



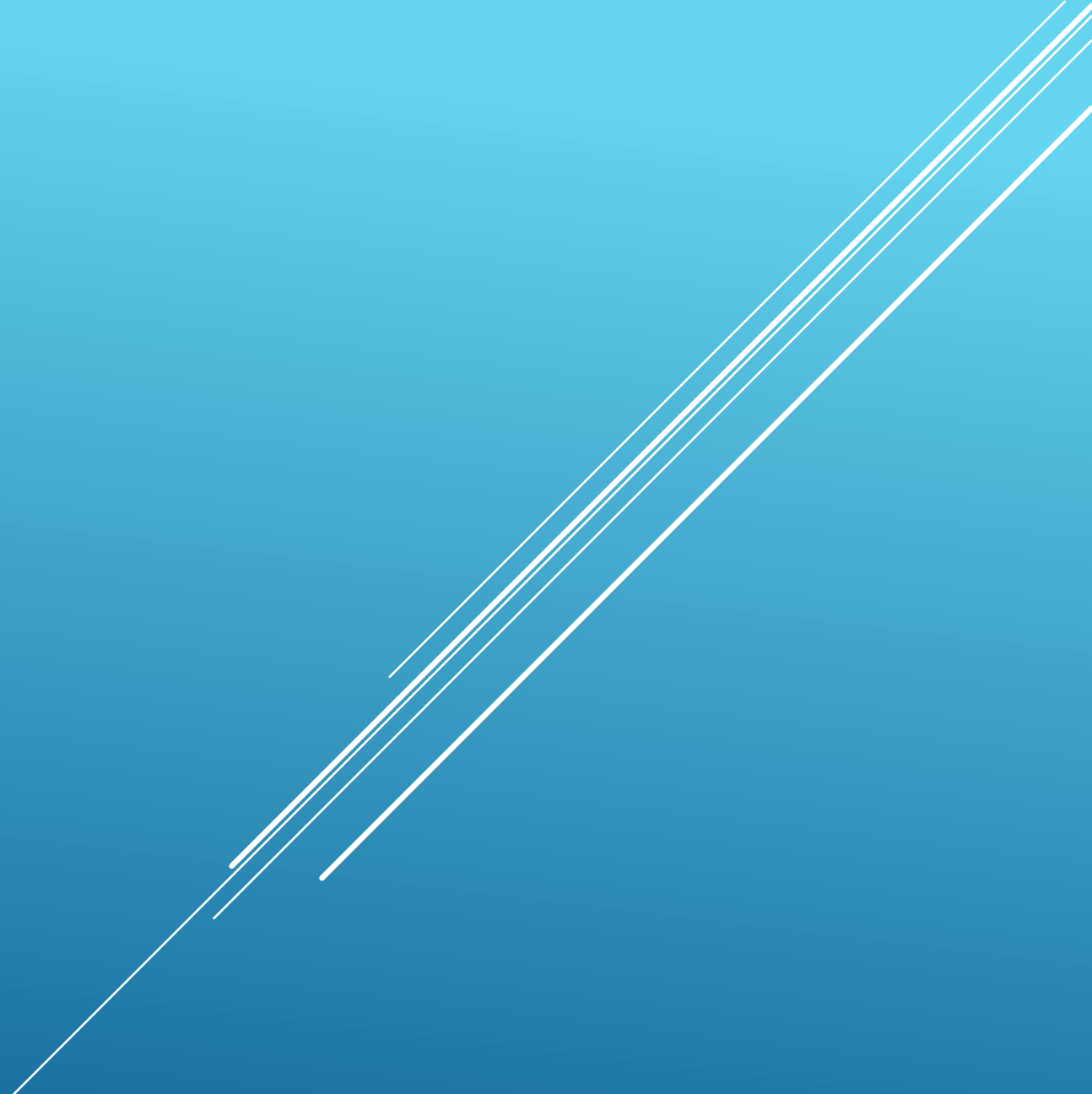
<https://public.carlcare.com/public/fca720a3bd2e931266669819b0b8bfb5.jpg>




<https://www.shutterstock.com/image-photo/overslept-man-holding-alarm-clock-waking-1761880997>

SMARTER WECKER

Bernd Storath



GLIEDERUNG

- Motivation
 - Komponente
 - Aufbau
 - Backend
 - Frontend
 - App
 - Fazit
 - Ausblick
- 
- Several white lines of varying lengths and orientations are positioned in the bottom right corner of the slide, creating a modern, abstract graphic element.

