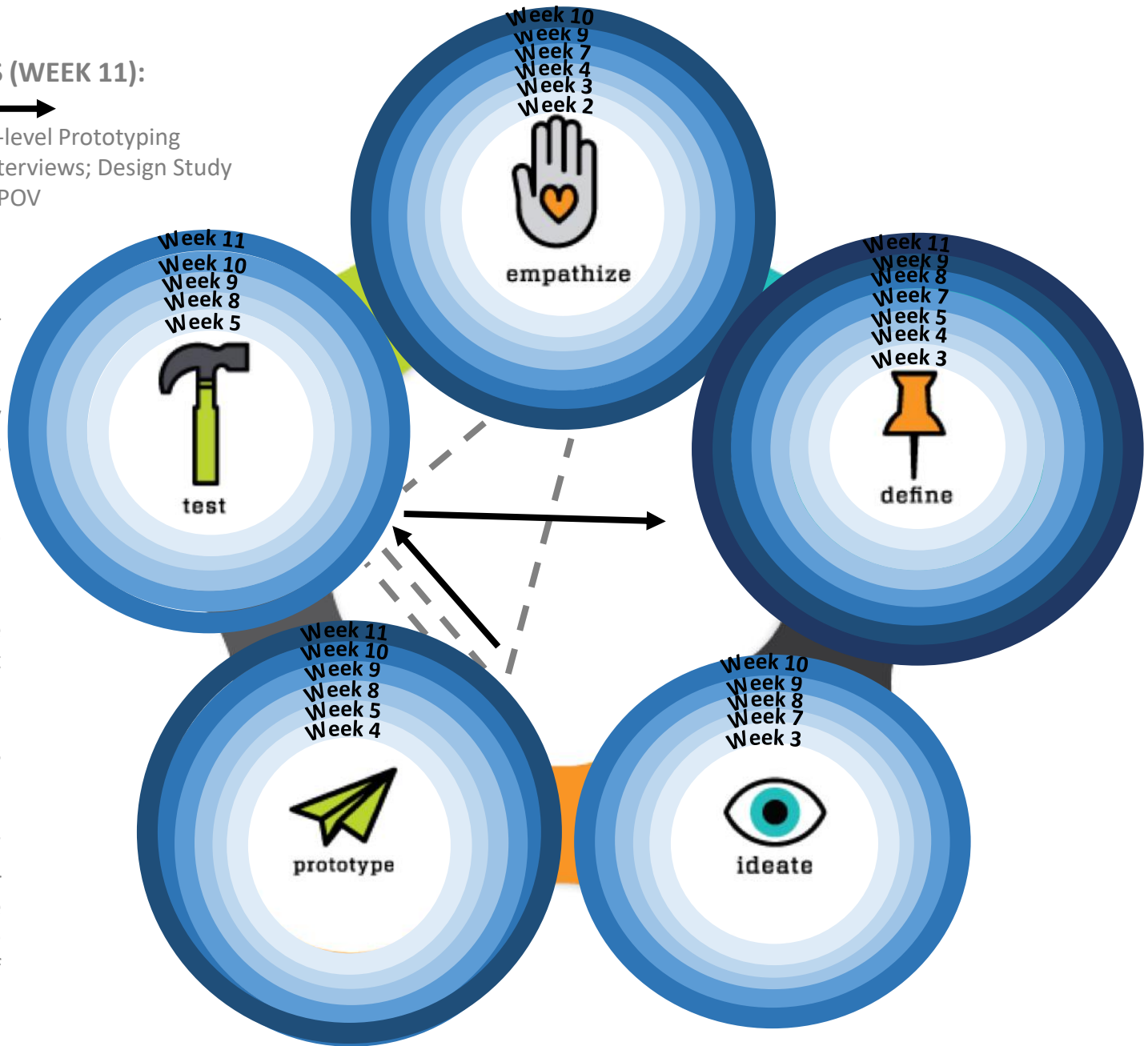
- Marked by — — — — —
- (Prototype) Arduino; Mid-level Prototyping
- (Test): “In the Wild” ; Semi-Structured Interviews
- (Empathize): Observation; Bodystorming
- (Prototype) Arduino; Mid-level Prototyping
- (Test) “In the Wild” ; Questionnaire

