Programming Database Web Applications

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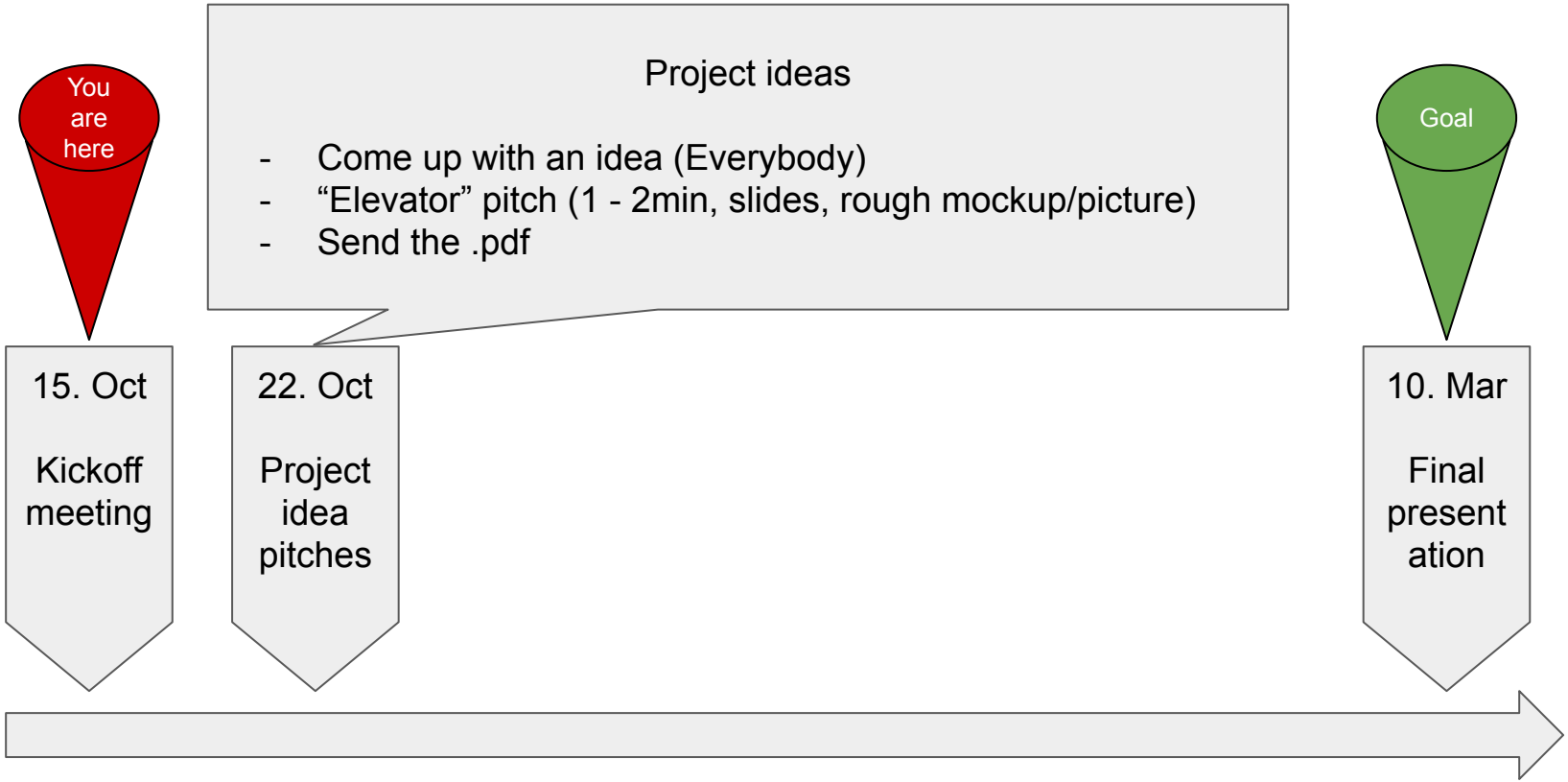
Topics

