

Smart Homes

COMPUTER LITERACY

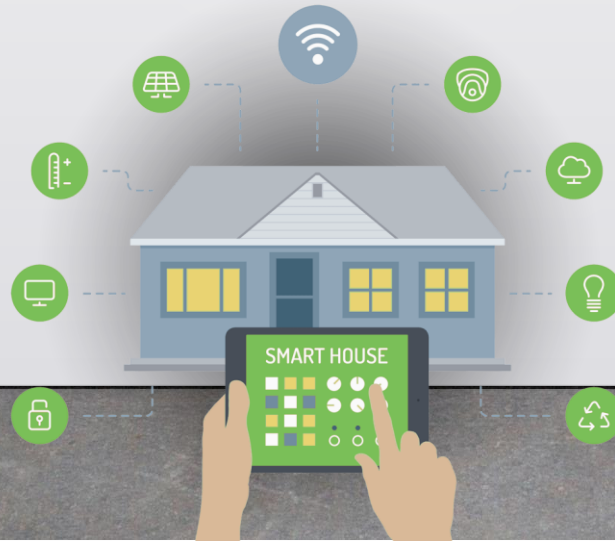
What is a Smart Home?



Smart home: a dwelling incorporating a communications network that connects the key electrical appliances and services, and allows them to be remotely controlled, monitored or accessed.

Elements of a smart home:

- Communication network: wire, wireless, or mixed
- Intelligent control: system management
- Home automation: relevant components and systems

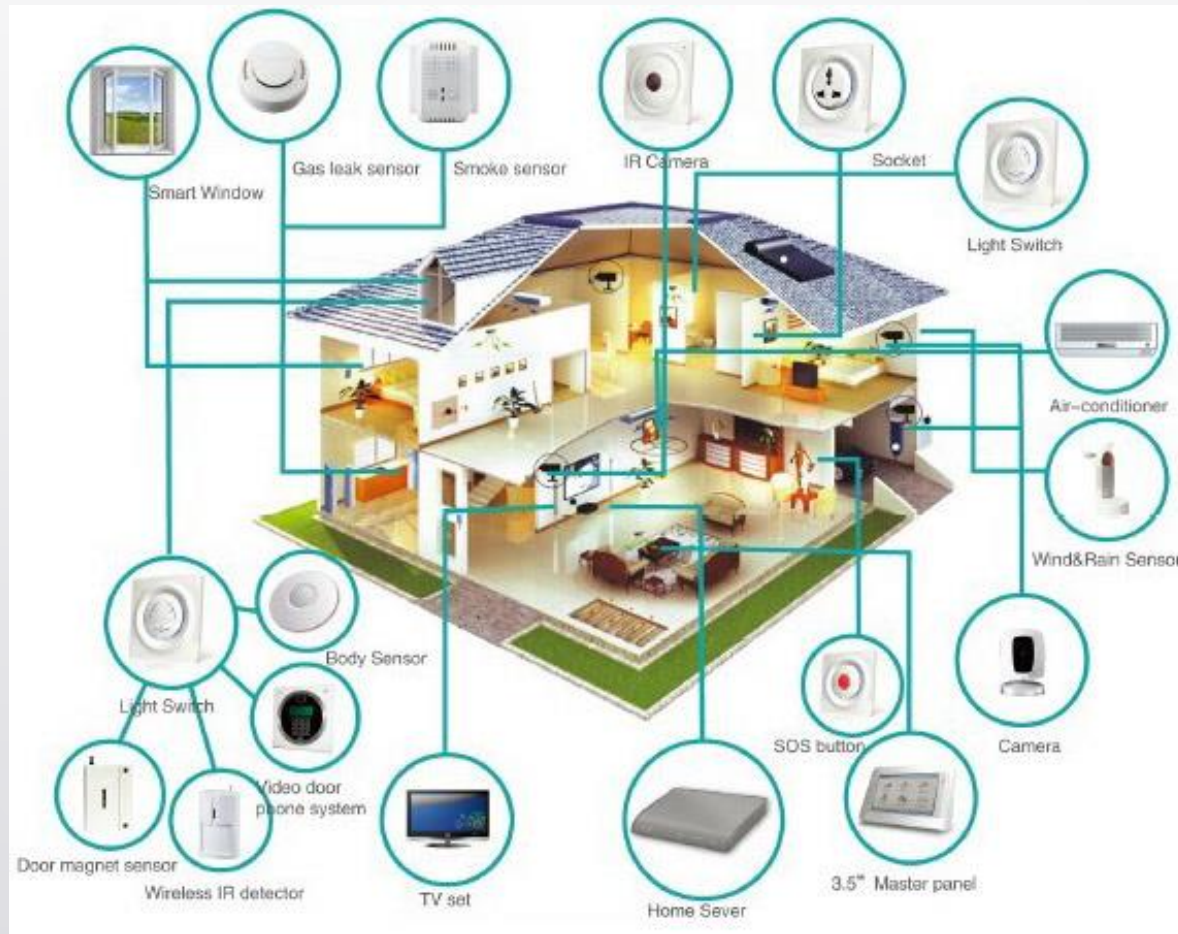


Major Areas of Application



- **Home appliances**
 - Oven
 - Fridge
- **Environment**
 - Lighting
 - HVAC
 - Water
- **Health care**
 - care for the elderly and disabled
- **Security**
 - person recognition
 - alarms

