

Point of Sale Application on PayDroid

Degree programme : BSc in Computer Science | Specialisation : Digital Business Systems

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A custom Point of Sale solution and a payment terminal merged into one mobile device? This is possible thanks to the newly certified payment terminals that run on a modified Android operating system called PayDroid. In this project, a production-ready application for PayDroid payment terminals and a corresponding administration web interface were developed to leverage the full potential of an all-in-one solution.

Initial Situation

The **Kulturfabrik Kofmehl Solothurn**, an event venue that mainly organises concerts, parties and other cultural events, has been relying exclusively on cashless payment since 2022, using several cash register systems. However, some of these systems are lacking in specific areas.

While looking for a solution, we came across the PayDroid payment terminals from Wallee AG, which were licensed in Switzerland and launched on the market a few years ago.

The Plan

The introduction of **PayDroid** payment terminals provided an opportunity to develop a custom checkout system to better suit the venue's specific needs. Their Android-based PayDroid operating system allows

for the addition of custom applications, opening up numerous possibilities.

The goal was to combine a Point of Sale (POS) software with a payment terminal to enhance the efficiency at the POS.

The Project

In a preliminary project, it was verified that the planned project, a custom payment application on a PayDroid device, can indeed be developed and used productively to leverage the full potential of an all-in-one solution.

As part of the Bachelor Thesis, a **fully functional POS application** was developed on PayDroid. In addition to the custom POS app, a corresponding backend was created in which the devices, articles and the transactions made can be examined and managed.

Technology

The PayDroid application, intended for the PAX A77 wallee, was built with Android Studio using the **Kotlin** programming language and was continuously tested on a Wallee development device. The reactive UI was designed with **Jetpack Compose**, while additional Jetpack libraries were utilized for other parts of the application.

The POS backend was engineered using **Laravel**, a PHP-based framework. Also, Laravel Nova was employed to extend the functionality of Laravel and to construct an intuitive administrative interface.

Results

The application and the associated backend were successfully developed during the Bachelor Thesis and are already **in productive use**. The application will be further developed and continuously adapted to current needs.



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POS Application on a PAX A77 wallee Payment Terminal