1. Course Organization
2. Inspiration for Projects
3. Prospeum Pitch

The Plan


You are here
15. Oct
Kickoff meeting
Goal
10. Mar
Final present ation

The Plan


You are here
Project ideas
- Come up with an idea (Everybody)
- “Elevator” pitch (1 - 2min, slides, rough mockup/picture)
- Send the .pdf
Goal
15. Oct
Kickoff meeting
22. Oct
Project idea pitches
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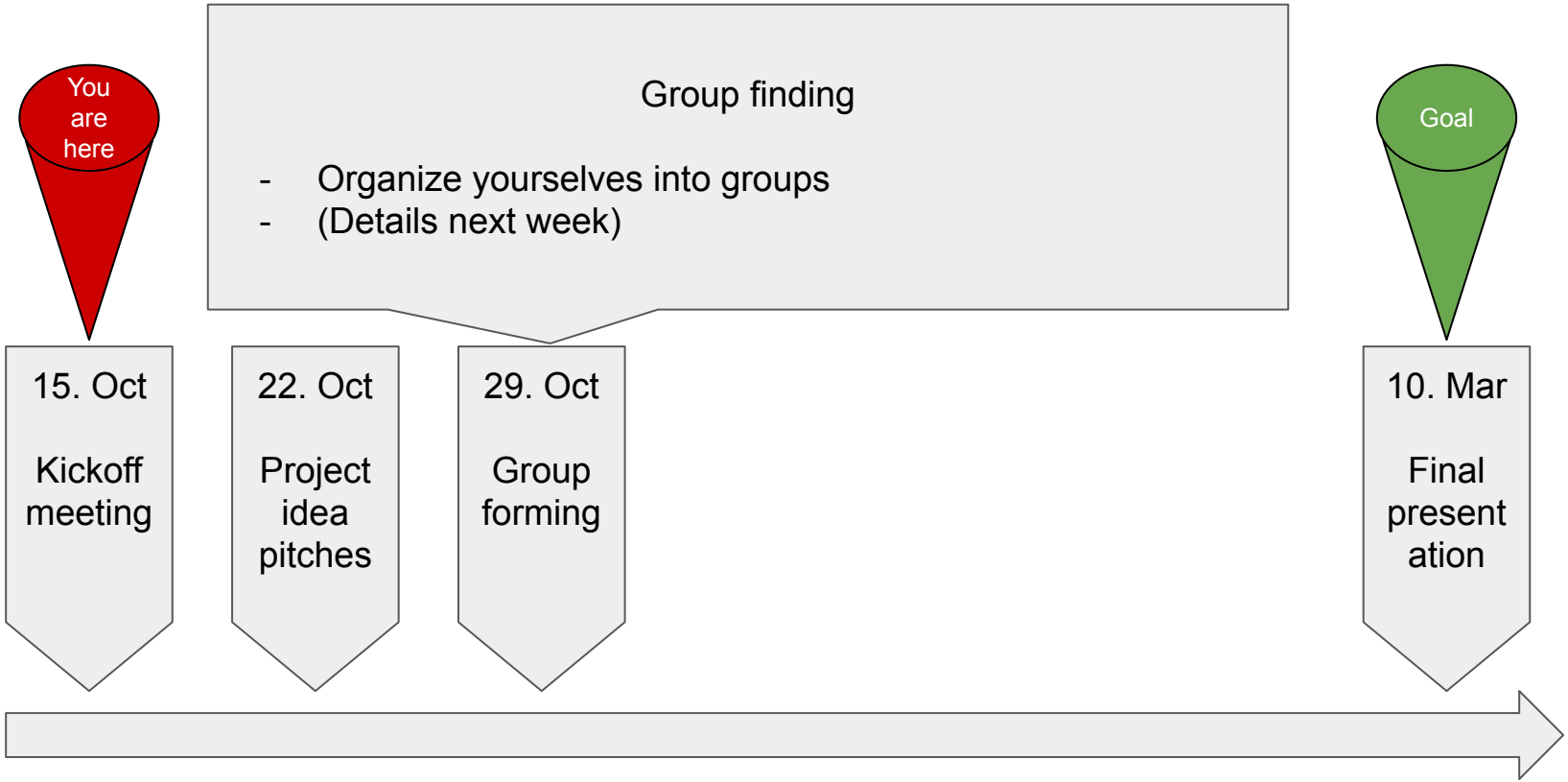
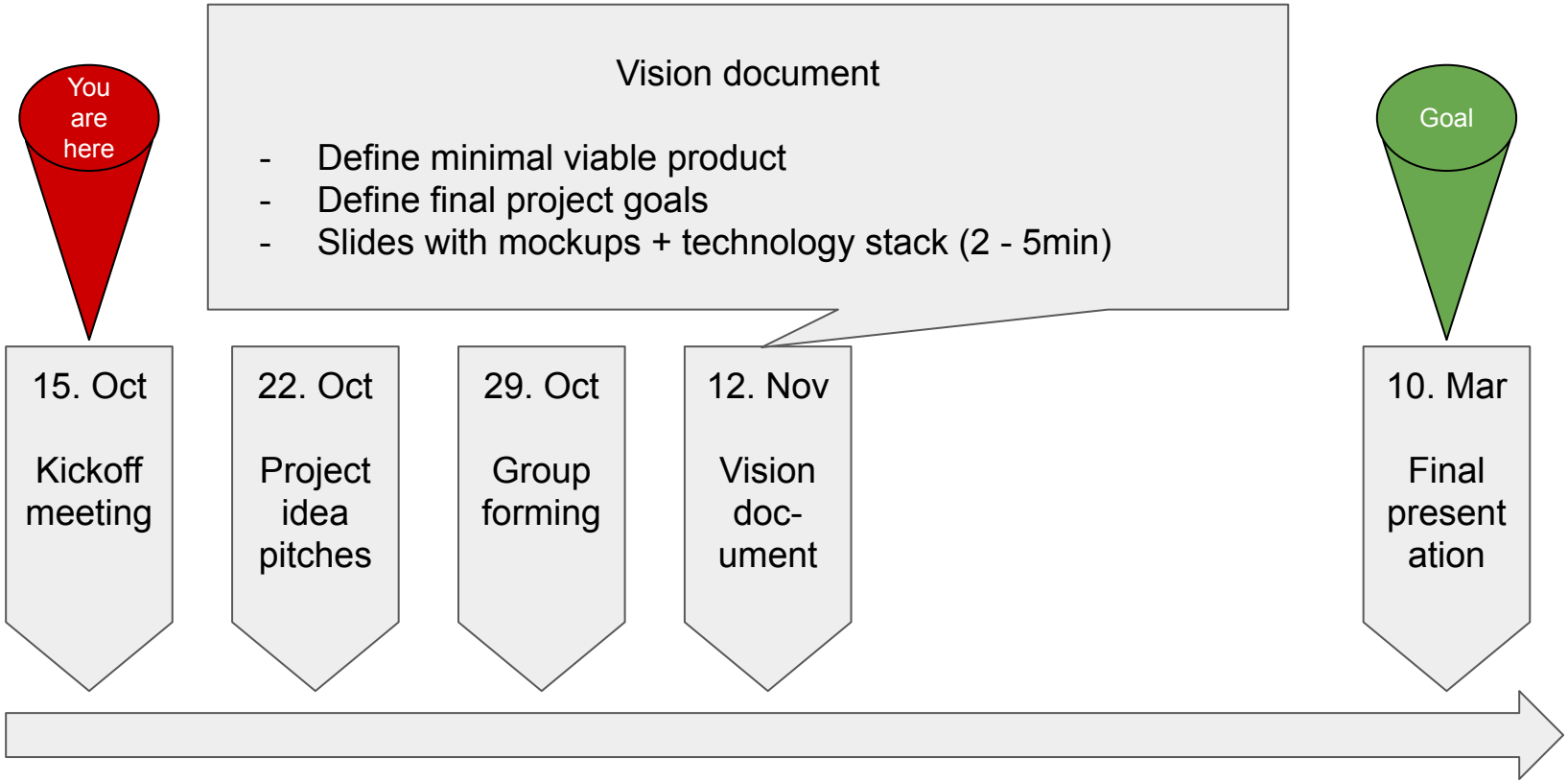
Final present ation

