



WALLRAY - *Mobile Computing* Documentation

Felix Ohlsen, René Finzel and Fritz Oppelt

The main purpose of this document is to give you an introduction to the structure of the App "Wallray". Furthermore, it will show you the most important classes and technologies used in this app and a small excursion to the most interesting parts, like the room number detection or the possibilities coming with the AR Kit.

Introduction

Wallray is designed to fill the gap of miscommunication between architects and engineers which want to plan and install different kind of pipes and lines in a new building. Every now and then, pipes are installed at the wrong places or at other places known to the architect. Wallray provides the perfect platform for them to save all the plans in one single source of truth and brings also the possibility of displaying all pipes of a room in realtime in AR by selecting the given room or automatically recognize it with the room number detection.

Classes

ARViewController This class provides all functions to display, create and render lines in a given room.

TableViewController This class implements the functionality to call an add function of another class, display and update the table of all rooms in a house.

AddRoomViewController In this class a new room object is created with the instances of its RoomID, number and its appendant houseID and uploaded to the cloud.

Technologies

ARKit The AR Kit provides methods to display and interact with objects in the Augmented Reality. Furthermore it is possible to track the world surrounding your device and images can be detected and recognized.

Parse Wallray is using parse on an AWS Amazon Cloud service which provides the app a persist synchronisation of all the collected data on all the app users. This cloud connection is necessary to provide accessibility on the app from everywhere with a single source of truth.

Functionality

AR Kit Wallray uses the functionality of the AR Kit to display lines in a given room. This is implemented by rendering single points to lines and displaying them afterwards.

Room number detection Wallray combines the view of the camera with a scanning function to convert a room number into a string, so it can be verified with the data source afterwards if there is any compliance. In case of compliance, the view of the given room is started. The scanning function itself is really unreliable in cases of reflexions, so this function isn't used for this reason.