Smartphone

- ▶ Strahlung
- ▶ Handy Akku
- ▶ Dauerhaft aufladen

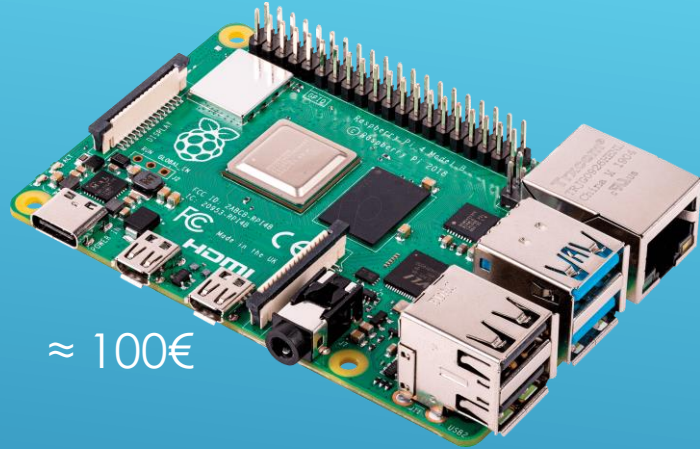
Wecker

- ▶ Schlechte Bedienung
- ▶ Schnell kaputt

Umwelt

- ▶ Kein Plastik
