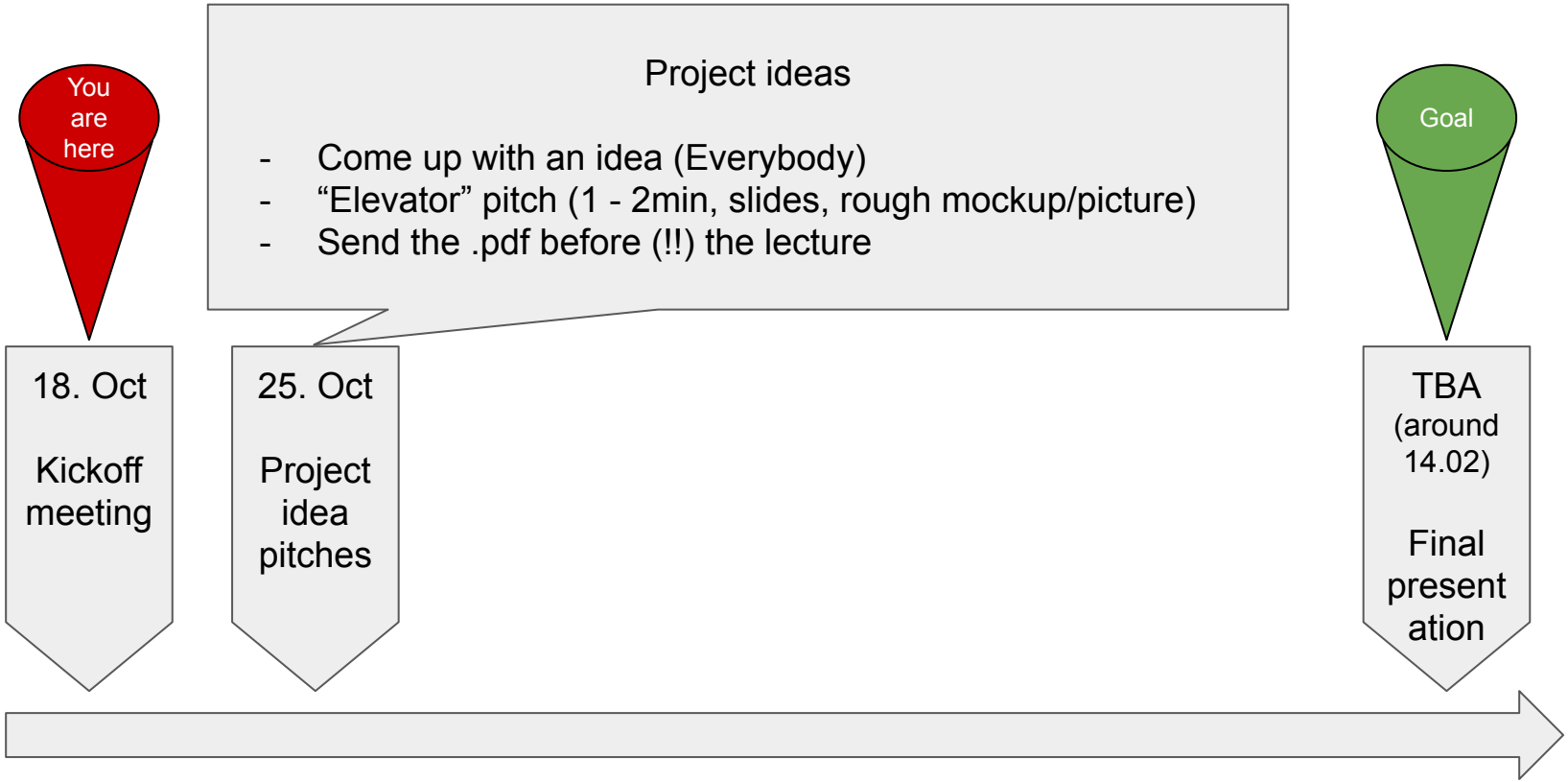
Programming Database Web Applications

Christian Winter (winterch@in.tum.de)
Maximilian Reif (reif@in.tum.de)
Prof. Alfons Kemper