The Plan


You are here
Group finding
- Organize yourselves into groups
- (Details next week)
Goal
15. Oct
Kickoff meeting
22. Oct
Project idea pitches
29. Oct
Group forming
10. Mar
Final present ation

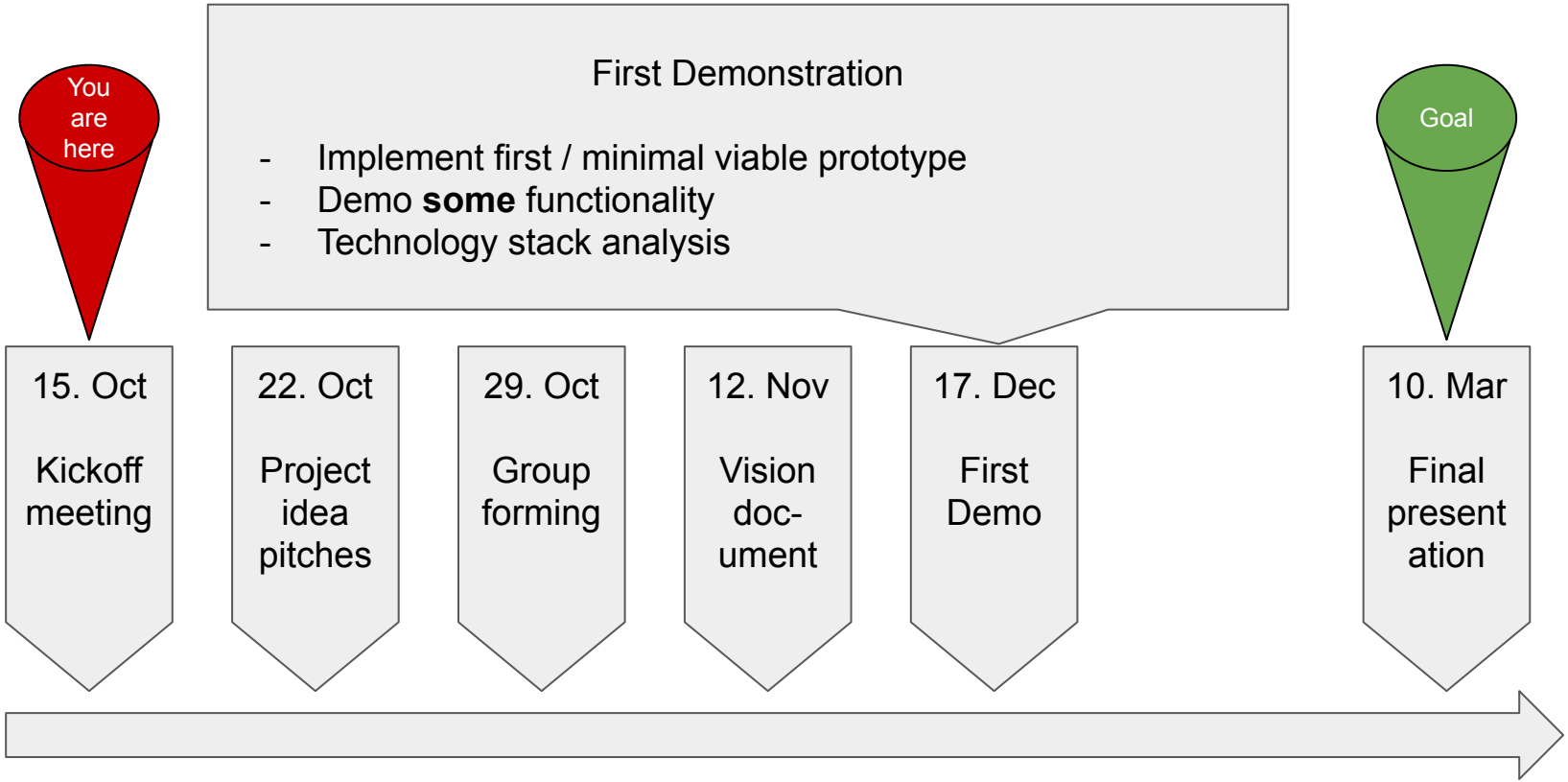
The Plan


You are here
Vision document
- Define minimal viable product
- Define final project goals
- Slides with mockups + technology stack (2 - 5min)
Goal
15. Oct
Kickoff meeting
22. Oct
Project idea pitches
29. Oct
Group forming
12. Nov
Vision doc-ument
10. Mar
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 12. November