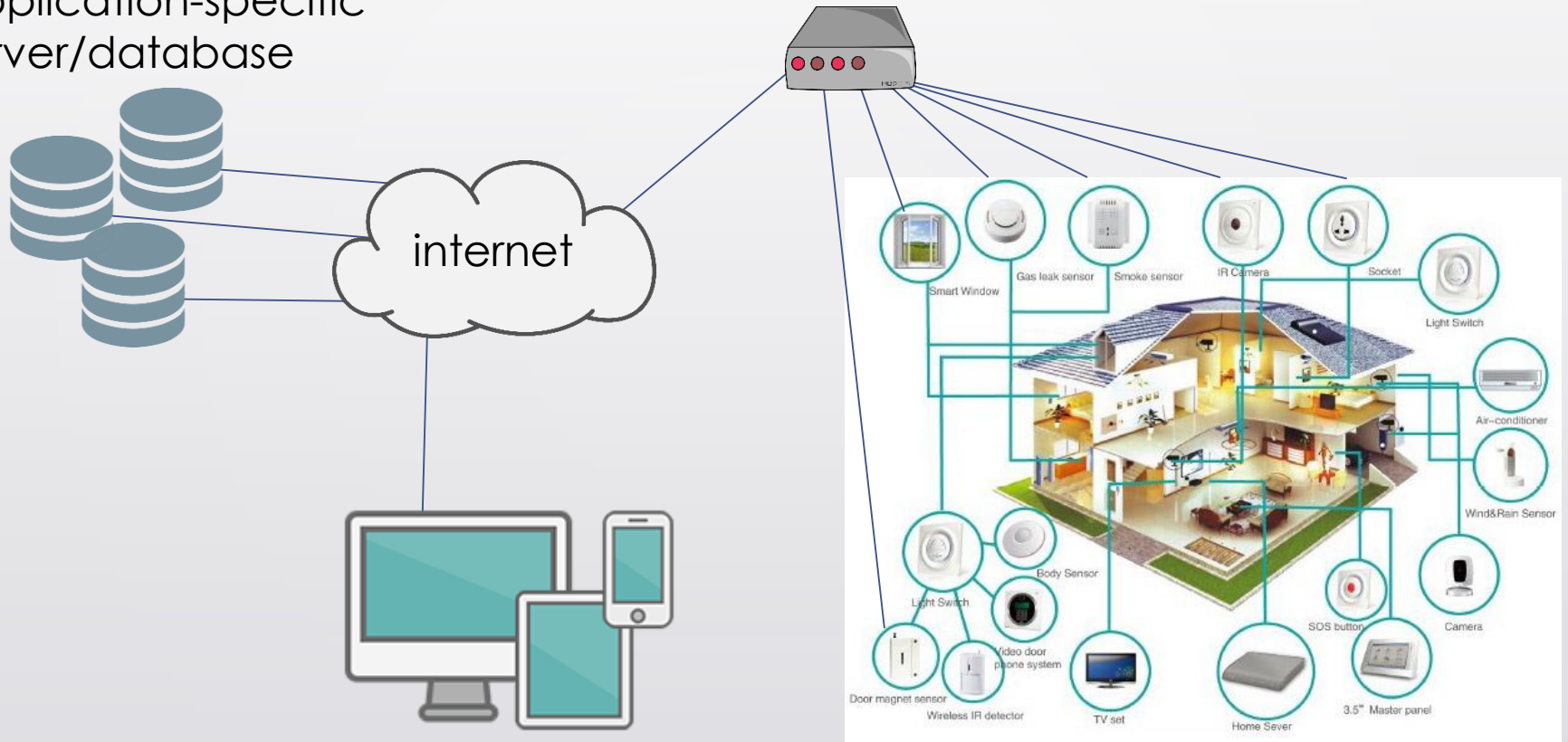
Smart Home System



Architecture for smart home system



Application-specific server/database



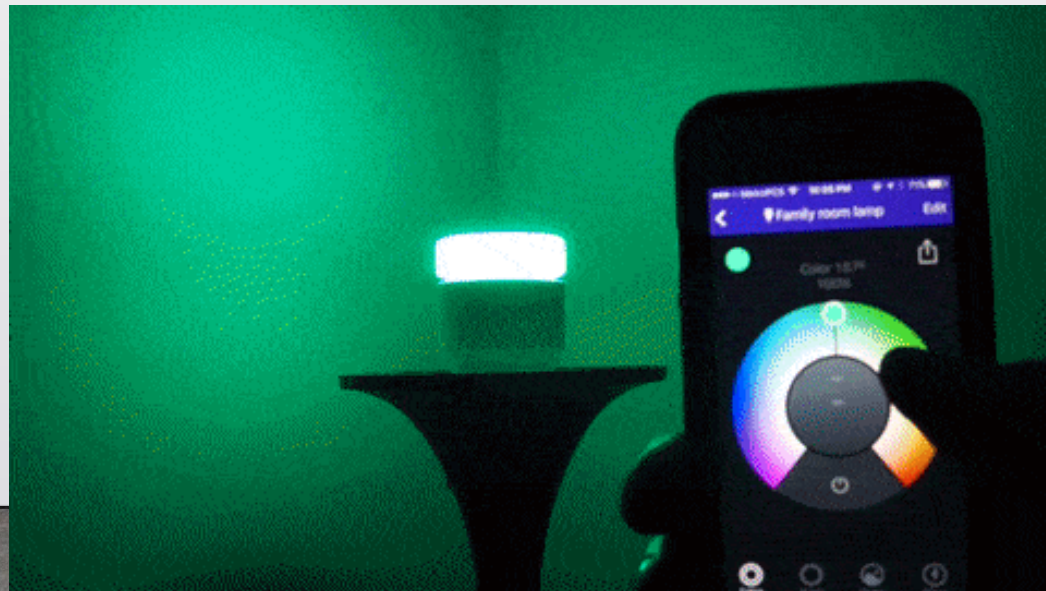
Smart home products that
are currently available