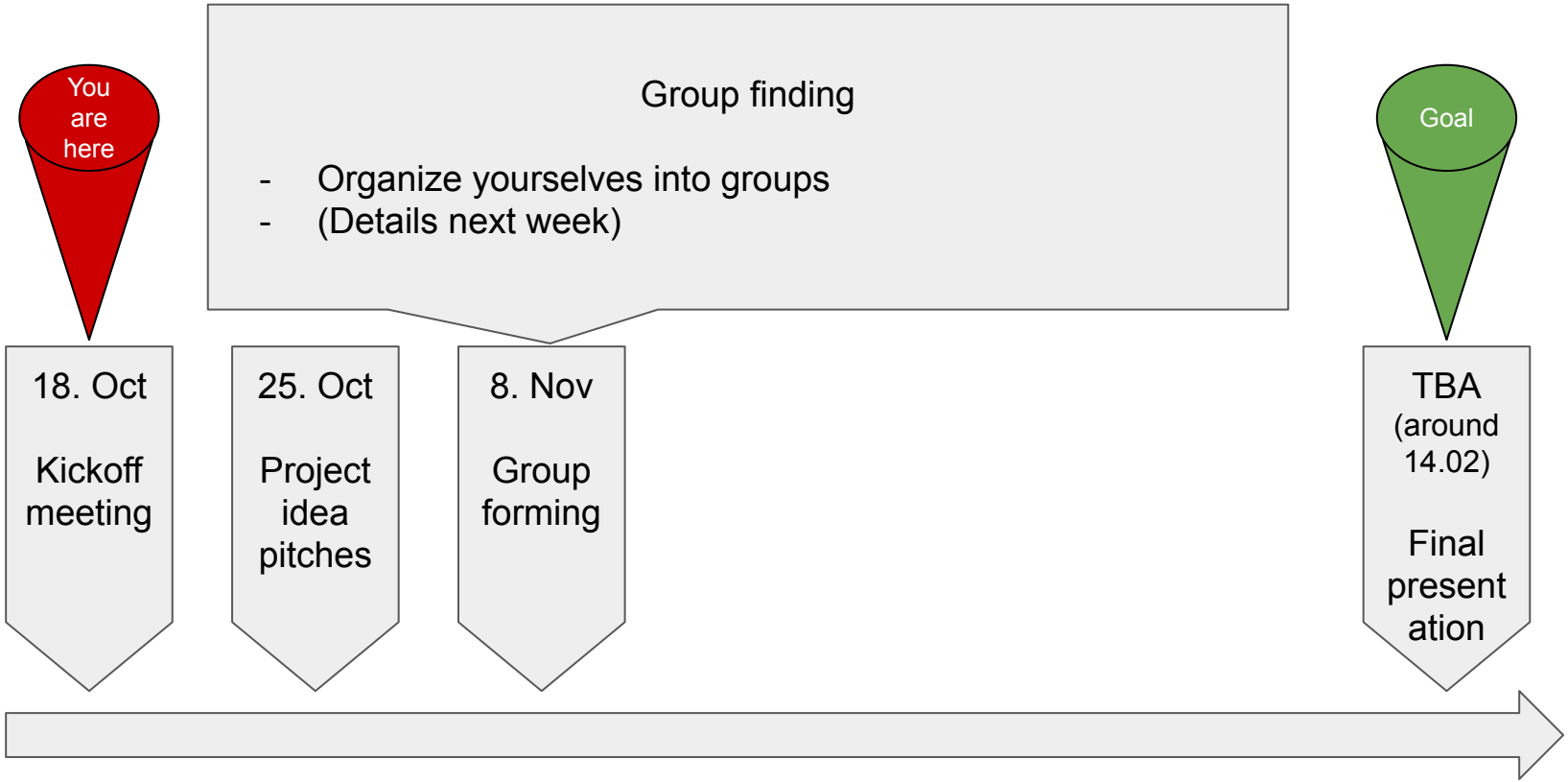
The Plan


You are here
18. Oct
Kickoff meeting
Goal
TBA (around 14.02)
Final presentation

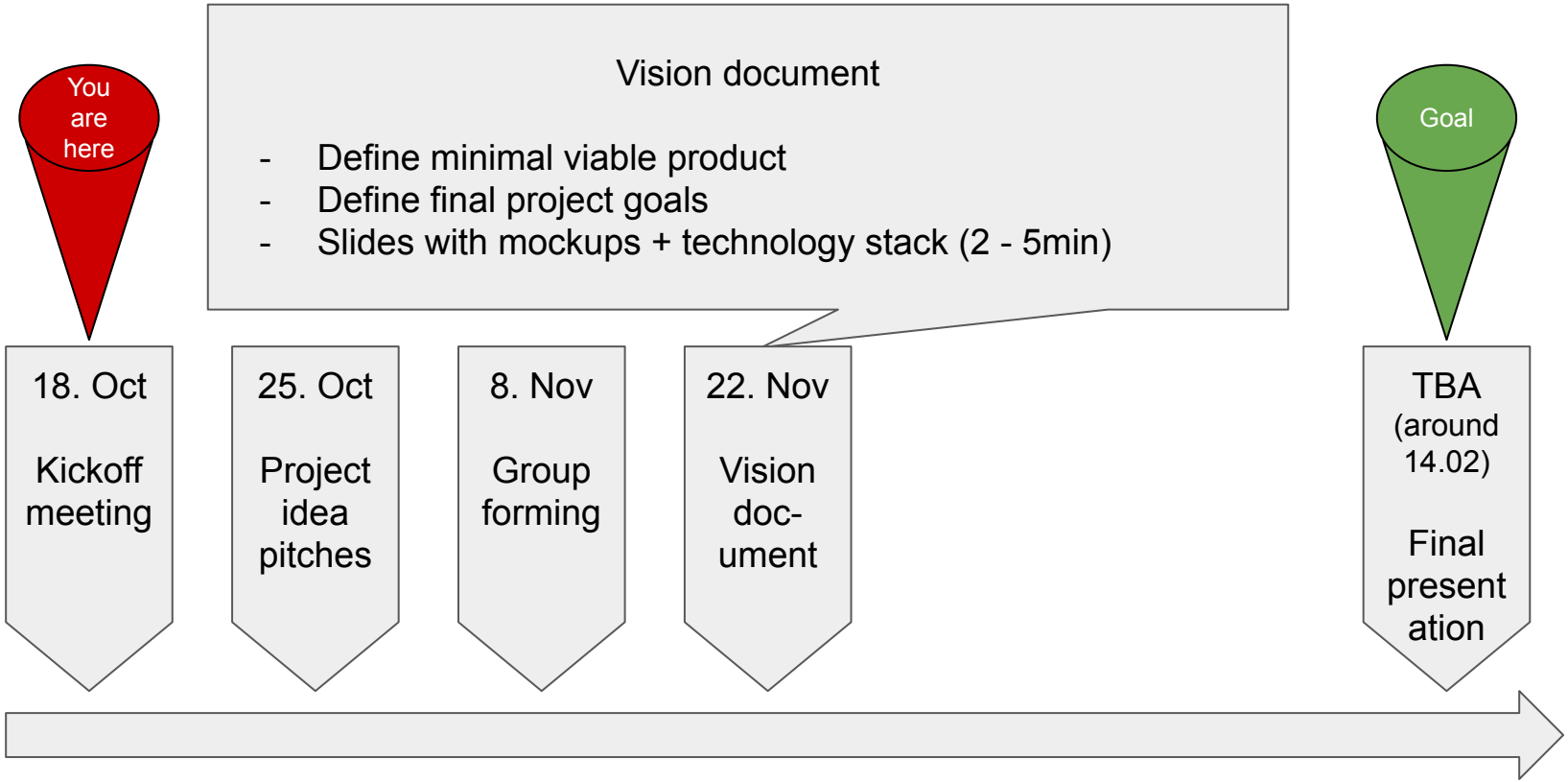
The Plan


You are here
Project ideas
- Come up with an idea (Everybody)
- “Elevator” pitch (1 - 2min, slides, rough mockup/picture)
- Send the .pdf before (!!) the lecture
Goal
18. Oct
Kickoff meeting
25. Oct
Project idea pitches
TBA
(around 14.02)
Final presentation

The Plan


You are here
Group finding
- Organize yourselves into groups
- (Details next week)
Goal
18. Oct
Kickoff meeting
25. Oct
Project idea pitches
8. Nov
Group forming
TBA (around 14.02)
Final presentation

