



# Human Computer Interaction

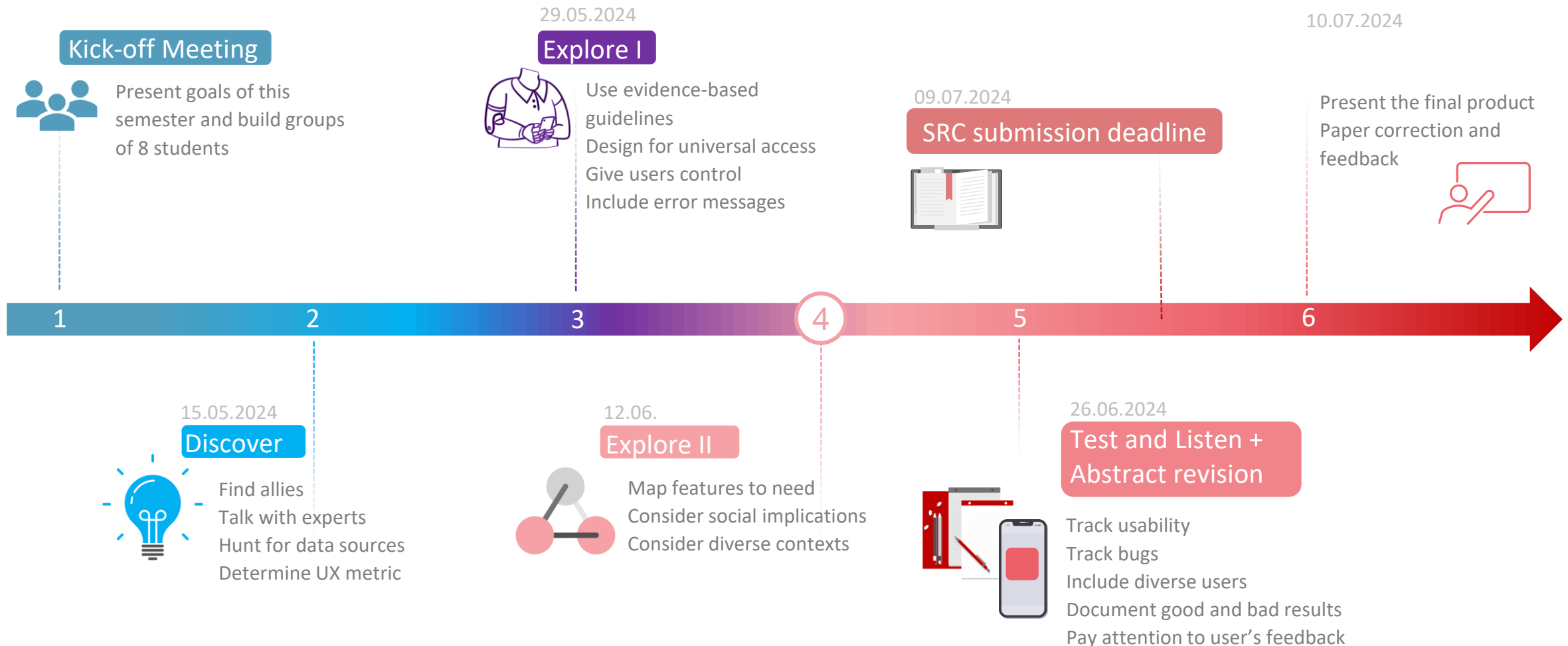
## Exercise: Explore (II)

Prof. Dr. Björn Eskofier  
Machine Learning and Data Analytics (MaD) Lab  
Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)  
Summer Term 2024

# Timeline



Machine Learning  
Data Analytics





In general, an abstract may be rejected if:

1. If the conference has too many people
2. If the grammar is awful
3. The methods are obviously flawed
4. If there are no conclusions
5. The work has previously been reported by others