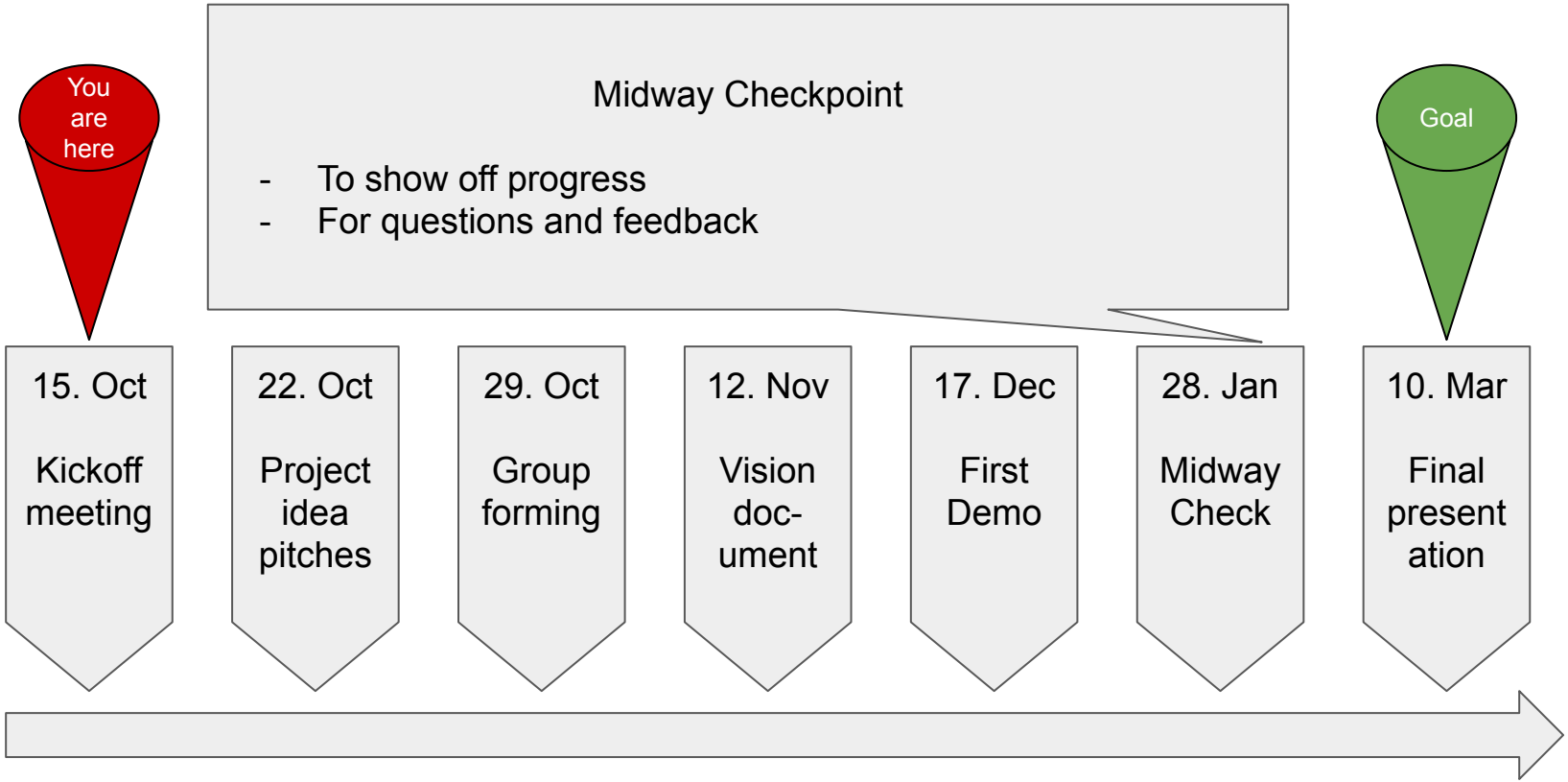
The Plan


You are here
First Demonstration
- Implement first / minimal viable prototype
- Demo **some** functionality
- Technology stack analysis
Goal
15. Oct
Kickoff meeting
22. Oct
Project idea pitches
29. Oct
Group forming
12. Nov
Vision doc-ument
17. Dec
First Demo
10. Mar
Final present ation

