Project Plan Tech Devils



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# Description

**Goal**

The goal of this project is to design a smart student home where things like lighting, fans, curtains etc. can all be monitored, remote-controlled and easy to use.

We got a couple of requirements in class that must be used in this smart student home. These were:

* We have to have a digital key to unlock the door, using RFID
* We have to use an LCD screen for a menu to control everything
* We have to be able to control the lighting
* We have to be able to control a fan
* We have to connect a smoke detector to the system

For our demo, we want to show a cardboard model of the smart student home with the sensors and the components inside. This way we can easily show how every component is supposed to work. We will also make a 3D model of this smart student home in SketchUp so that we have a better idea of what the final cardboard model should look like.

**Scenario**

A new student walks into the student hotel and asks the management for a room. They give the student an RFID card and keychain.

The student walks into the room and uses the card to open it.

As soon as the student walks into the room the lights turn on.

It is rather hot in the room, so the student turns on the fan using the app from his phone that management told him about.

The student also thinks it’s a little dark inside, so he decides to open the curtains using the phone app.

The student checks the app a little more and he finds out he can control the colour of the lights as well, so he turns them to his favourite colour, purple.

The next evening, he tries to cook a little but he decided to watch some tv and totally forgot about the cooking food, and all of a sudden a smoke alarm sounds because the smoke detector detected something was burning.

# Deliverables

Mandatory:

|  |  |
| --- | --- |
| **Name** | **Due date** |
| Digital key (RFID pass) | Sat 21th Dec |
| LCD menu | Sat 21th Dec |
| Mood lighting | Sat 14th Dec |
| Fan | Sat 14th Dec |
| Smoke detector | Sat 14th Dec |
| c# application | Sunday 5th January |

Extra’s

|  |  |
| --- | --- |
| **Name** | **Status in git** |
| Mobile key pass | Status updated in git |
| Full LCD light control | Status updated in git |
| Automatic curtains | Status updated in git |
| Cardboard box room example | Week 18 |

## Timeline



# Communication

Communication within the team will happen over WhatsApp and during meetings at school. Communications will happen with the customer during sprint demos and we will make appointments for meetings if it is needed.

# Risk analysis

|  |  |  |
| --- | --- | --- |
| 4. Missing a deadline and not doing anything about it and just continue how we were. | 7. When presenting or showing what we have done, the Arduino’s decided to stop working. | 9. A group member does not come back from holiday and gets stuck in their country |
| 2. A team member is not motivated to do any work. | 5. A team member does not show up to multiple scrum meetings or does not show up to school and does not communicate with the group | 8. When presenting our code does not work or we don’t have access to our code in order to present. |
| 1. A group member gets sick and does not show up to school but is still available online. | 3. There is a disagreement within the group about certain topics. | 6. A computer dies, and we lose temporary code. |

In the above table, the risks that the group will encounter are listed. The risks go from low risk (green) to worst-case(red) and in between yellow as the middle tier.

# Configuration management

The FHICT git lab will be used in order to manage our code and our documents. The group members will push their code to this git and then the rest will pull. We are also using google drive, to make documents together and edit them in real-time. After the document is finished in drive it will be uploaded to git in its own folder.

We have decided to make some ground rules regarding this code. The code we use must have as many methods as needed, in order to have a clean, readable and usable code. We must use the same naming guidelines and the standard coding guidelines.

# List of References

* PDF file from Fontys regarding the Technology Advance Project
* Excel timeline sheet