ECTS: 3,75 lecture + 1,25 exercise



Exam: 90 minutes, E-exam **in person**



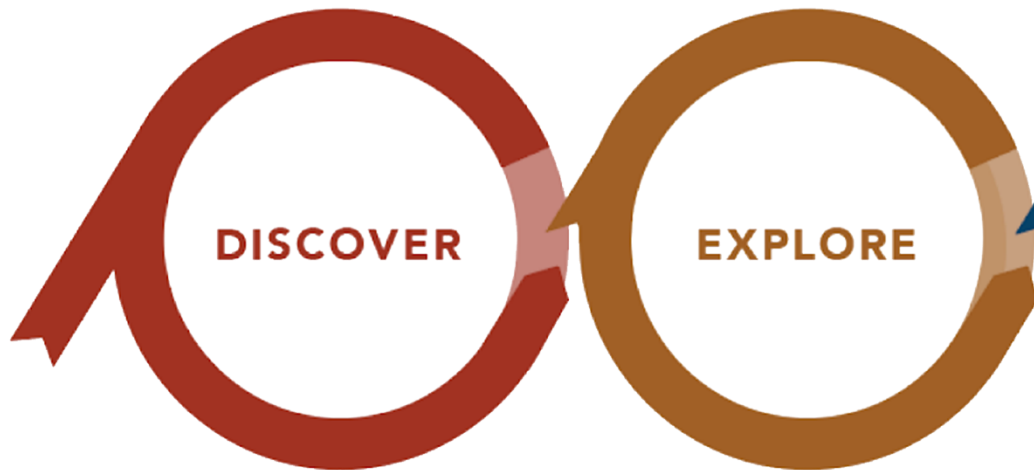
Date: 13.09.2024



Language: English



Documents: English



GenAI can

- Transcribe the audio data, diarize speaker, and perform basic thematic coding.
- Assist in identifying user patterns that might inform persona development.
- Suggest additional variables or factors to consider during data collection.

GenAI can not

- Capture the full emotional journey of a user with human empathy and understanding.
- Provide the contextually rich, qualitative insights that come from direct user interactions.



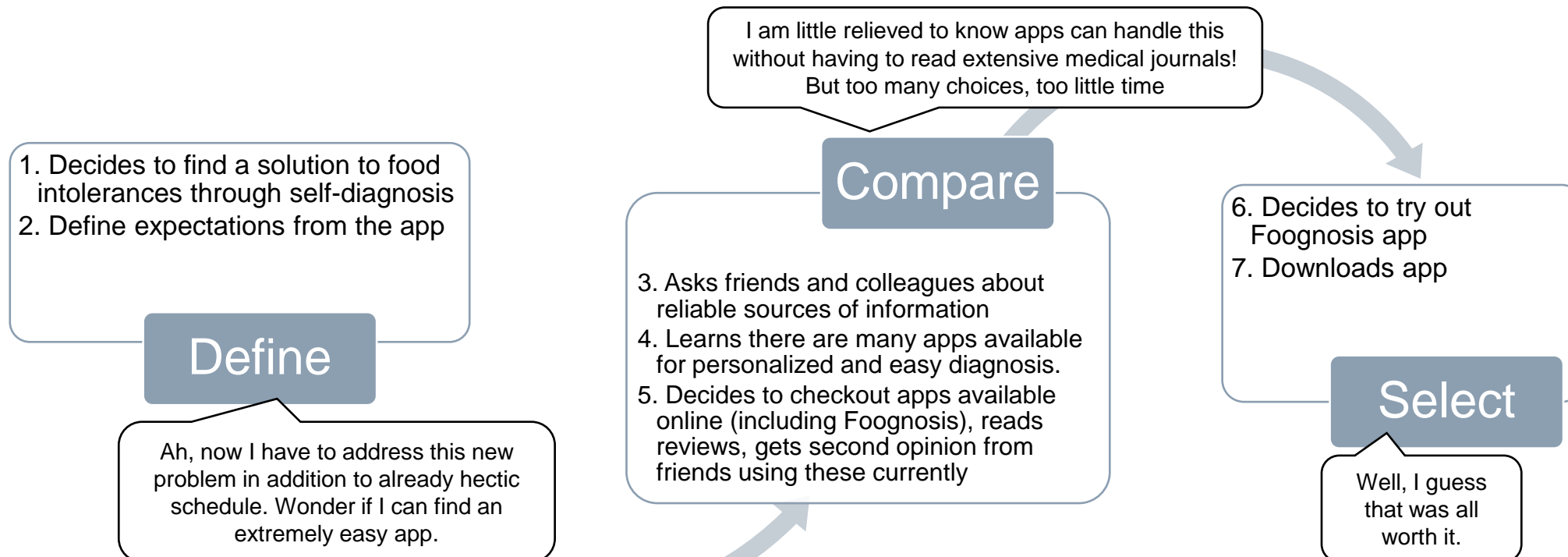
Pick one User Journey map + part of your paper prototype and discuss the results. What is your feedback for the group?

