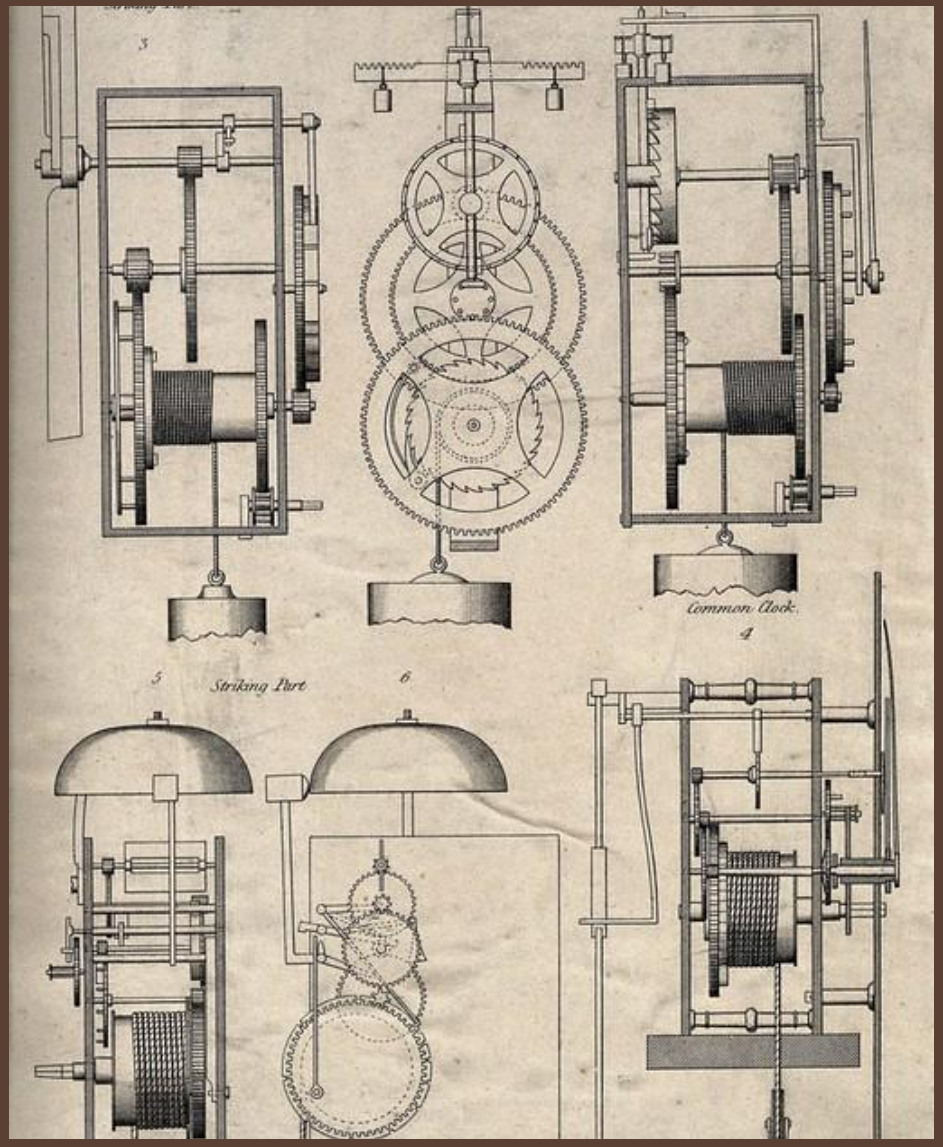
On Time

Punch Clock App

Rev. 4

ON TIME



Clocks: details of clock mechanisms. Engraving c. 1861
Wellcome Collection, United Kingdom - **CC BY**

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Introduction

Since people started working for other people, there was a **need** for a system **to calculate working time**.
Today, organizations and teams make their own solutions to calculate time, even in countries where this is required by law.
We propose a **novel solution** to this problem, an easy to configure and use application to work as a **time clock**.

*Worker using an **IBM time clock*** - © IBM

Electronic time clock - Public Domain

The main characteristics of the application:

- **It is easy to install and configure**; The whole point of changing an *in-house* solution for ours is to make life easier for employers.
- **Easy to use**; Employees are our only users for our application, that's why we put effort in making our application easy to use and accessible to any worker.
- **Free software**; This is a project for our vocational training studies and our team highly values the free software movement.