- ▶ Reparierbarkeit

MOTIVATION



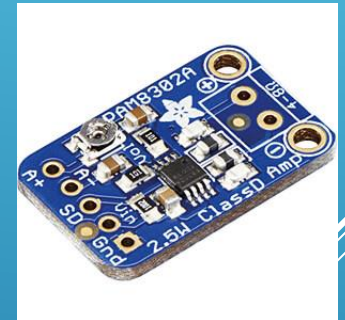
≈ 100€



≈ 50€



≈ 10€

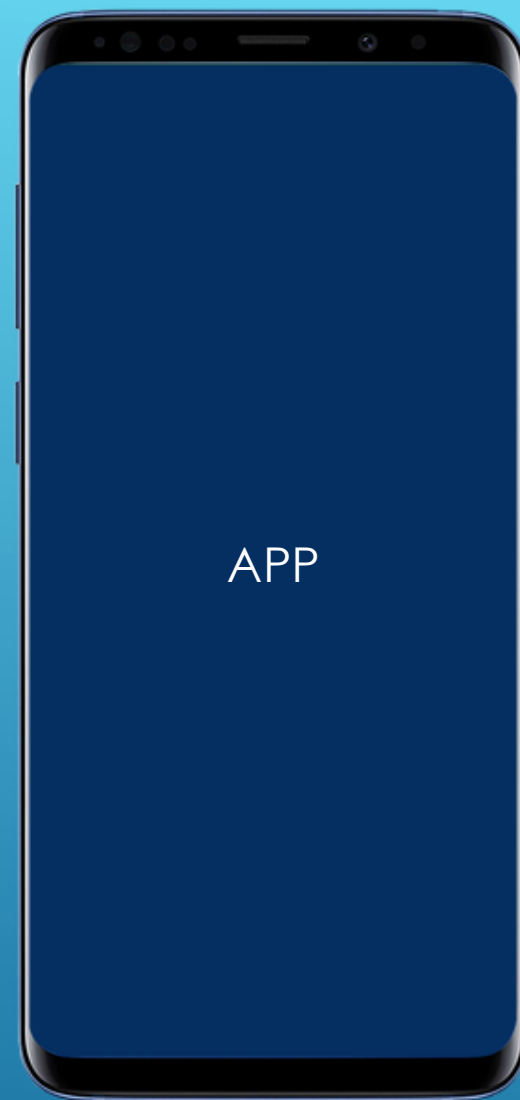
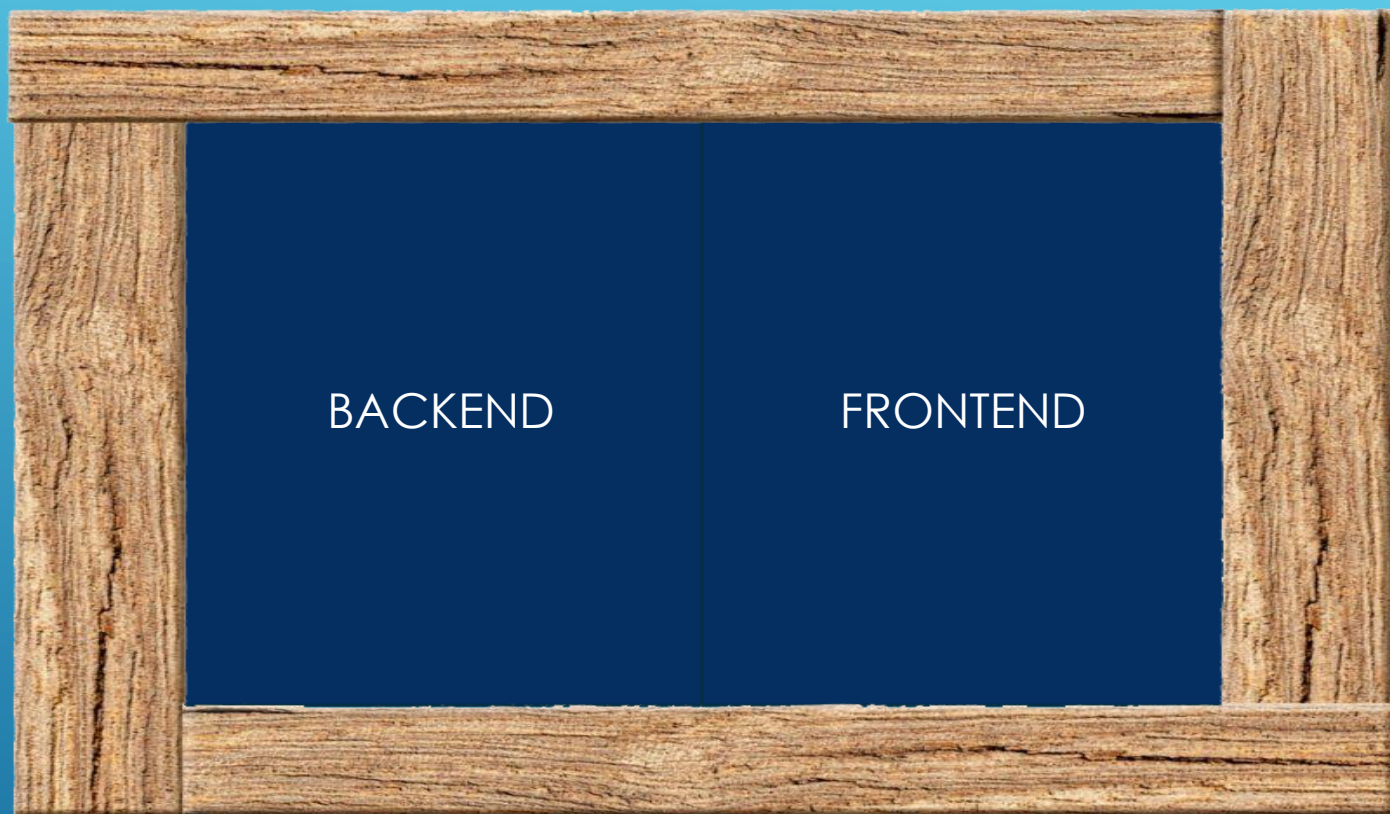