# User journey map

Scenario: Selecting Suitable Food Intolerance-based App



	<p><b>PERSONA</b></p> <p><b>Scenario:</b> Decides to find a solution to food intolerances through self-diagnosis. Starts journey of discovering a mobile app for the purpose.</p>	<p><b>EXPECTATIONS:</b></p> <ul style="list-style-type: none"><li>• Finding an easy-to-use, time-saving solution</li><li>• High-accuracy food intolerance diagnosis</li><li>• Ease of diarykeeping (meals &amp; symptoms) during medical consultations</li></ul>
--	---	--

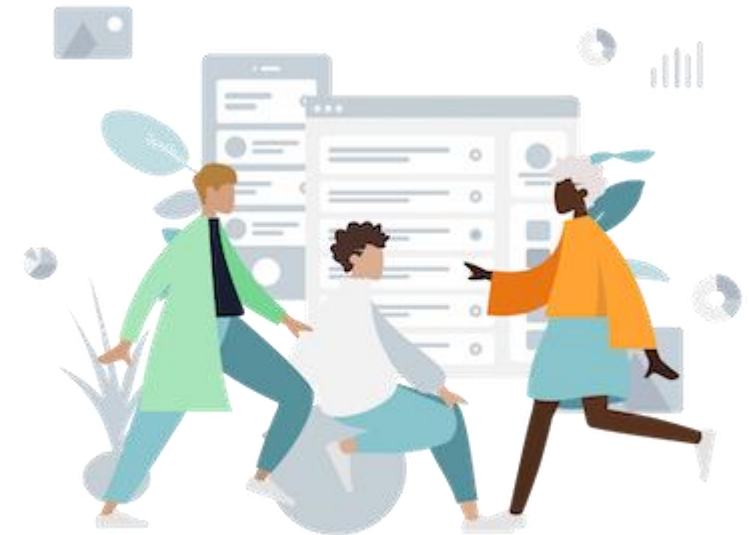


Exploration methods are for **understanding the problem space** and design scope and addressing user needs appropriately.

Iterate designs by testing paper prototypes with target users, and then **test interactive prototypes** by watching people use them.

Don't gather opinions.

Instead, note how **well designs work to help people complete tasks** and avoid errors. Let people show you where the problem areas are, then redesign and test again.