Tools

For our project we have chosen the following tools:

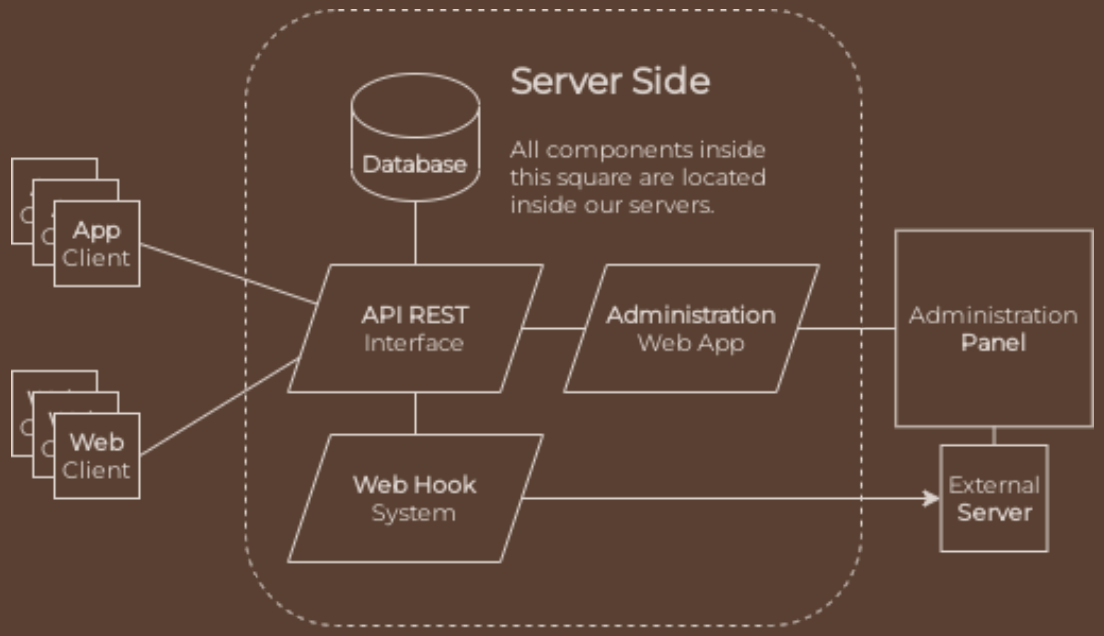
- **Version Control System:** We are working with git and host the code in GitLab.
- **Application Hosting:** DigitalOcean provides us with a VPS with the Debian GNU/Linux operating system to host our application.
- **Back-End Technologies:** Our code is written in PHP in an Apache2 web server using a MariaDB database.
- **Domain Provider:** DinaHosting provides us with the domain name "(TODO: obtener un dominio chulo)"
- **Web Front-End Technologies:** The website used in the on-premise web application is written in HTML, CSS and JavaScript.
- **App Front-End Technologies:** We have used Android Studio to program our App in Kotlin with the following libraries: ..., ..., ...