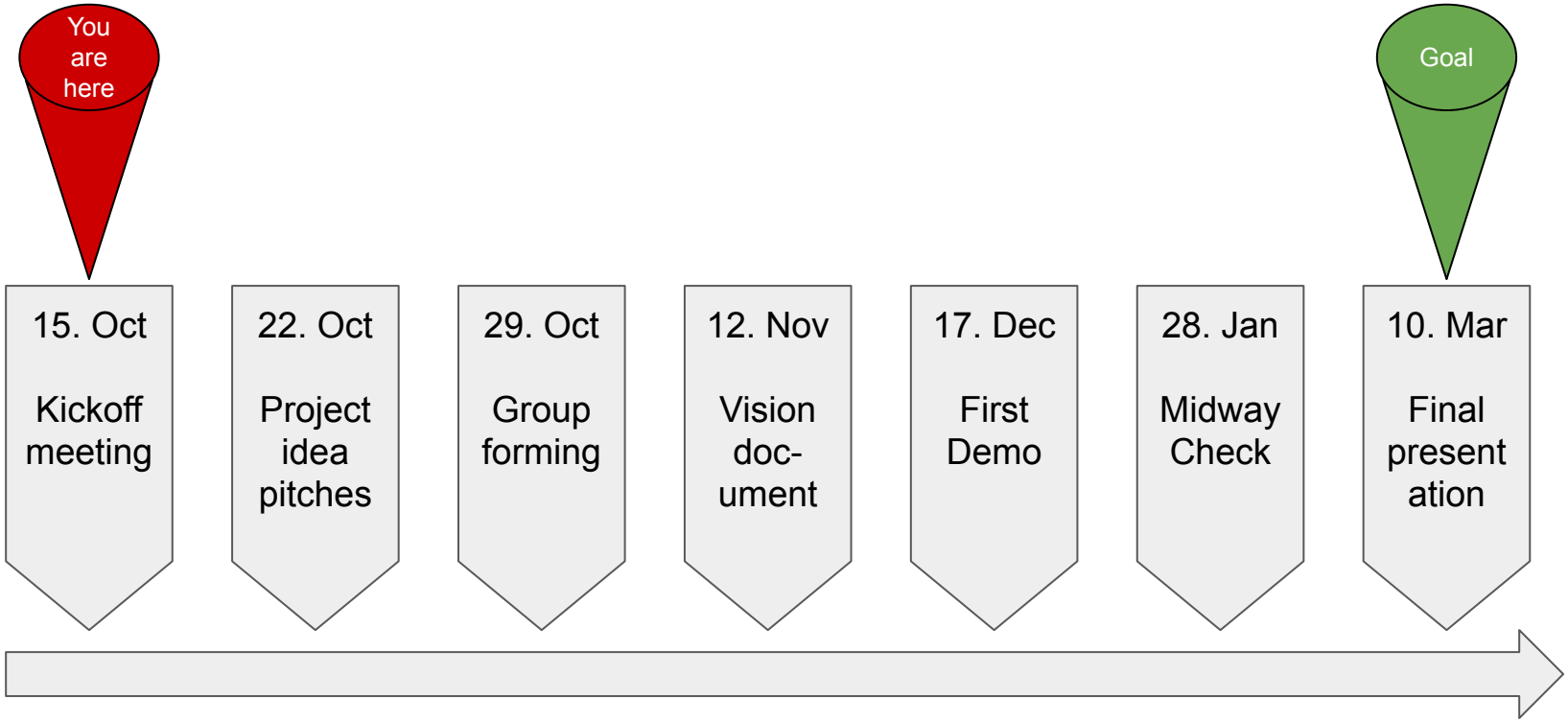
First Demonstration: MVP

- Implement the first prototype
- Demo **some** functionality
- Technology Stack Analysis:
  - Justify the choices for the stack
- 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
- Due 17. December

The Plan


You are here
Midway Checkpoint
- To show off progress
- For questions and feedback
Goal
15. Oct
Kickoff meeting
22. Oct
Project idea pitches
29. Oct
Group forming
12. Nov
Vision doc-ument
17. Dec
First Demo
28. Jan
Midway Check
10. Mar
Final present ation