# The process of prototyping takes time

And is performed through multiple iterations



Machine Learning  
Data Analytics

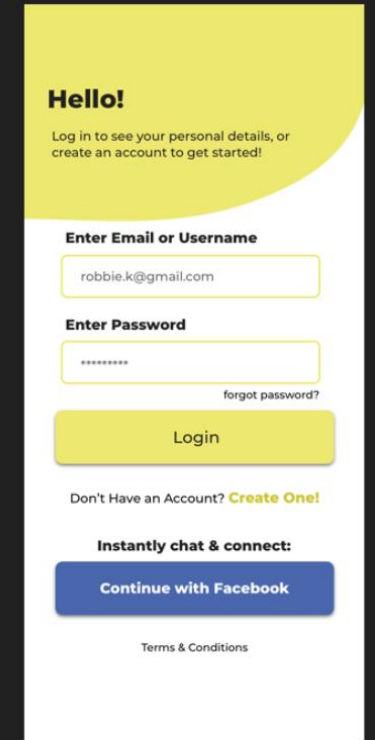
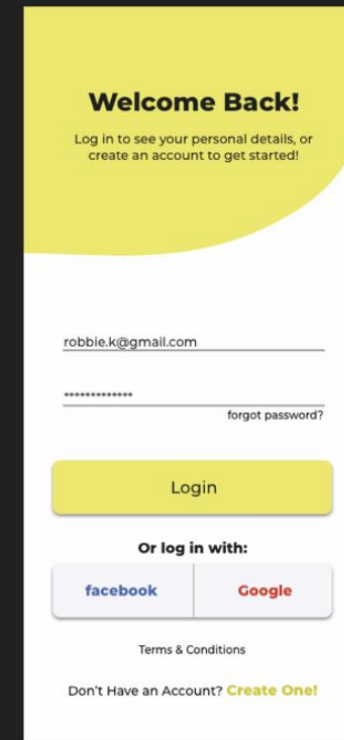
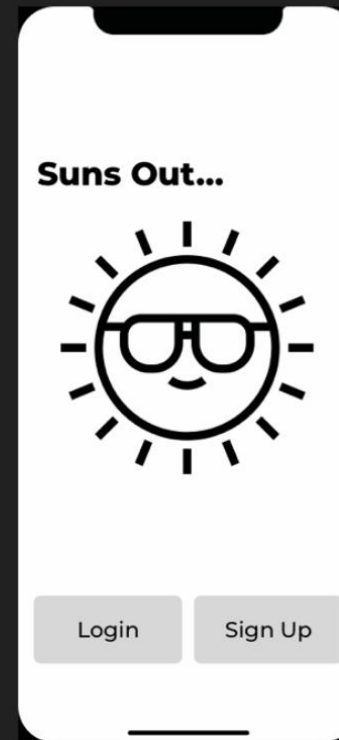
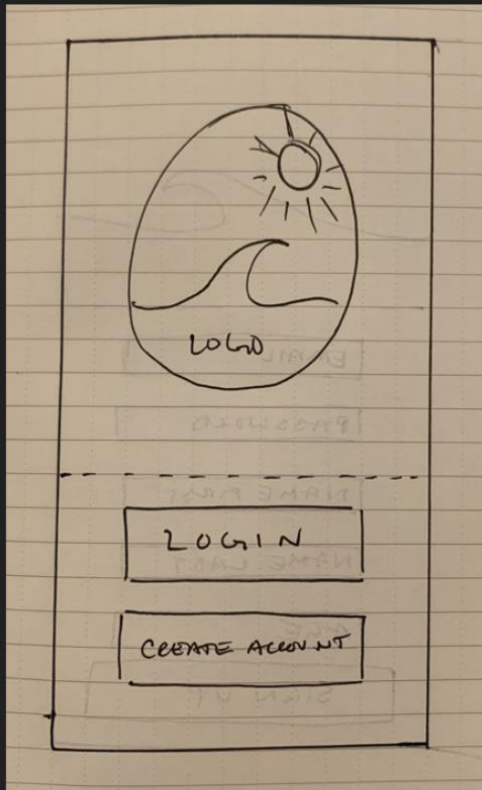


Image credit: Anami Chan

<https://www.anamichandesign.com/sundayz-case-study>

# Evaluating your prototype

## Usability



### Qualitative usability testing

- Thinking Aloud
- Interview questions
- Observation

### Quantitative usability testing

- Number of completed tasks
- Number of errors
- Task completion time
- SUS / AttrakDiff

<https://www.nngroup.com/articles/usability-testing-101/>

## Recap: Two simple tools for usability testing:

### System Usability Scale

- Developed in 1986 by John Brooke
- Still often used in different settings
- 10-item questionnaire:

Strongly Disagree                      Strongly Agree

I think that I would like to use this product frequently.

1 2 3 4 5

I found the product unnecessarily complex.

1 2 3 4 5

I thought this product was easy to use.

1 2 3 4 5

I think that I would need the support of a technical person to be able to use this product.

1 2 3 4 5

### AttrackDiff

- Developed by Marc Hassenzahl
- Evaluation of usability and attractiveness
- Questions as pair-wise set of words:






Please click one item in every line.

human*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	technical
isolating*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	connective
pleasant*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	unpleasant
inventive*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	conventional
simple*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	complicated
professional*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	unprofessional
ugly*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	attractive
practical*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	impractical
likeable*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	disagreeable
cumbersome*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	straightforward



Show your low fidelity prototype to someone who did not see it yet – which feedback do you get?



