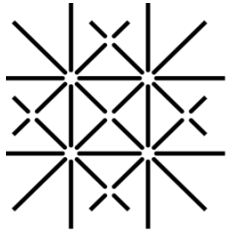

Universität Basel

Project Proposal

Robo Retriever

Computer Architecture

A. Merkushova, J. Käser, M. Groenen, R. Kempf

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Aim and goals

- **Aim:**
  - Develop a quadruped four-legged robotic pet controlled via Wi-Fi

- **Goals:**
  - Design Part and CAD Modeling
  - 3D Printing of Parts
  - Assembly
  - Programming and Implementation

Requirements

Hardware

- ESP 32 - 38 pin with Wifi and Bluetooth
- BreadBoard / PCB
- 12 Servo Motors for movement
- Battery Holder / Batteries for power
- 3D Printing for casing

Software

- C / C++ for robot control
  - ESP32Servo library
  - Wifi.h library
  - AsyncTCP.h library
- Python for remote interface

Planning

Anastasiya

- 3D Printing
- Robot Frame Assembly
- Programming, Wi-Fi and Server:
  - WebSocket for Real-Time Control
  - Web Server and Command Handling
  - ESP32 Wi-Fi Setup

Mathieu

- Programming, Interface:
  - Design web control interface
  - Link buttons to ESP32 commands
  - Test on devices for smooth control

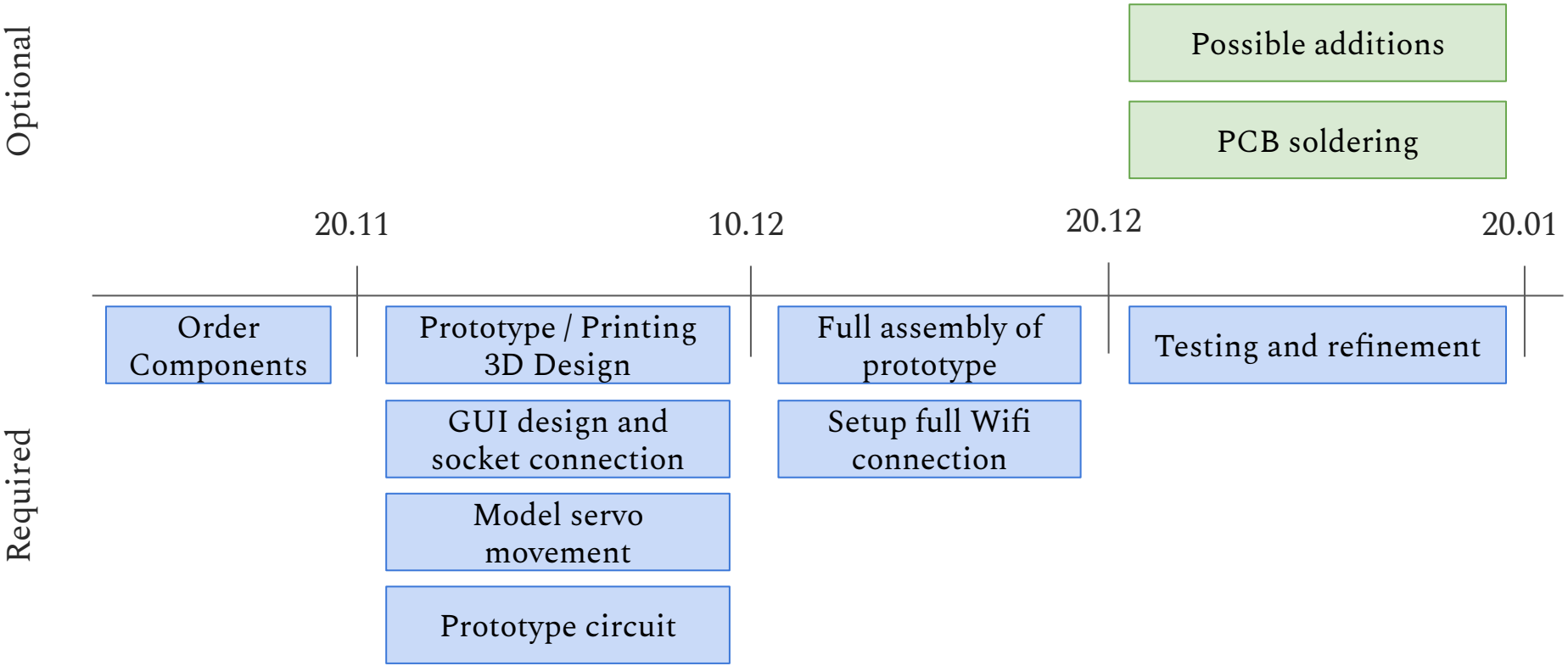
Jiri

- 3D Design / Printing
- Assembly of design:
  - Wiring and Electronics Mounting
  - Robot Frame Assembly

Rahel

- Programming, Servo Control:
  - Set up servos and write movement functions.
  - Create combined actions (stand, sit).
  - Test and calibrate servo functions.

Timeline


Optional
Possible additions
PCB soldering
20.11
10.12
20.12
20.01
Order Components
Prototype / Printing 3D Design
Full assembly of prototype
Testing and refinement
GUI design and socket connection
Setup full Wifi connection
Model servo movement
Prototype circuit
Required

Questions ?