CRITICAL REFLECTION

- For our final WDP, we want to reflect on our current activities as well as our overall design progress in the last 11 weeks. In terms of this week, we continued to focus heavily on PROTOTYPING and TESTING. This included redeveloping code, fixing a few features of our design, and engaging with two different Design Study methods taught to us in Week 9 (Spatial Inhibitors and Honeypot Effect). Of this work, the two design study methods were particularly helpful and taught us much more about where and what time we should display our design.
- Alongside this work, we returned to the DEFINE phase by cleaning up our Space Saturate, reviewing our insights from interviews, evaluations, observations, etc., and refining our POV. Importantly, this allowed us see the results of our Design Study much more clearly. For instance, while we were first discouraged to see several students pass by our design without playing, our data reminded us that only students *on a study break* are our target audience. In the future, we would have profited from re-engaging with this data more thoroughly *before* our final TESTING, as that may have led to different questions, but reviewing it after was still helpful.
- Our iteration to the right displays many “work rings” produced in the past 11 weeks. Each phase has an average of 5.8 rings, with 5 being the lowest and 7 being the highest. In general, we are happy with the shape of our design journey – attention was given to Empathize, Define, Ideate early on in the course, and more attention to Test/Prototype once we had collected user information. Ideally, we would have been able to Define our POV in a smoother way, as that took lots of time; nevertheless, the struggle paid off in the end as we now have a clean groupings of data, a number of POV iterations with feedback, and Empathy/Affinity maps that reveal the desires, wishes, habits, etc. of our user.

THIS WEEK'S ACTIVITIES (WEEK 11):

- Marked by —————→
- (Prototype) Arduino; Mid-level Prototyping
- (Test): Semi-structured Interviews; Design Study
- (Define): Space Saturate, POV



METHODOLOGY

Method(s) used: (Prototype) Arduino; Mid-level Prototyping (Test) Design Study (Define) Space Saturate, POV

PROTOTYPE

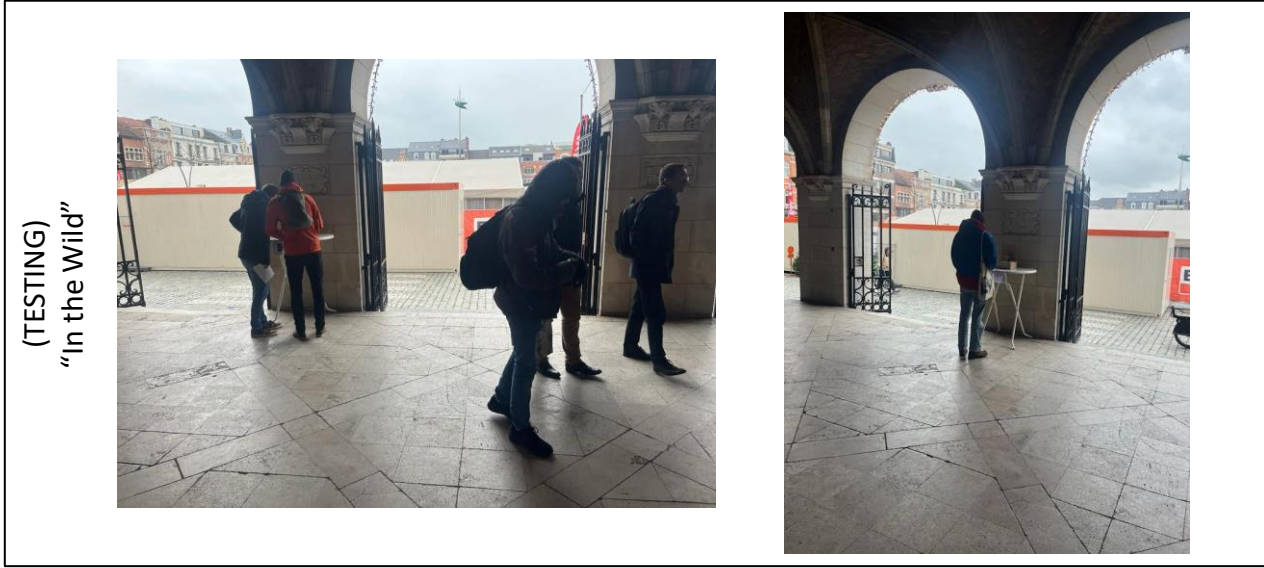
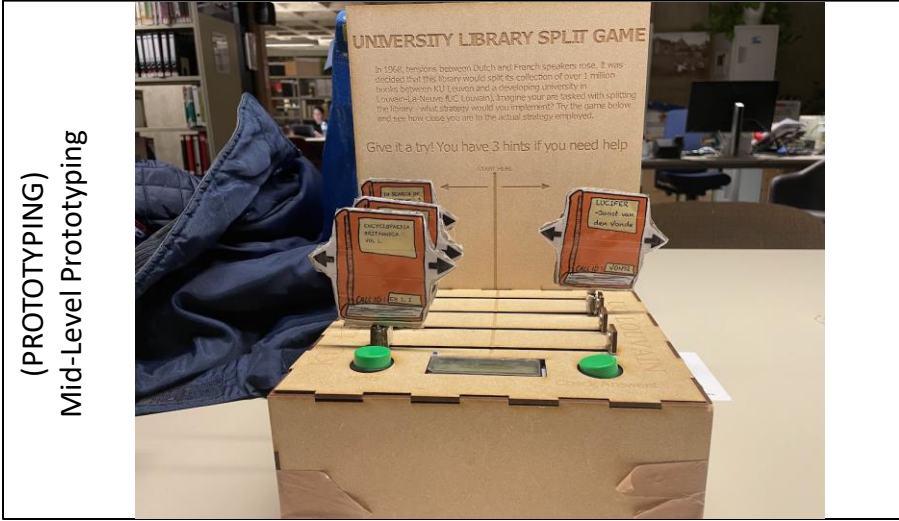
- *Mid-Level Prototyping*: Mid-Level prototyping occurred at the central library on Monday and Tuesday evening. The library provided us with a table we could work at, and we stationed ourselves in a small corner with enough space to move around. We met for multiple hours at a time and focused specifically on strengthening certain physical features of our design (such as the location of the sensors). Different materials – metals, tape, superglue, cardboard, etc. – were experimented with, and we continued to try different combinations until everything worked (almost) perfectly.
- *Arduino*: After our meetings, we worked independently on the required code. Mina could test her code on the device itself (since she primarily keeps the prototype at her residence) while Jacob tested with a separate LCD screen and small buttons. Following this work, we met up and discussed what had been done.
- After receiving strong feedback in our evaluations from Monday and Tuesday, further adjustments were needed to our prototype. We worked on this most of the day Thursday and will work on it a little bit more on Friday.