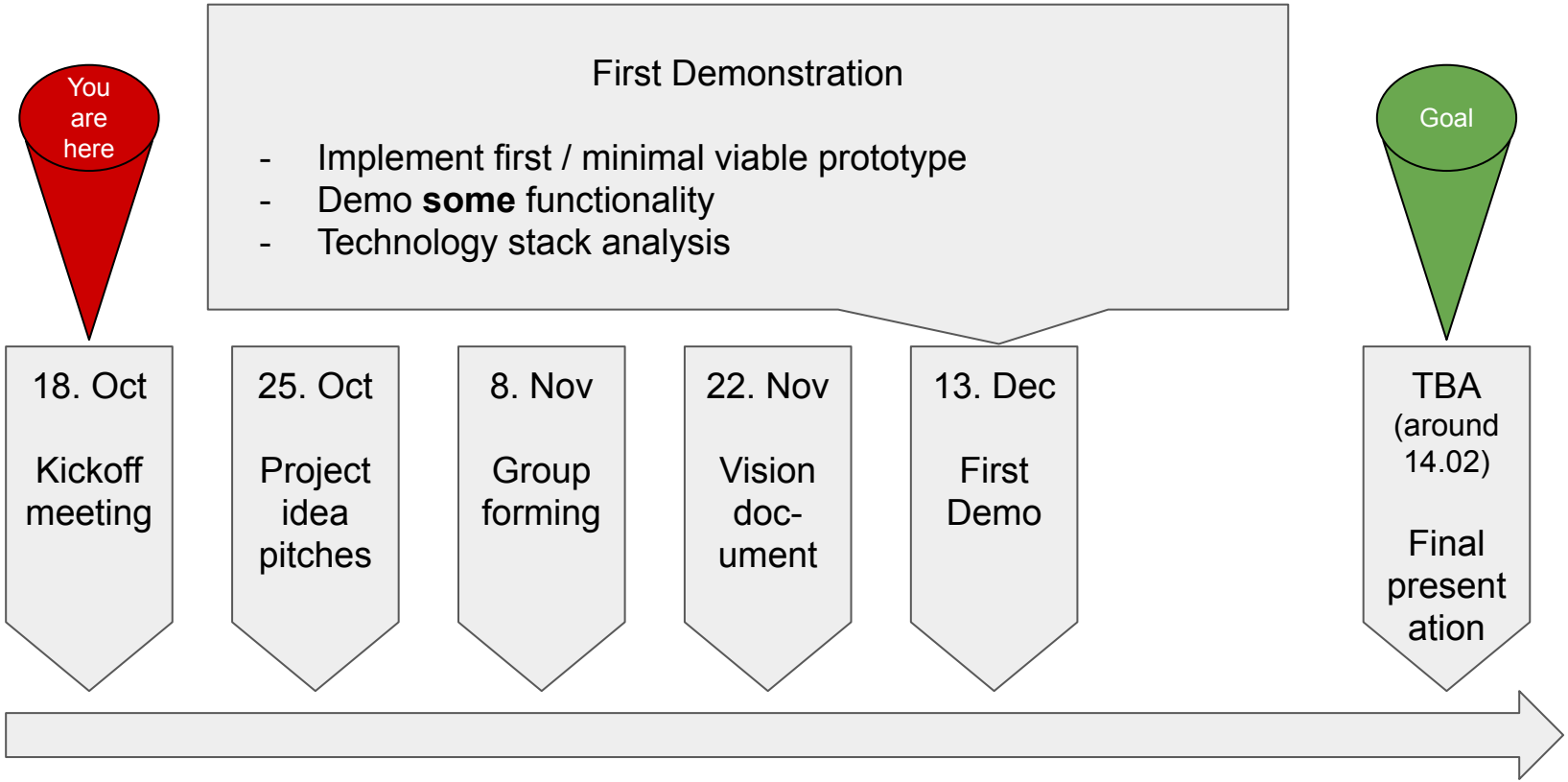
The Plan


You are here
Vision document
- Define minimal viable product
- Define final project goals
- Slides with mockups + technology stack (2 - 5min)
Goal
18. Oct
Kickoff meeting
25. Oct
Project idea pitches
8. Nov
Group forming
22. Nov
Vision doc-ument
TBA (around 14.02)
Final present ation

