

UNIVERSITÉ CATHOLIQUE DE LOUVAIN



LINGI2252

SOFTWARE MAINTENANCE AND EVOLUTION

---

# Home Automation System – Lab 1

---

*Authors:*

GUSTIN Simon

1171-14-00

HALLET Adrien

3276-13-00

*Professor:*

MENS Kim

*Assistant:*

DUHOUX Benoît

October 3, 2018

# 1 Lexicon

**Domotics** Automation of systems within a house.

**Sensor** Physical device that measures the magnitude of real-life variables.

**Motion sensor** Sensor that detects movements in a given space.

**Proximity sensor** Sensor that detects when a given object is close to it.

**Badge detector** Sensor that detects and checks the rights of a closeby badge.

**Audio sensor** Sensor that measures audio signals.

**Video sensor** Cameras (infrared, normal light, etc).

**Consumption sensor** Sensor that detects and records the consumption of different resources (power, water, etc).

**Temperature sensor** Thermometer.

**Gas sensor** Sensor that detects and measures the quantity of certain substances in the air (smoke, carbon monoxide, etc).

**Clock** Sensor that measures the time flying by (and can be used to set alarms at certain times).

**Heavy appliance** Home systems that use lots of electricity (washing machine, dishwasher, oven, etc).

**IoT** Internet of Things, the use of the internet for appliances like watches, clothes, ...

**Hub** Physical and/or digital system to centralize a group of systems.

## 2 Features

### 2.1 Ambiance and well-being

**Temperature management** Turn the heating system on/off.

**Blinds management** Open or close the blinds.

**Lighting management** Turn on/off the lights in different rooms.

**Air quality control** CO detection, humidity sensing, air quality control.

## 2.2 Safety

**Security control** Detection of potential burglars, alarms, automatic police calls, smart doors (locks and opening).

**Fire handling** Smoke detection, automatic sprinklers, automatic firefighters call.

## 2.3 Everyday tasks

**Smart kitchen** Manage the cooking appliances, the fridge stocks, ...

**Automatic cleaning** Handling robotics vacuums, lawnmower, swimming pool cleaner.

**Gardening** Humidity captors, automatic sprinklers.

**Heavy appliance** Manage the heavy appliance to minimize electricity consumption and bill (i.e.: night shift).

**Baby and pet care** Tracking position, health and well-being (including food dispenser).

**Sound systems management** Manage the alarms, radios, home-cinema systems.

**Electronics management** Manage computers, televisions, everything that isn't heavy appliance.

**IoT management** Hub to control all the user's IoT equipment.

**Phone management** Redirect calls, send notifications when called, ...

## 2.4 Consumption control

**Water management** Water consumption notifications, leak detection.

**Power management** Power consumption notifications, real-time management of the appliance currently consuming power.