TEST

- *“In The Wild Testing”*: Testing was done outside the library for multiple hours on Wednesday 15/12. The prototype was placed on a table and left for users to interact with. We “hid” by pretending to be students on a break near-by and watched to see how different users interacted with the prototype. Photography was used to document the different levels of user engagement and then employed later in our Design Study. Importantly, we also gave specific attention to the different ways users interacted with the physical environment surrounding the design. An observation template that we developed in earlier evaluations was used to help document these insights.
- *Semi-Structured Interviews*: A working list of questions we developed in previous evaluations was used (with slight adjustments made) in this week’s user evaluations. Emphasis was placed on discussing certain features we had spent a great deal of time developing, though we left room to hear users’ honest feelings surrounding their “In the wild” experiences with the design.
- *Design Study*: Please see our report on the Miro page for more specific information on our Design Study results.

DEFINE

- *Space Saturate*: Our Space Saturate was cleaned up and new data added for this week’s work. We re-examined older quotes/insights to ensure we have a firm and consistent understanding of our user. From this information, we began to develop a neat and final profile for next week’s presentation.



RESULTS

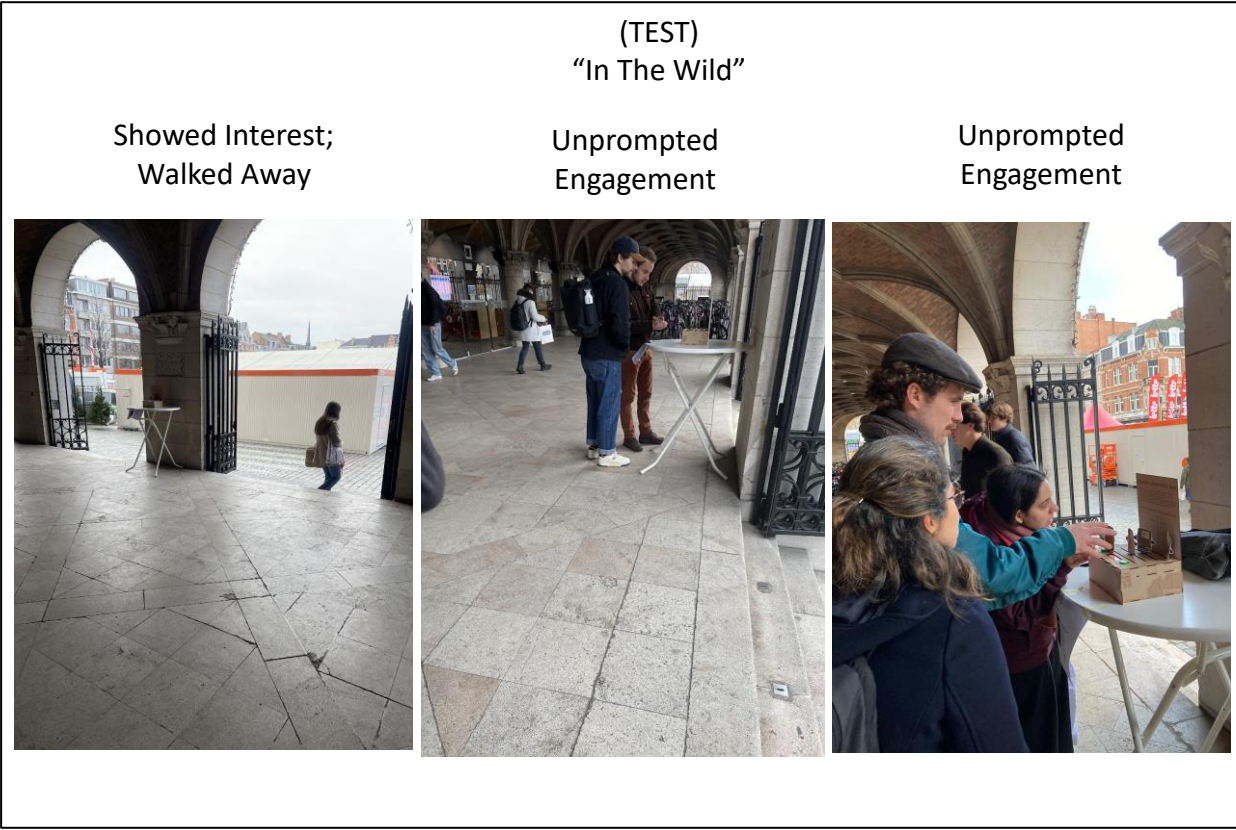
PROTOTYPE

- *Mid-Level Prototyping*: In previous weeks, one problem we had encountered was ensuring that users moved the sticks all the way to the end of the board (i.e., that the touch sensors inside our prototype made contact with the aluminium on our sticks). To fix this, we superglued magnets to the board and small metal squares to the sticks so each book could “lock into place” (see Image on previous page). Additionally, we redeveloped small “holders” inside the device in order to stabilize each of the sticks.
- *Arduino*: Our code correctly provides hints and correct answers. However, some of the hints proved to be slightly confusing for our users and the correct answer button not engaging enough. We fixed this by 1.) changing the text and 2.) redeveloping when this text would appear.

TEST

- *“In the Wild Testing”*: Our approach to “In the Wild Testing” worked well, and students did not notice us when they played. When we started conducting interviews, two players even laughed at the fact we were “secretly spying on them” and they had no idea. This approach was fun, but it more importantly showed us how different students engage with our device in a “real” world setting.