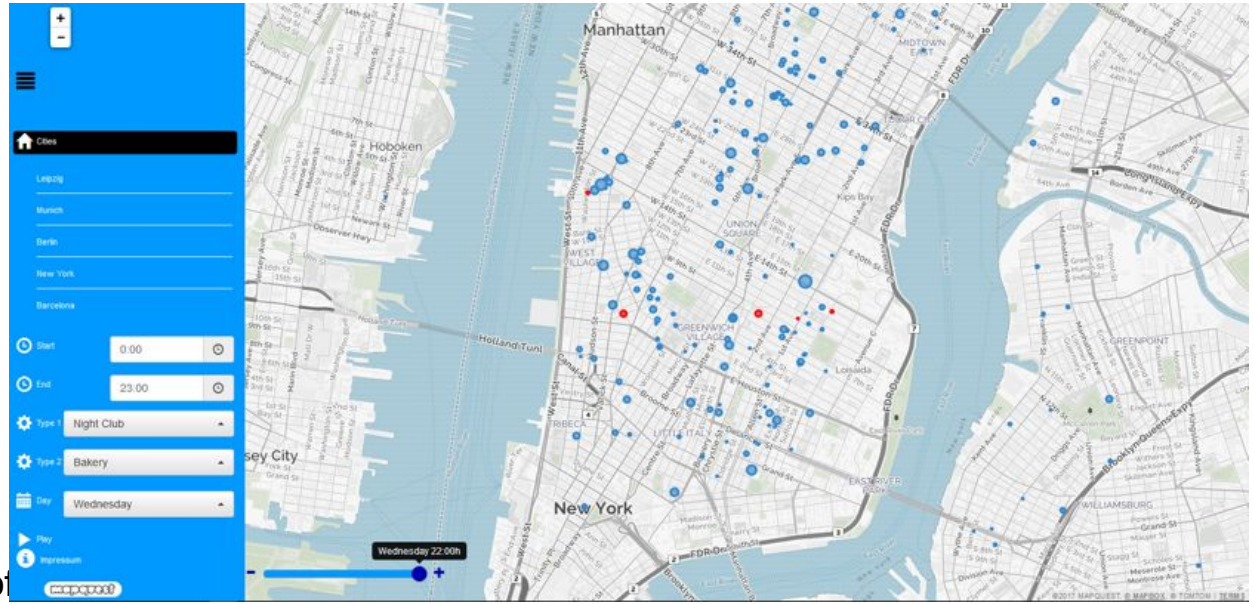
The Plan - Overview



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



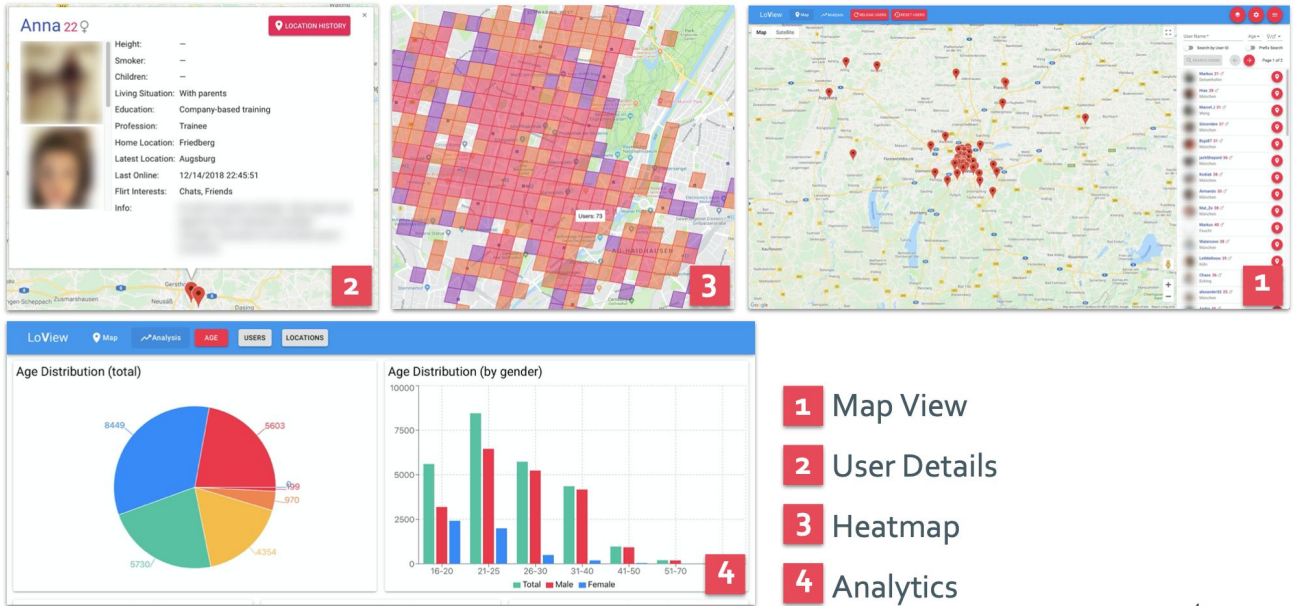
Pizza Ninja (2017)

- 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
- Reach out to the press!



#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 Traffic Aware Routing

User wants to drive from A to B and wants to arrive by datetime X

When should he/she depart to minimize the travel time?

Tasks:

- Get necessary data from public data sources
- Design and create database
- Design and implement web interface
- Plot estimated travel (y axis) and departure times (x axis)

#3 phpMyAdmin for node.js

This project would allow web developers to configure their database in node js.

Tasks:

- Design and create secure management platform for a modern database.
- Could be done for postgres to help make it more popular in the node community.
- Many possibilities: Provide enhanced analytics, easy setup, management features, monitoring ...
- Contribution to open source community.

#4 Tutor Tool (!!!)

A website to help manage big lectures with multiple tutor groups.

Features:

- Existing system
- Tutored accounts, tutor groups, bonus points, export, import
- If finished (and good), it will definitely be used !

#5 Plan Ahead

US has a number of National Parks and areas which do not have cellular coverage. Also, a number national parks do not have any options for food/water at the visitor centers.

Tasks:

- Design and populate various databases for cellular coverage, and national parks that do not have food options etc
- Make an app that allows a user to plan a trip based on the data that you populated

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