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Königskarte



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Datum: MISSING DATE

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I declare under oath that I have written the present diploma thesis independently and without outside help, have not used sources and aids other than those indicated and have identified the passages taken from the sources used literally and in terms of content as such.

Ort, Datum	Leon Edlinger
Ort, Datum	Paul Gigler
Ort, Datum	Andreas Weissl

Abstract

Abstract in English

Kurzfassung

Kurzfassung in Deutsch

Thanks

It would not have been possible to carry out this thesis to this extent without the active support of a number of people. We would therefore like to thank everyone who supported us in the implementation of this thesis.

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1 Introduction

1.1 Team

1.2 Motivation

2 Technologies

Development would not have been possible to implement without making use of many tools, frameworks and environments. In this chapter each tool used in the creation of our software will be described briefly.

2.1 LaTeX

Hier kommt eine Beschreibung zu Latex hin

2.2 Project Management

Hier kommt Text zum Project Management hin

2.2.1 Trello

Hallo, das ist Trello

2.2.2 Sharepoint

und das ein Text zu sharepoint, wieso eigentlich

2.2.3 Discord

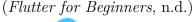
und hier nochmal kurz Discord, kennt eh jeder

2.3 Frontend

2.3.1 Dart

Dart is a programming language initially designed for web development, with the goal, of replacing JavaScript, in mind. Today it gets used in a variety of software products, mainly

because of the flutter framework. It can be compiled for many platforms and architectures (ARM, x64, RISC-V, JavaScript or WebAssembly) and is loved for its combination of High-Level Features, with practical language features like Garbage collection and optional Type annotation. It was developed by Google and is now an open-source project.





2.3.2 Flutter

Flutter is an Open-Source software development framework. It allows programmers to compile their application for different platforms including Web, macOS, IOS as well as Windows and any type of Linux-based systems, all from one code-base, written in Dart. This allows for more efficient and faster cross-platform development. Another benefit of Google's toolkit are the highly customizable predefined UI components. Developers can mix and match these components however needed which makes them an applicable choice.

We chose flutter mainly for these reasons, but also because of our previous experience with Java to which Dart is quite similar. Through it, we were able to get started quickly, learn what we need along the way. Having a design through the components was also very helpful and saved us some time.

("flutter/README.md at master · flutter/flutter", 2025) (Dagne, 2019)



2.4 Backend

2.4.1 Java Spring

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2.4.2 PostgreSQL

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Andreas Weissl 3

2.4 Backend

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4 Andreas Weissl

2.5 Version Control

2.5.1 Git

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2.5.2 GitHub

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Leon Edlinger 5

2.5 Version Control

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6 Leon Edlinger

2.6 Map Data

2.6.1 OpenStreetMap

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2.6.2 Graphhopper

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2.7 Development Tools

2.7.1 VS Code

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2.7.2 IntelliJ

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2.7.3 Android Studio

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2.7.4 Postman

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2.7.5 Figma

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2.8 Deployment

- 2.8.1 Docker
- 2.8.2 Uberspace
- 2.8.3 Webmin
- 3 Wireframes
- 3.1 Admin Ansicht
- 3.2 User Ansicht
- 4 Research Questions
- 4.1 Leon Edlinger
- 4.2 Paul Gigler
- 4.3 Andreas Weissl
- 5 Final Thoughts
- 5.1 Leon Edlinger
- 5.2 Paul Gigler
- 5.3 Andreas Weissl

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Dagne, L. (2019). Flutter for cross-platform app and sdk development. $Flutter\ for\ Beginners.\ (n.d.).\ https://books.google.at/books?hl=de&lr=\&id=pF6vDwAAQBAJ&oi=fnd&pg=PP1&dq=benefits+dart+language&ots=dZJWUGVs4x&sig=a196WqhXmQzuy23cmcKpEpIqn_k&redir_esc=y#v=onepage&q=benefits%20dart%20language&f=false flutter/README.md at master · flutter/flutter [[Online; accessed 23. Jan. 2025]]. (2025, January).\ https://github.com/flutter/flutter/blob/master/README.md$

7 Appendix

7.1 Meetings

Protokolle der Meetings, vielleicht auch ein zeitplan wann immer und wie lang

7.2 Working Hours

Arbeitspaket-Nr.	Beschreibung	Dauer
1	Einführung und Einarbeitung	8 h
2	Grundkonzept erstellen	8 h
3	Struktur der App festlegen	6 h
5	Wifi-Socket in App implementieren	39 h
6	Write-Funktionalität in App implementieren	14 h
7	Read-Funktionalität in App implementieren	19 h
8	Trim-Funktionalität in App implementieren	10 h
9	Konfigurationsmöglichkeiten für Flug in App implementieren	16 h
10	Höhenregelung-Funktionalität in App implementieren	14 h
12	Graphische Darstellung der Flugdaten	18 h
14	App testen und debuggen	19 h
26	Gesamtkonzept testen und debuggen	16 h
Summe		

Table 1: Arbeitszeitnachweis

7.3 Source code directory

Source Code directory, kein plan was des is

7.4 List of illustrations

Liste alle abbildungen oder so, ka müss ma uns anschauen

7.5 Abbreviation

ADC Analog Digital Converter

API Application Programming Interface

BLE Bluetooth Low Energy
CPU Central Processing Unit
DAC Digital Analog Converter

DAVE Digital Application Virtual Engineer

DSP Digital Signal Processor

FPU Floating Point Unit

FPV First Person View, First Pilot View

GPIO General Purpose Input/Output

GPS Global Positioning System

GUI Graphical User Interface

HDMI High Definition Multimedia Interface

I²C Inter-Integrated Circuit

IDE Integrated Development Environment

IP Internet Protocol RPI Raspberry Pi

SD Secure Digital

SPI Serial Peripheral Interface

USB Universal Serial Bus

TCP Transmission Control Protocol

UART Universal Asynchronous Receiver Transmitter

WLAN Wireless Local Area Network

WPA WiFi Protected Access

XML Extensible Markup Language