Vision Document

- Similar to scope + requirements statement
- Requirements statement (“Lastenheft”):
  - Motivation + Problem description
  - Project goal (what would the final product look like)
- Scope statement (“Pflichtenheft”):
  - System Architecture
  - Technology stack
  - Project scope (what will we implement for this course)
- Roughly 2-3 pages
- Due 22. November

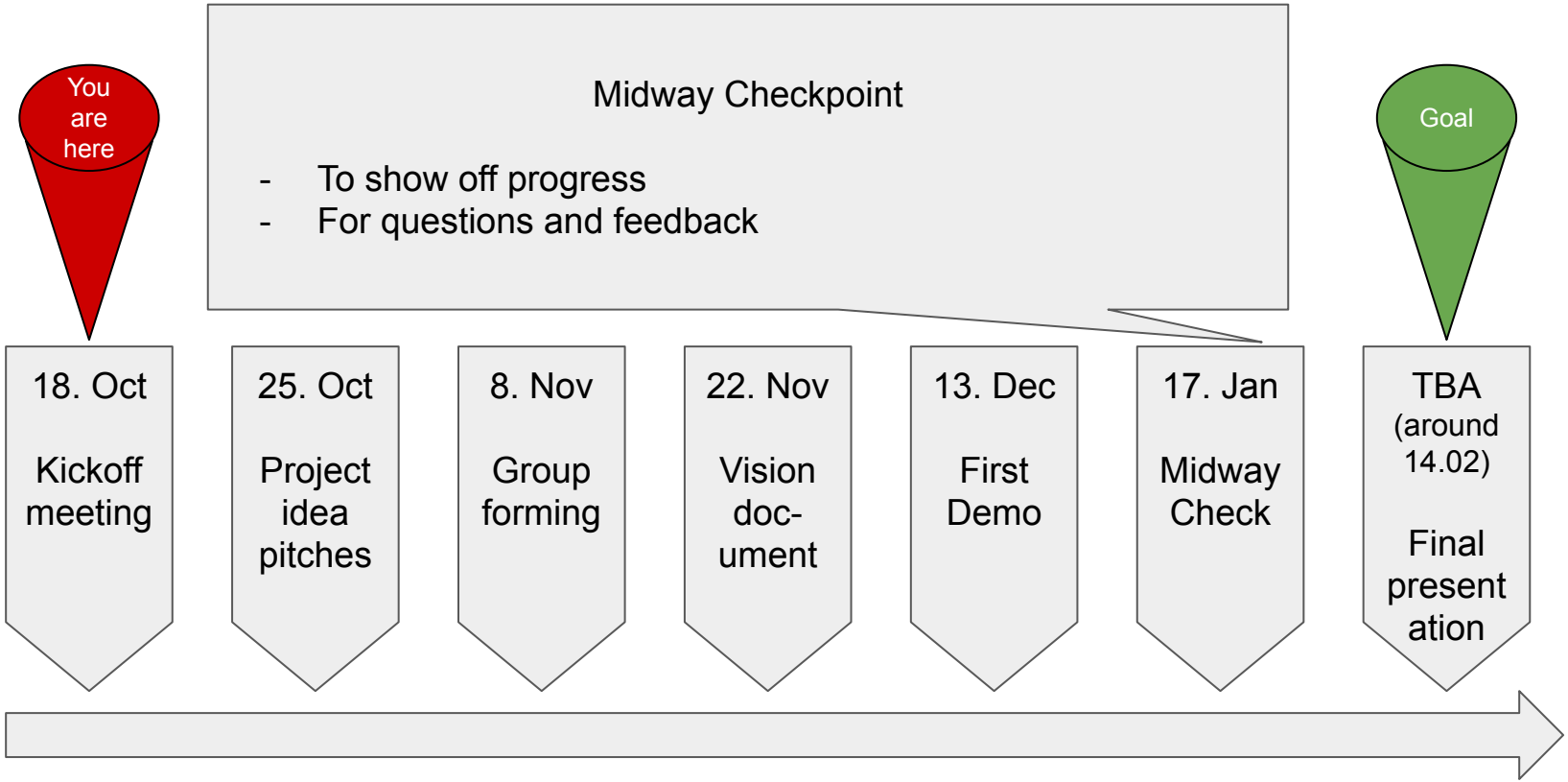
The Plan


You are here
First Demonstration
- Implement first / minimal viable prototype
- Demo **some** functionality
- Technology stack analysis
Goal
18. Oct
Kickoff meeting
25. Oct
Project idea pitches
8. Nov
Group forming
22. Nov
Vision doc-ument
13. Dec
First Demo
TBA (around 14.02)
Final present ation