Blueprints

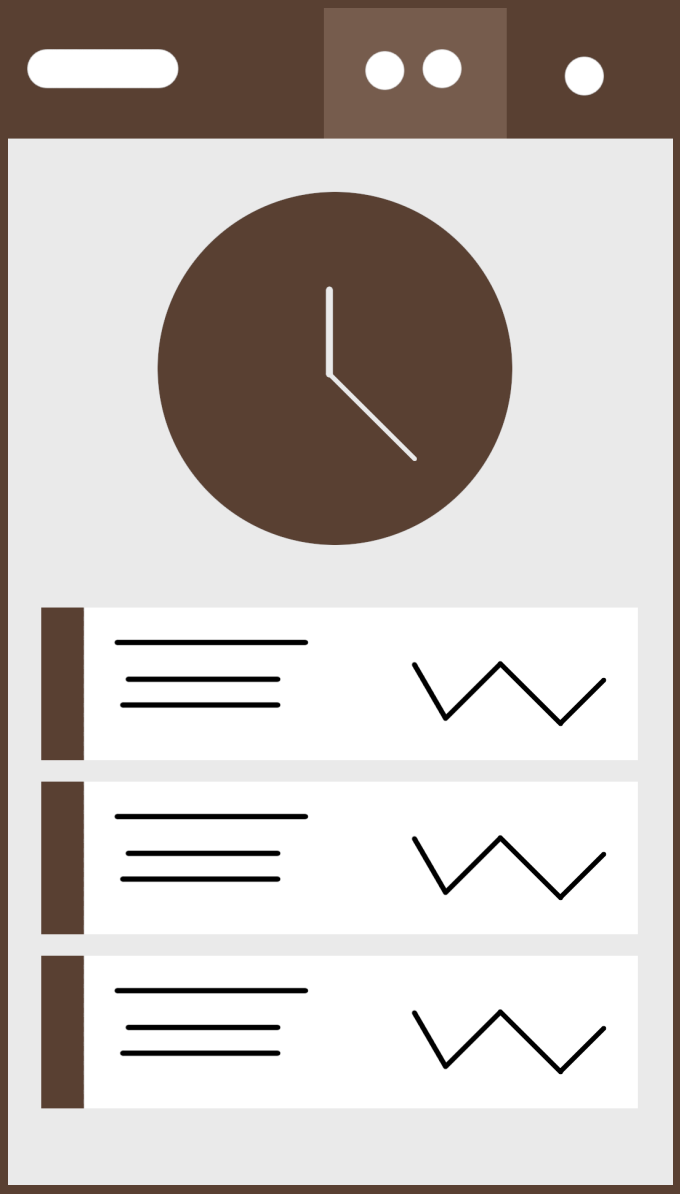
Structure

The full application is divided into 6 main components:

- **Database**
- **API**
- **Administration panel**
- **Web client**
- **Webhooks**



Note that all components are **FOSS** thus easily being able to be installed *on-premise*.



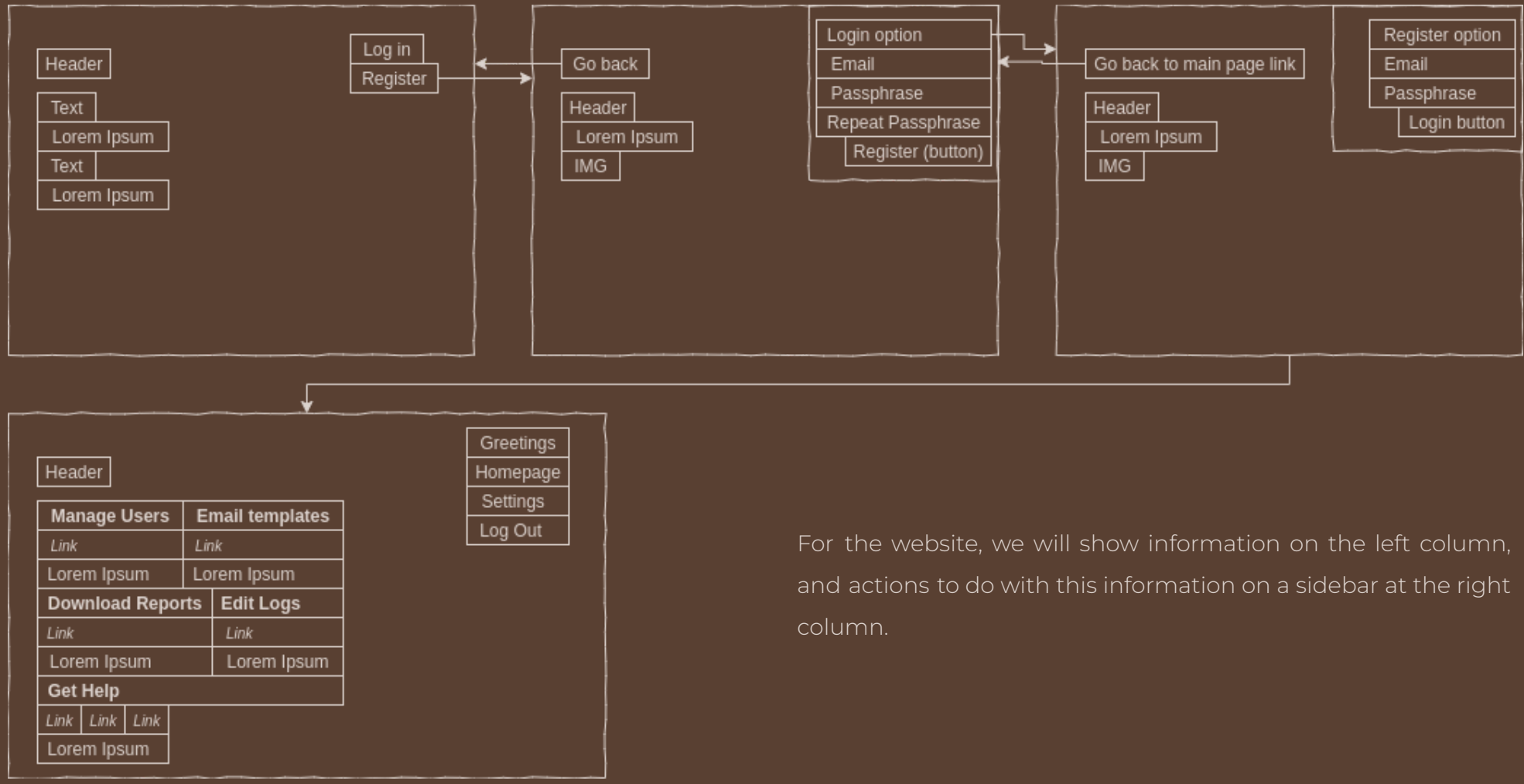
Style Guidelines

We are going with the old school style with **browns and cream** colors for accents, since old punch clocks are usually made out of wood.