Smart lightbulbs

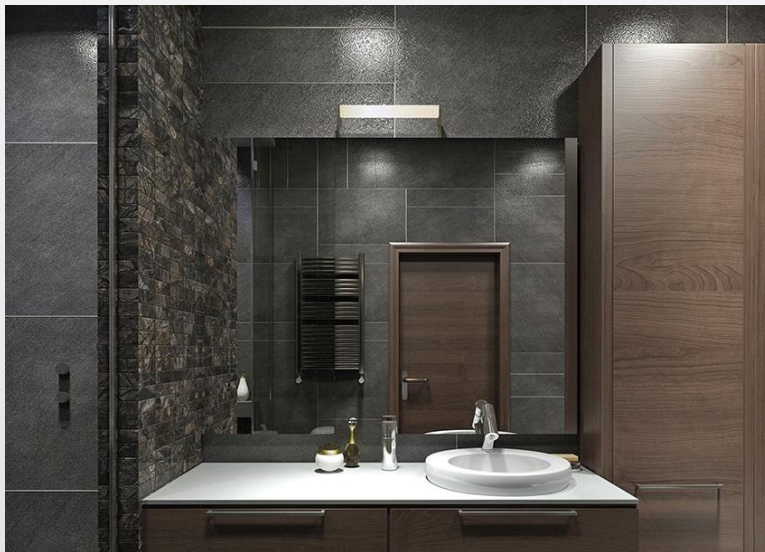


Change color or brightness based on

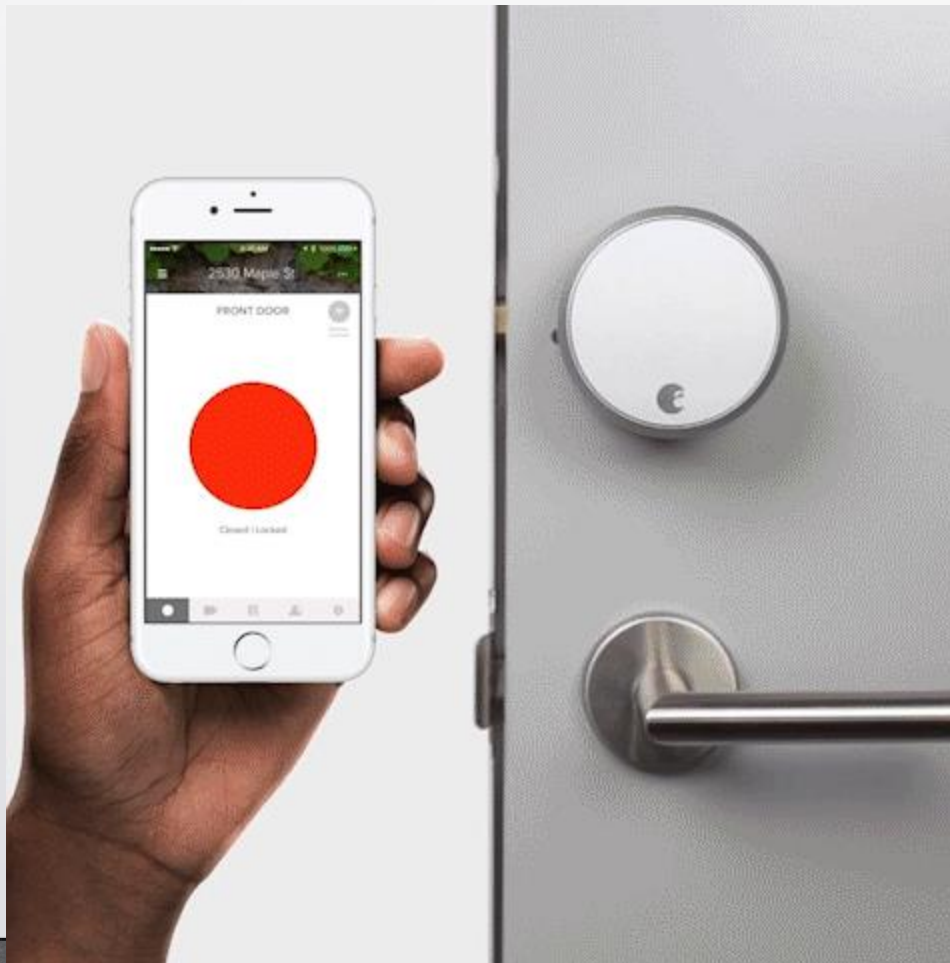
- Remote
- Cue – 8pm every night; on sunrise/sunset
- Upon receipt of text



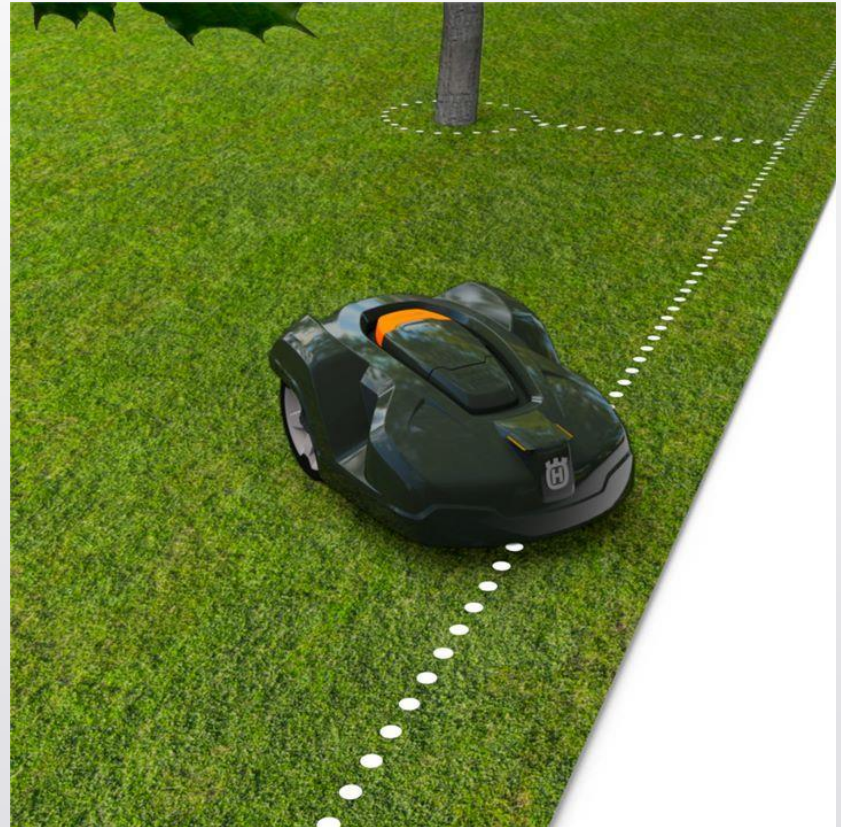
Smart mirrors



Smart locks and doorbells



Smart Lawnmowers



Hub: cooperating devices



Interacts with multiple devices and can be programmed with a set of rules.

- When someone leaves, automatically
 - turn off lights, heater/AC
 - lock door
 - set off alarm if motion sensor is activated
- When smart watch indicates you woke up, automatically
 - Turn on lights
 - Start brewing coffee
- Automatically be notified if there's a water leak in the basement

Future directions



- Personal assistant robot
- Integration with self-taught AI for predicting automation
- Must have increased security of software and devices



Smart Home Benefits



- Control at your fingertips
- Customization
- Reducing cost of home-security
- Comfortable living
- Accessibility
- Reduced energy wastage

Smart Home Challenges



- Reliability
- Cost
- Device variety
- Privacy and security issues
- Safety
- Learning curve