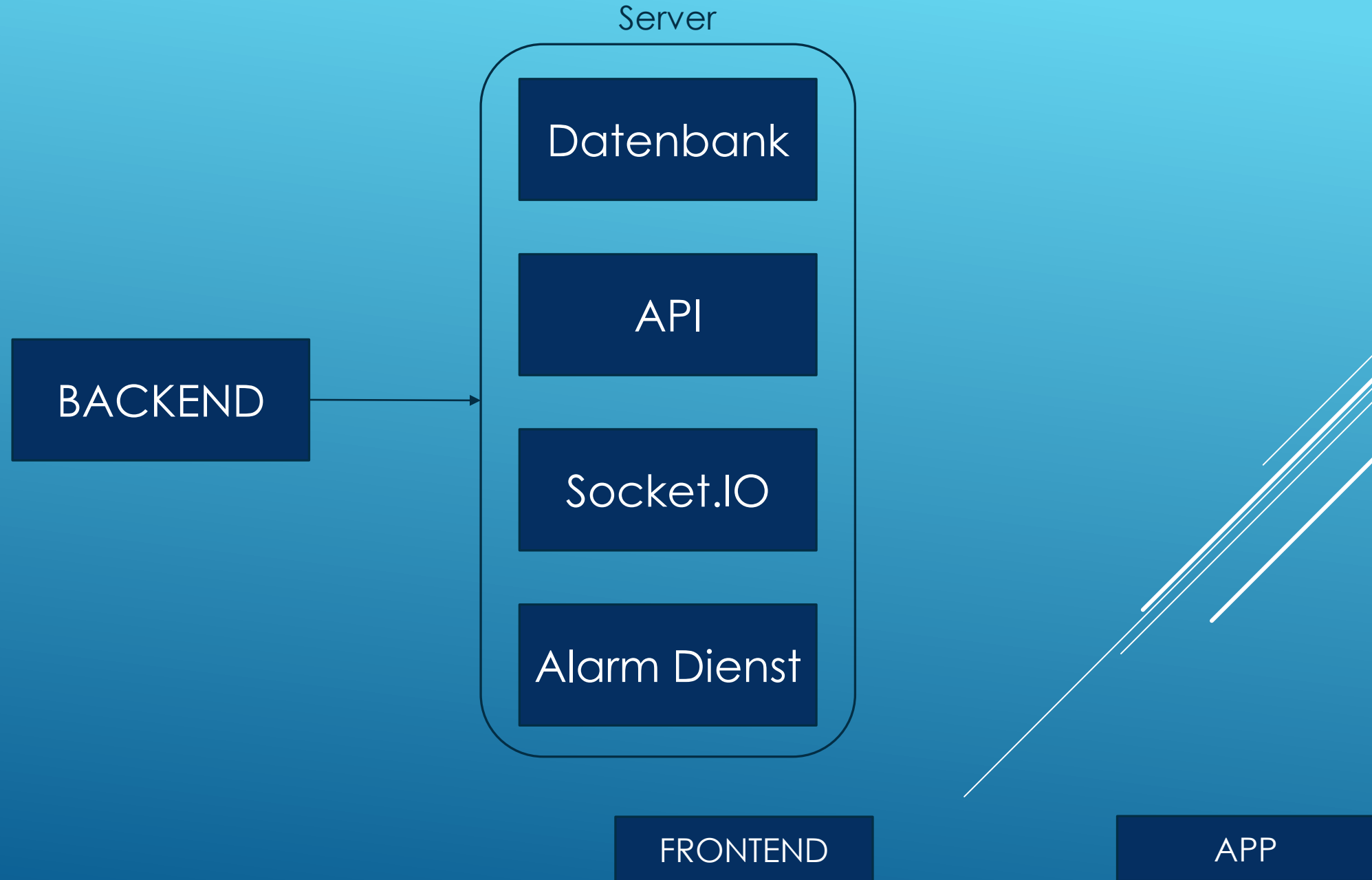
≈ 5€

KOMPONENTE



GEHÄUSE





Datenbank

- Format: JSON
- Speichert Daten
→ Persistenz

API

Socket.IO

Alarm
Dienst

```
{
  "settings": {
    "timezone": "Europe/Berlin",
    "location": {
      "city": "Wülfershausen",
      "countryCode": "DE",
      "lat": 50.0540866,
      "lon": 9.9995626
    }
  },
  "ringtones": [
    {
      "name": "Alarm",
      "location": "/ringtones/Alarm.mp3"
    }
  ],
  "alarms": [
    {
      "ringtone": "Alarm",
      "time": "06:18",
      "days": [
        true,
        true,
        true,
        true,
        true,
        false,
        false
      ],
      "enabled": true,
      "name": "Schule"
    }
  ],
  "initialized": true
}
```

FRONTEND

APP

Datenbank

API

Socket.IO

Alarm
Dienst

- Framework: Express
- Paradigma: REST
- zod-Validierung

```
api: {  
  alarms: new DependsOnMethod({  
    get: getAlarmsController,  
    delete: deleteAlarmsController,  
    patch: patchAlarmsController,  
    post: postAlarmsController  
  }),  
  ringtones: new DependsOnMethod({  
    get: getRingtonesController,  
    delete: deleteRingtonesController,  
    post: postRingtonesController  
  }),  
  settings: new DependsOnMethod({  
    get: getSettingsController,  
    post: postSettingsController  
  })  
},  
ringtones: new ServeStatic(join(__dirname, '../Ringtones'), {  
  index: false,  
  redirect: false,  
  setHeaders: (res) => {  
    res.setHeader('Access-Control-Allow-Origin', '*');  
  }  
})  
})
```

FRONTEND

APP

Datenbank

API

Socket.IO

Alarm
Dienst

- Protokoll: WebSocket

```
this.server.on('connection', (socket: Socket) => {  
  if (socket.handshake.query.type === 'frontend') {  
    this._frontend.push(socket);  
  } else if (socket.handshake.query.type === 'client') {  
    this.clients.push(socket);  
  }  
  console.log(  
    `CONNECT ${socket.id} ${socket.handshake.address} ${socket.handshake.query.type}`  
  );  
  socket.on('disconnect', () => {  
    if (socket.handshake.query.type === 'frontend') {  
      this._frontend = [];  
    } else if (socket.handshake.query.type === 'client') {  
      this.clients = this.clients.filter((s) => s.id !== socket.id);  
    }  
    console.log(  
      `DISCONNECT ${socket.id} ${socket.handshake.address} ${socket.handshake.query.type}`  
    );  
  });  
  
  socket.on('passthrough', ({ to, event, data }) => {  
    console.log(`PASSTHROUGH ${socket.id} ${to} ${event} ${data}`);  
    if (to === 'frontend') {  
      this.emitFrontend(event, data);  
    }  
  });  
});
```