- The first group of students we interviewed were those who looked at our design but walked away. According to these users, they were curious to see what the game was but did not have time to play (often either leaving for home or just arriving to study). Moreover, since our prototype was deployed right near the exit, we observed that users who were set on leaving could not be swayed by the educational fun this design offers.

- The users who did stop to play the game had completely opposite attitudes – many were on study breaks or leaving but not in any rush. They told us they stopped to play because of how “fun” our game looked, and they were glad that they could engage with the library’s history in such a casual manner.
- Interestingly, there weren’t any users who started playing the game and quickly abandoned it – users either left without looking at it, showed subtle curiosity but did not try to play it, or stayed to play the game till the end.
- Since this was the first time we were able to test our prototype without needing to wizard-of-oz any features, we learned much, especially how long our users are willing to engage with the device. What we saw was that users who stayed often played until they had all four books correct. Only one group abandoned the game early, and they were tourists who needed to get back to their tour group (they stayed for a short interview but showed clear concern for getting back to their group). For these players we need to make the hints as instructional as possible so they can get all four books without straining themselves.
- We learned that getting students on a break to play the game is not very difficult. We did not need to ask anyone to play at all and found that it clearly stands out in the more barren layout of the “gallery” outside the library. Perhaps what was more difficult was getting users to actively check for hints. Some users wanted to figure it out by themselves and try to “win” without learning the actual rules along the way. We responded to this after the evaluations by changing some of our code. Instead of just having correct answers revealed when the second button was pressed, we added gentle reminders encouraging the user to look at the hints.



FUTURE ACTIONS

KEY TAKE AWAY: ONE MORE TEST!

Our presentation is next Monday, and we feel confident in our design. Our users have lied at the heart of this project, and we believe each decision was made through their perspective, not our own. However, we would still like to ensure the adjustment we made to our code still respond to our users’ needs and will test once more this weekend. The physical features of the prototype itself are solid, so we will not need to do any more adjustments there.

Tangible Steps before Presentation

- 1.) Review Code to ensure there are no glitches and test once more this weekend
- 2.) Ensure all features are solid and prepared for presentation
- 3.) Review all insights and discuss possible questions classmates might have in regard to our design
- 4.) Prepare a short presentation of the prototype