For our main colors we are using **whites and grays** to show that our application is simple and easy to use. We will use the Montserrat font for this same reason.

The **icon is a single cream colored circle** to signify this app can be used by any company or organization, and because we have no further ideas.

Wireframe



For the website, we will show information on the left column, and actions to do with this information on a sidebar at the right column.

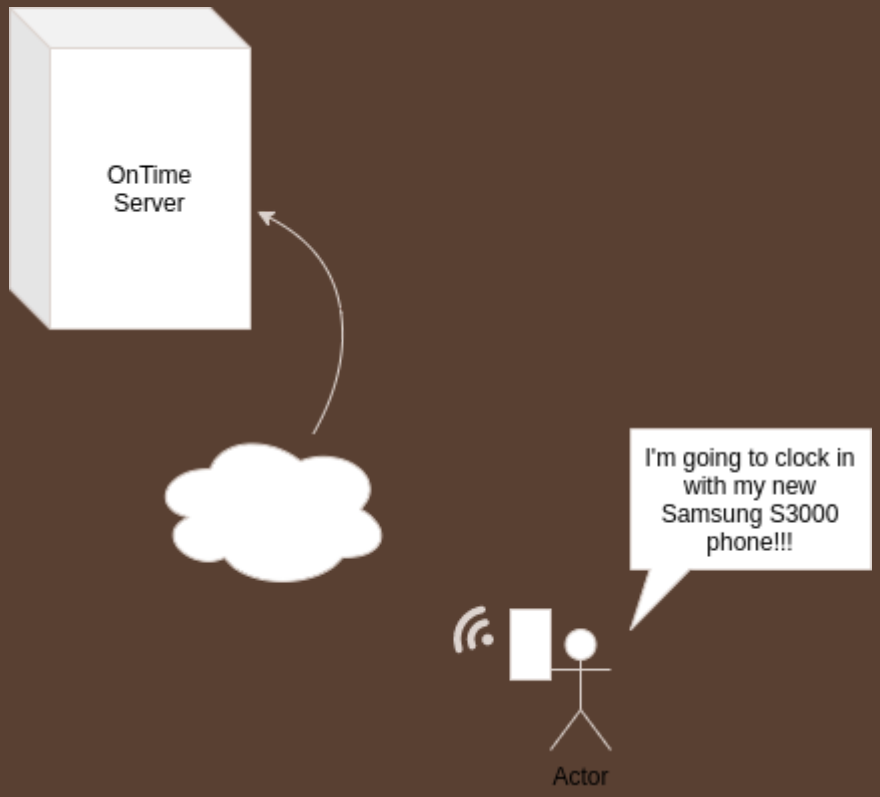
Components

Database *(ontime-database)*

Our database server works with **MariaDB**, we chose this option since it is a reliable, free and open source software database used by millions of developers around the world.

We have defined 3 base entities for the *minimum viable product* database:

- **Account** → The main account, the company that is using the application.
- **User** → The users of the application, workers of the company whose entity is “account”.
- **Record** → When a worker clocks in or clocks out, they leave a record.