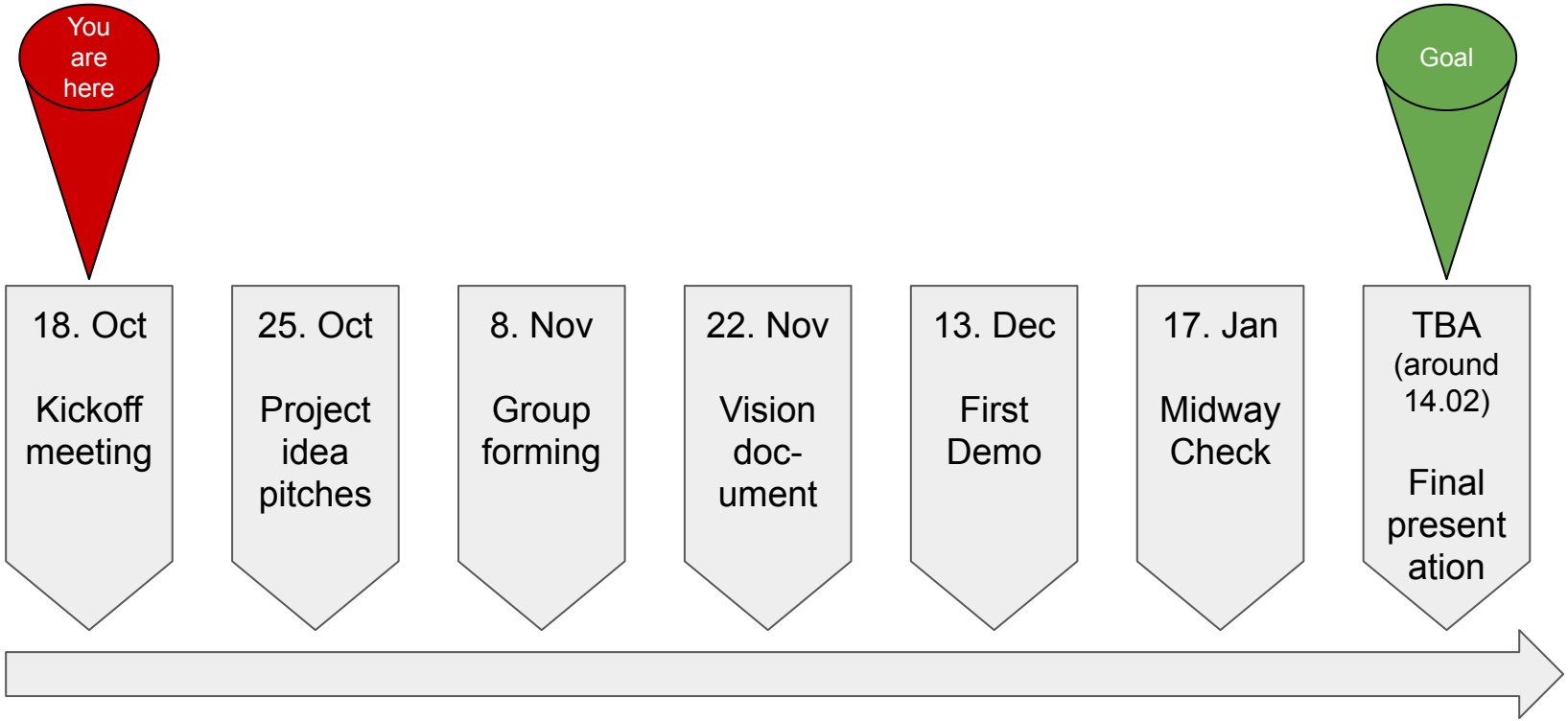
First Demonstration: MVP

- Implement the first prototype
- Demo **some** functionality
- Technology Stack Analysis:
  - Justify the choices for the stack
  - Focus on database interaction
- Lessons learnt
  - What were the problems that you faced?
  - How did you solve them?
  - How did you divide the work among you?
- 5-8 slides (<10min)
- Due 13. December