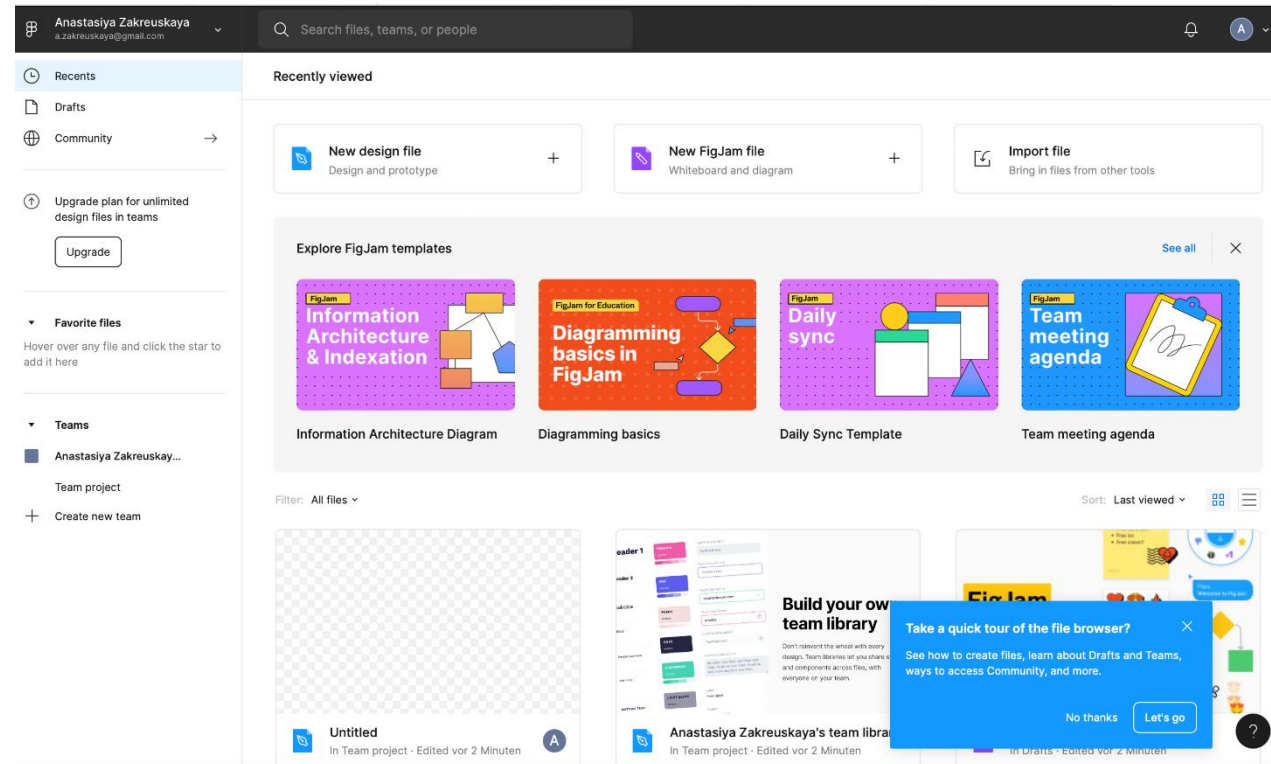
	Paper	Facade Tools	Interface Builders	Actual Implementation
 Ease of Use	++	+	0	--
 Fast Turn-around	++	++	+	--
 Flexibility and Control	++	+	+	++
 Executable Prototypes	--	+	0	++
 Team Design	++	+	0	--

# Prototyping with Figma

<https://www.figma.com>



Machine Learning  
Data Analytics



<https://www.youtube.com/watch?v=dXQ7IHkTiMM>

# Tasks

Please prepare the following for the next session

---

- ? Choose a specific user journey map that you want to elaborate in a prototype.
- ? Create a prototype for the chosen functions – of course, you can include more functions as well.
- ? Upload the abstract for the SRC for a peer review + review the uploaded abstracts by other groups and put in your comments.