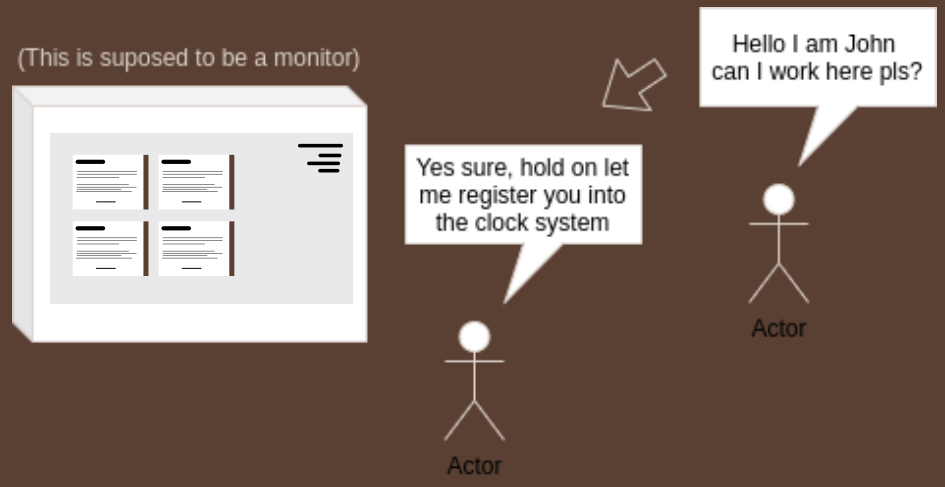


API *(ontime-api)*

The API part is developed in **PHP** inside an **Apache2** server.
It will be available only to clock in and out and to see user statistics, all other features are integrated into the administration panel.

Administration Panel *(ontime-panel)*

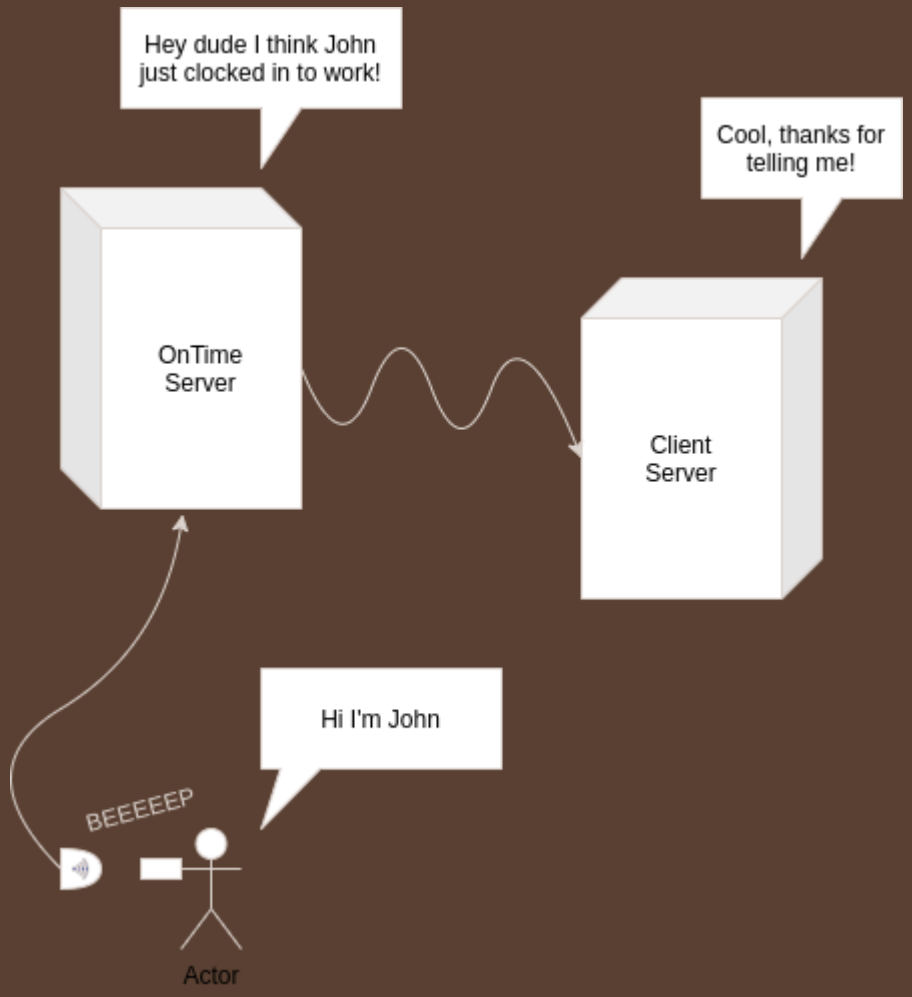
The administration panel is the tool the company uses to manage its data. Here they can add users to their workforce, change workers' RFID cards, and download reports for each user.



Web Client *(ontime-welcome)*

The web application will be used in physical punch clock locations.

Every worker has their own **RFID card** provided by their company, when a worker clocks in, they use this card in a **reader with a screen showing information** such as text to greet the owner of the card or to tell them goodbye after finishing working, who is currently in the office, what time it is, different fancy stuff configured by the company, &c.



Webhooks

The webhook system lets On Time integrate with the solutions our clients are already using. This system sends a signal to external servers when a worker clocks in and out.