The Plan


You are here
Midway Checkpoint
- To show off progress
- For questions and feedback
Goal
18. Oct
Kickoff meeting
25. Oct
Project idea pitches
8. Nov
Group forming
22. Nov
Vision doc-ument
13. Dec
First Demo
17. Jan
Midway Check
TBA (around 14.02)
Final present ation

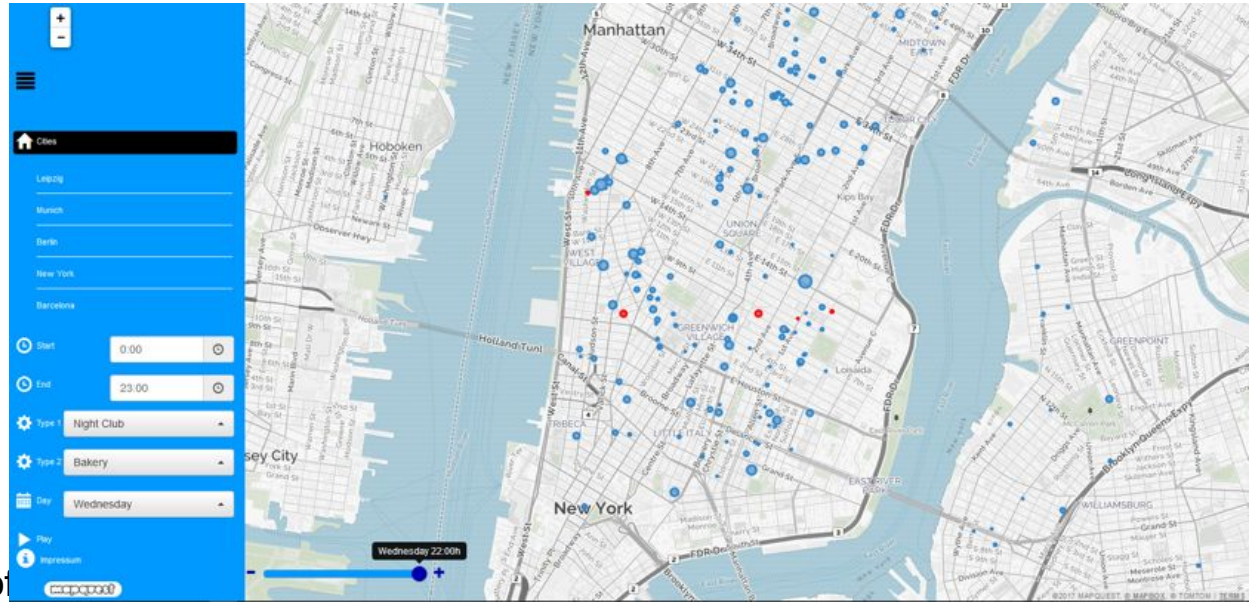
The Plan - Overview



MapViz (2016)

- Popular-Times feature by Google
- Feature shows relative amount of visitors at a specific place

- Visualization of data
- Identify movement patterns of people



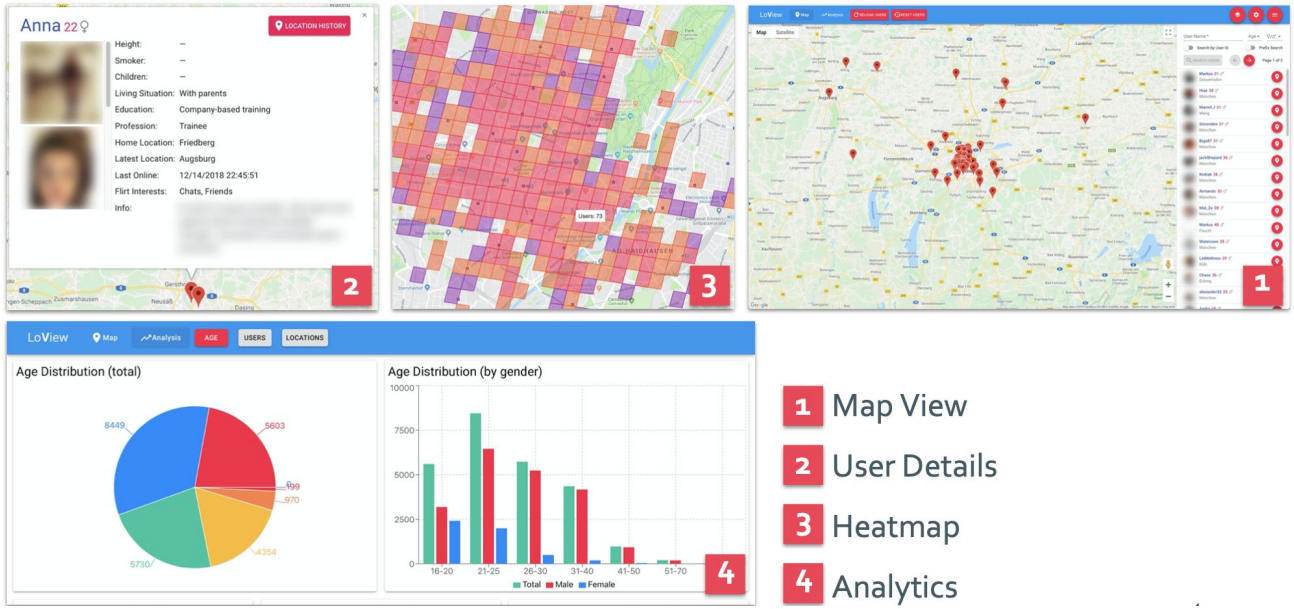
Pizza Ninja (2017)

