# Introduction

The assignment at hand presents the work done by Wojciech Lesnianski, Markus Just, Simon Schneider and Timo Acquistapace in the laboratory “Embedded Hardware”. It firstly introduces the product idea of Smart Cart and the change of scope that project went through. Later on, the architecture, the state machine and the technology stack that is used are described. For the purpose of developing the application Smart Cart, a data collection and data analysis had to take place. These steps are described in the section \ref{sect:dataAnalysis}.

## Initial Idea of Smart Cart

The first concept of smart cart was to offer its user the possibility to add items to a shopping list and to get this shopping list ordered as the user enters a supermarket. The entered grocery was determined with the help of the Here API. Based on the knowledge of the accessed shop and the ordering of its departments, the items that were previously added to the shopping list, should be ordered.

## Change of Scope and final Idea of Smart Cart

Even though the initial idea of Smart Cart would have been a very helpful application to the user, it is strongly based on the collaboration with the operators of the supported supermarkets. This is especially true for the data acquisition regarding the offered products and the available departments of a supermarket. Therefore, the initial scope of the application was changed towards an application that is less dependent on master data.

The revised concept of Smart Cart focusses more on the interaction of the user and the application. It omits the features of recognising a shop that is entered and ordering the list of shopping items according to the recognised shop. Instead, the application should offer the possibility of easily marking a item as ‘added to the cart’ and of navigating through the list via gestures. The recognition of gestures is done via the built-in sensors for acceleration and the gyroscope.