FRONTEND

APP

Datenbank

API

Socket.IO

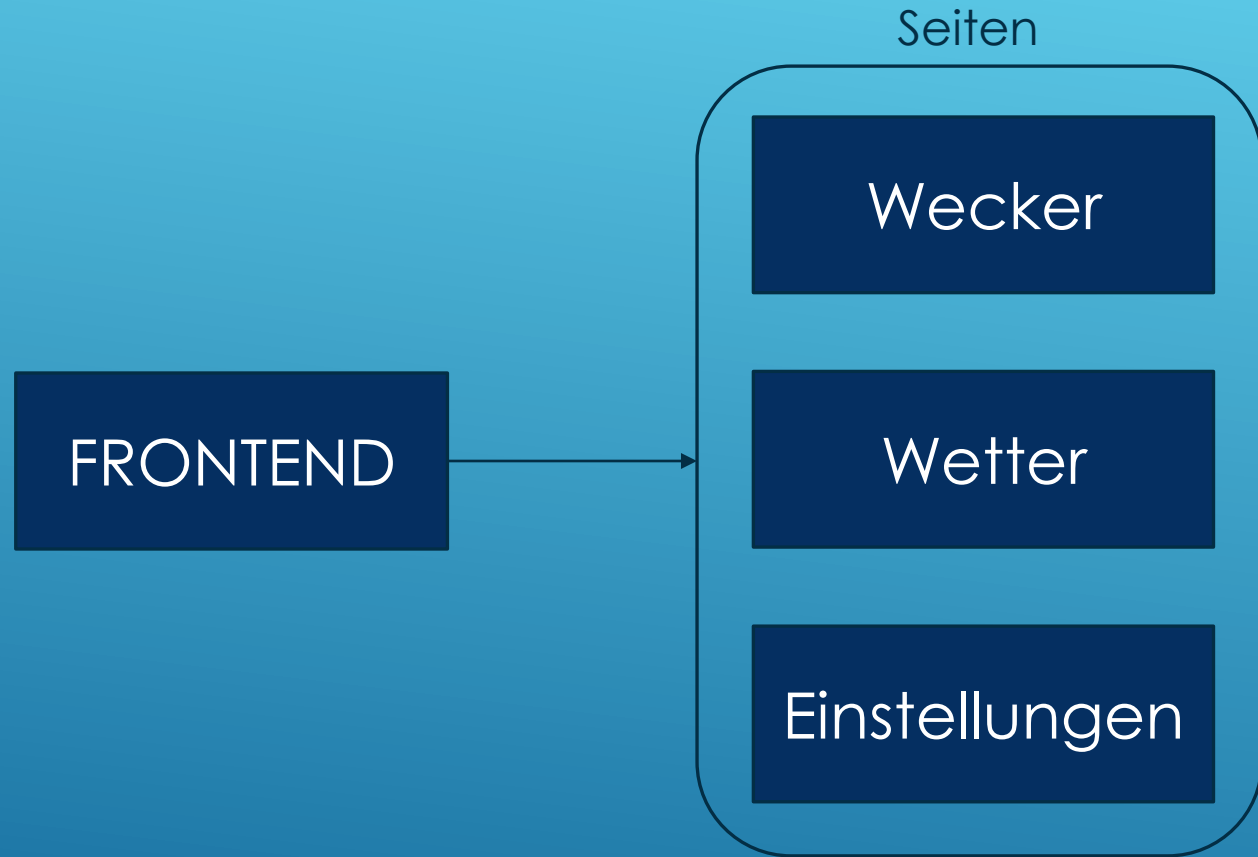
Alarm Dienst

- Weckt Nutzer

```
async check() {
  const alarms = await db.getAlarms();
  const settings = await db.getSettings();
  const date = new Date();
  /** `Day, HH:MM:SS` */
  const currentDate = date.toLocaleTimeString('de-DE', {
    timeZone: settings.timezone,
    weekday: 'long'
  });
  /** In `HH:MM` format */
  const currentTime = currentDate.slice(0, -3).slice(-5);
  const currentDay = currentDate.split(',')[0];
  const currentDayIndex = this.days.indexOf(currentDay);
  for (const alarm of alarms) {
    if (alarm.enabled && alarm.time === currentTime && alarm.days[currentDayIndex]) {
      this.ring(alarm);
    }
  }
}
```