- Crawl data from pizza delivery services

- Decouple ordering from choosing a restaurant
- Order in a group

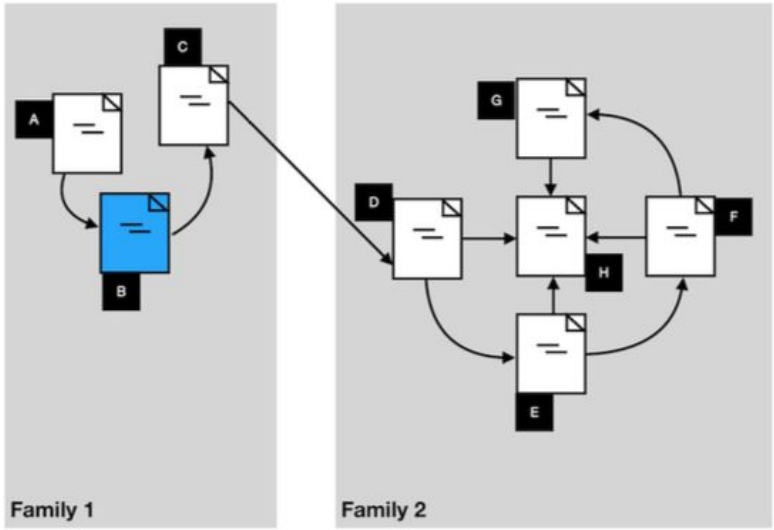
LoView (2018)

- Crawl Dating App APIs
- Track users, analyze behavior
- Visualize information



Research Graph (2019)

- Crawl online paper APIs
- Find familiarities between papers (weighted citations)
- Visualize !!!



#1 Smart Weather Forecast

Build a website to interactively explore these the differences between the forecasted weather and the actual (measured) weather.

- Allows professionals to identify weaknesses in weather models
- Detect which weather service is best for which location
- Analyse difference between forecast and measurement
- Temperature, wind, pressure ...
- Big data management: 100GB+ weather data

#2 Improving the Housing Market

ImmoScout recently started an API to their listings

- Find out what you can (legally) do with the data (ToS, request API key)
- Automatically extract good deals and notify the user
- Find dubious listings
- Visualize current trends by area/flat size

Also possible with other platforms (immowelt/wg-gesucht/ebay kleinanzeigen etc.)

A bit of inspiration...

SpiegelMining (http://www.dkriesel.com/spiegelmining)

BahnMining (http://www.dkriesel.com/blog/2019/1229_video_und_folien_meines_36c3-vortrags_bahnmining)

Talks also discuss ethics and code of conduct of mining public apis.
Check them out!

One More Thing ...

Look for open data sets !

Google dataset explorer: https://www.google.com/publicdata/directory

Amazon co-purchasing set: https://snap.stanford.edu/data/com-Amazon.html

Flights: http://stat-computing.org/dataexpo/2009/the-data.html

IMDB: https://www.imdb.com/interfaces/

Wiki: http://dumps.wikimedia.org