FRONTEND

APP



APP

Wecker

Wetter

Einstellungen









Uhrzeit

15:52:57

Datum

16.10.2022

Wetter

heute	morgen	Dienstag	Mittwoch	Donnerstag	Freitag	Samstag	23.10.2022
							
19°C	20°C	17°C	15°C	13°C	11°C	12°C	16°C

APP

Wecker

Klingeln

Wetter

Einstellungen



Wecker

Schule

06:18

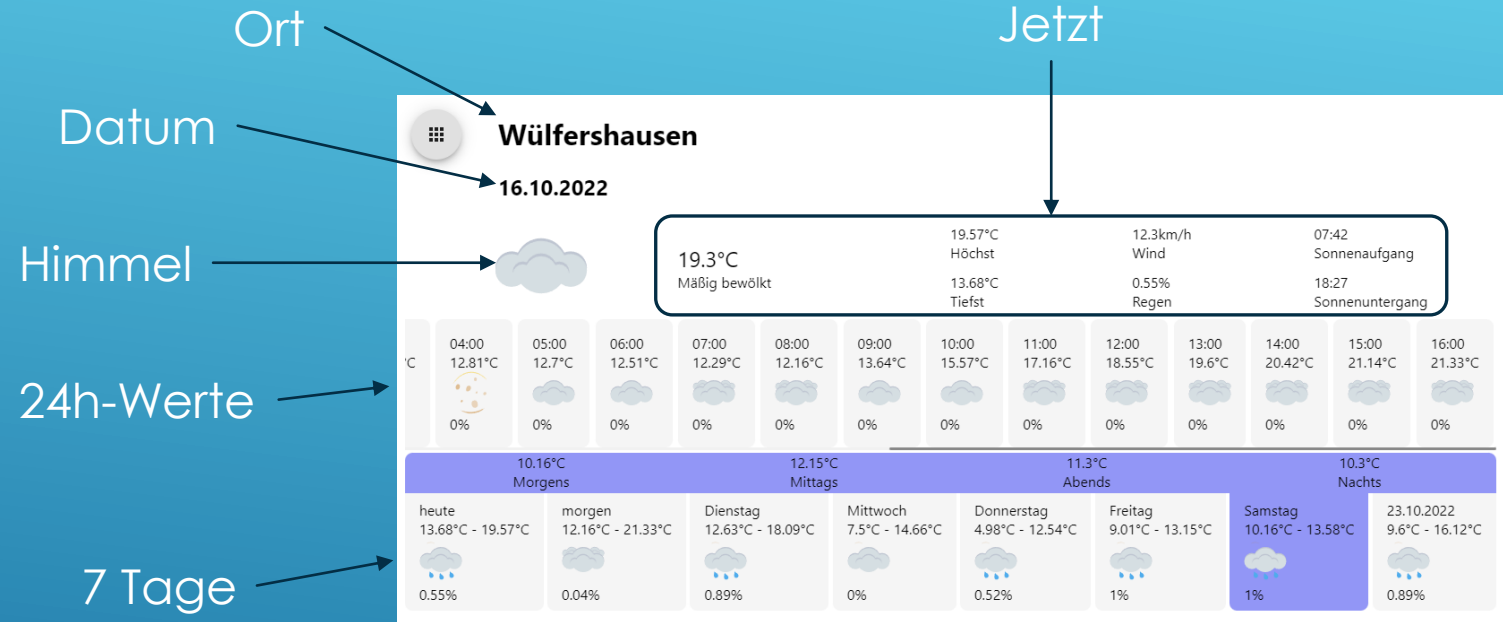
BEENDEN

APP

Wecker

Wetter

Einstellungen



APP

Wecker

Wetter

Quelle

Einstellungen

OpenWeather

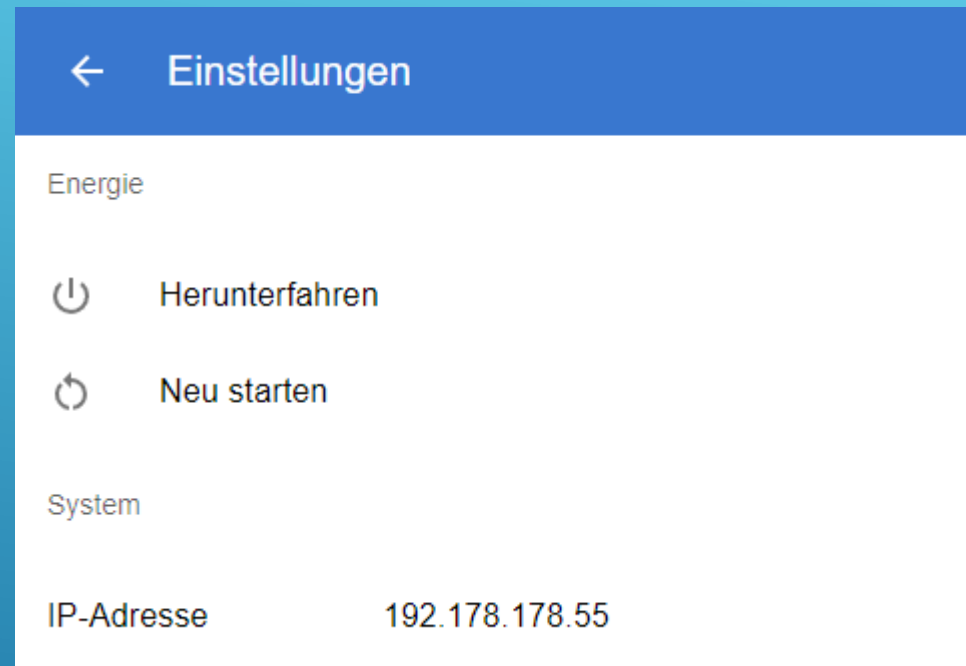
Weather forecasts, nowcasts and
history in a fast and elegant way

APP

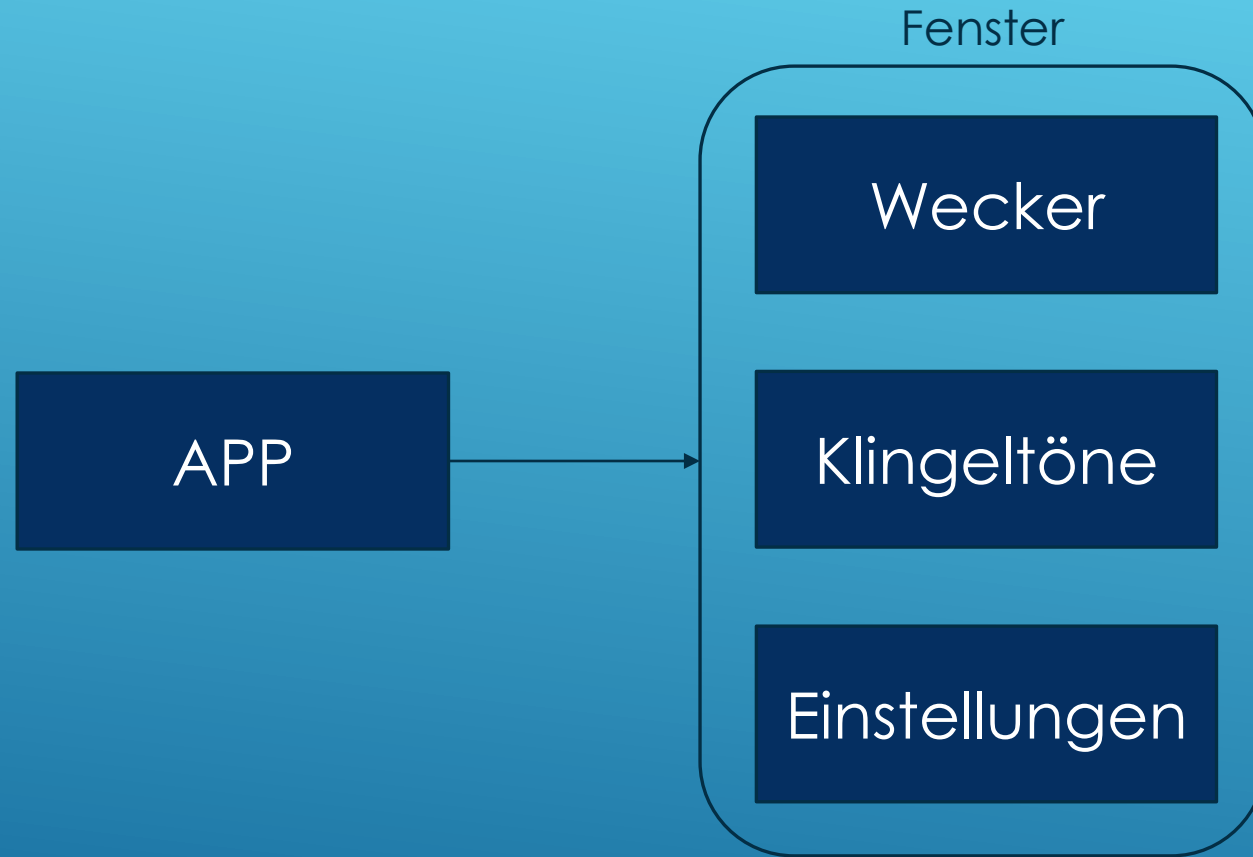
Wecker

Wetter

Einstellungen



APP



Wecker

Klingeltöne

Einstellungen

Aktiviert

Ferien

10:30



Mo Di Mi Do Fr

Test

15:03



Dienstag

Deaktiviert

Schule

08:18



Mo Di Mi Do

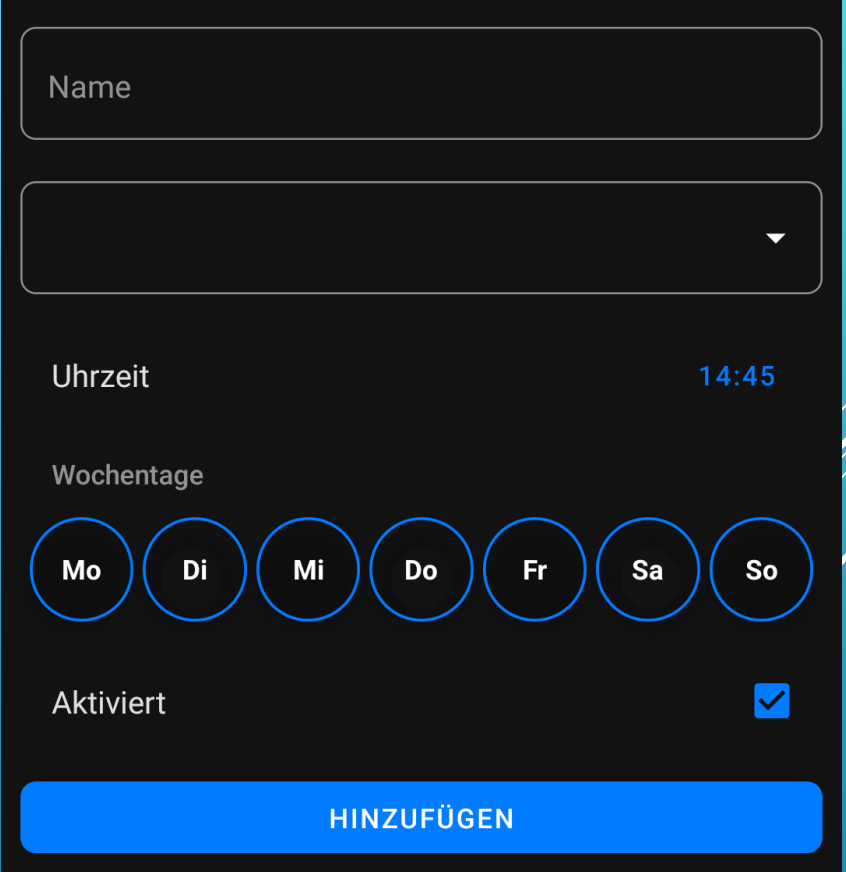
+ WECKER HINZUFÜGEN

Wecker

Erstellen

Klingeltöne

Einstellungen



A dark-themed form for creating an alarm. It features a text input for 'Name', a dropdown menu, a time selection field showing '14:45', a row of seven circular buttons for days of the week (Mo, Di, Mi, Do, Fr, Sa, So), a checkbox for 'Aktiviert' which is checked, and a large blue button at the bottom labeled 'HINZUFÜGEN'.

Name

Uhrzeit 14:45

Wochentage

Mo Di Mi Do Fr Sa So

Aktiviert ☒

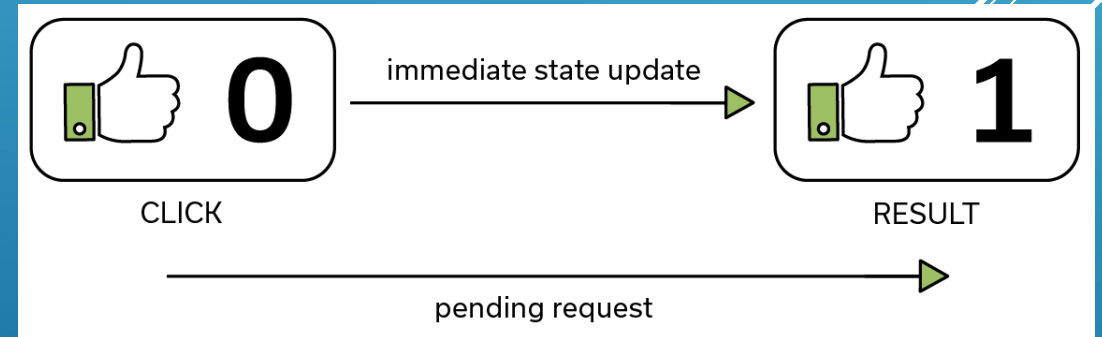
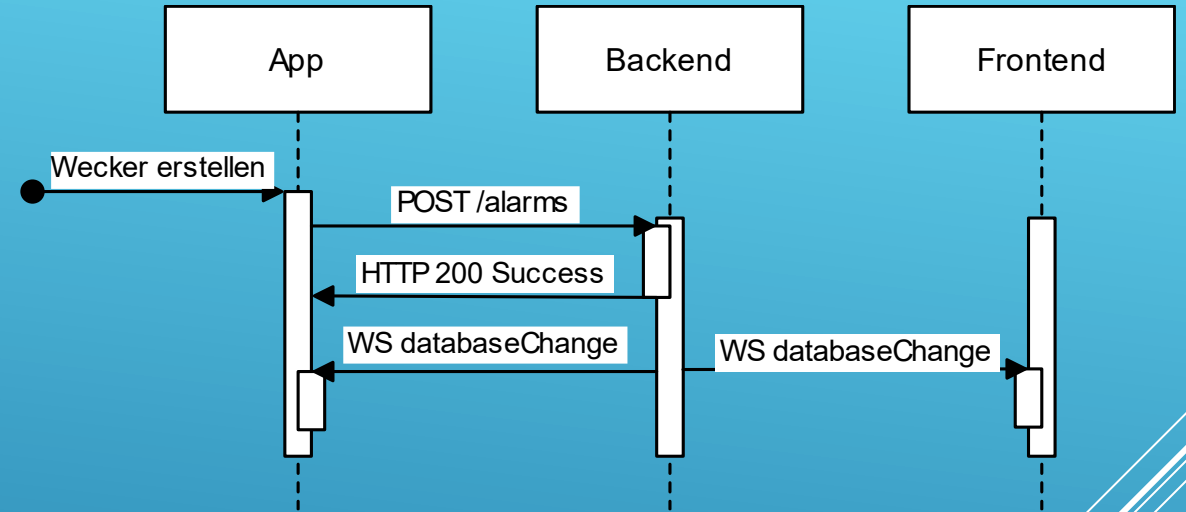
HINZUFÜGEN

Wecker

Erstellen

Klingeltöne

Einstellungen



Wecker

Klingeltöne

Einstellungen

Alarm



Underworld



Still Standing



+ KLINGELTON HINZUFÜGEN

Wecker

Klingeltöne

Erstellen

Einstellungen

← Neuer Klingelton

Name

Klingelton

WÄHLEN

HINZUFÜGEN

Wecker

Klingeltöne

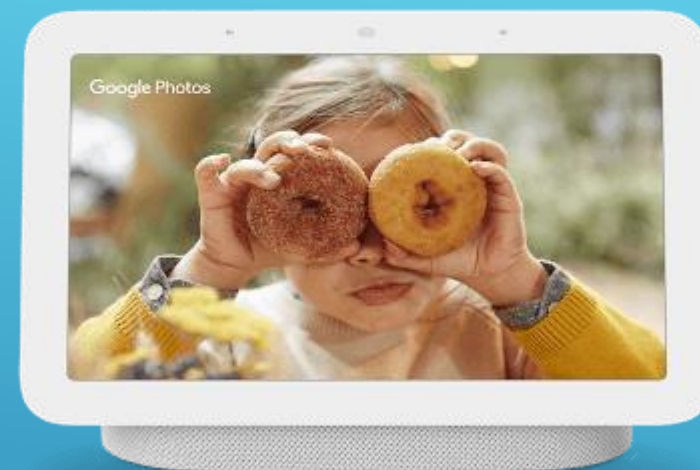
Einstellungen

IP-Adresse	192.168.178.47
Zeitzone	Europe/Berlin
Position	
Stadt	Wülfershausen
Ländercode	DE

Several white lines of varying lengths and angles are drawn in the bottom right corner of the image, creating a modern, abstract design element.



vs.



FAZIT

- ▶ Verkehr
- ▶ Kalender
- ▶ ToDos
- ▶ Musikplayer
- ▶ Bildergalerie
- ▶ Smart Home
- ▶ OLED Display mit Sensor

AUSBLICK