Ellie

The living building

Brainstorm ideas

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# Version history

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# Project scope

Ellie is a building with a personality, it interacts with its surroundings and the person in the building using different actors.

# Introduction

For the start of the Ellie project we have had a brainstorm session where we taught about how we could give form to Ellie and how we could express emotions with a computer and other actuators. The findings and ideas that where generated from this session are described in the document

# Ellie in 2016

The Ellie project has been done once earlier in 2016 where students had made various setups where users could interact with light. There was for example a led matrix which reacted to sound volume or an AI could recognise human emotion to which a light bulb turned some colour.

But there was one thing we taught was missing to the project: The identity. The essence of this project is to give a building an identity and personality and we taught the previous project was lacking this cohesion. Another thing we taught could be better also is in the description of the original project, a building with an identity. In the project there was one hallway with lights and a setup which makes it not feel as a building with an identity but rather a hallway with an identity.

# Our thinking process

We began thinking about the concept of personality and identity and came to the conclusion that it was based on how someone or something interacts with one and another. so based on this principle we went further. How can we make it interact with someone else and how could these interaction take shape. We came with multiple types or interactions based on the human senses:

* Sight: screens and light
* Hearing: sounds
* Feeling: heat or cold

The second thing we taught of was that when you want interaction with someone, it is import to recognise who it is and what is emotions are. Based on the person and the emotions this person has Ellie can behave differently.

Based on this idea of different behaviour with different emotion we went ahead and taught about how we could interact with this emotion. We could for example change the ambient light to a colour better suitable for a specific emotion or just the opposite to achieve a better mood for the person. We also could use light matrices to achieve more complex shapes or to make the user actually interact with Ellie.

Third we taught about the issue described earlier with the hallway that had the personality instead of the building. We aim to add small interactions all around the building. For example when you come in, Ellie greets you, when you walk across the room you will be followed by a light strip or in different places there are lights or light matrices with which the user can interact with. This way Ellie is present all around the building which helps with the idea of a building with a personality.

Lastly we taught about how we could engage people with Ellie. We taught about that humans tend to personalize objects and things. With this in mind we came to the idea to give Ellie a face to make it easier to see Ellie as a human and to engage people with Ellie. And to strengthen this idea of personification every time someone enters of leaves the building Ellie greets them with an emotion based message.

# Revision

After we spoke with Eric about this plan we got a few remarks and advisements. So we went back to the drawing board.

Firstly Eric made us aware of the face that facial recognition brought along far more complex things to think about. For example we had to think about how we would gain those faces to recognise and if people where actually going to agree with their face being used. So Eric told us that there are so many more aspects to a human than only the face. We could for instance recognise the colour of someone’s clothes, or how close someone is standing relative to the sensor. With that idea we went thinking again and how we could engage someone with it. We came to the conclusion that we could say something based on one of those properties. But that would get annoying really fast. But we really wanted to let the person know that he has been recognised by Ellie. So based on some property of the person we Ellie will show some sort of colour or other visual interaction.

Eric also pointed out that we had to stop thinking in screens. Because with screens you would be very limited with the things you could so, and it is not much innovating or creative. He also gave some examples like Hall-9000. With this inspiration we went thinking again. What could shape could Ellie be and how are we going to express feelings trough that shape. We found a few creative ideas.

The first idea is to make it a cloud. With a cloud you can do many things to express emotion based on weather. So when the Ellie is mad, the cloud thunderstorms. Or when Ellie is happy the cloud will symbolize a sun or good weather. We also can enlarge or shrink the cloud based on emotion, for example when someone comes way to close the cloud can shrink and turn red to indicate discomfort.

Second we were very inspired by another example Eric showed us. It was some sort of living Pixar lamp which could move and express emotions based on light. We really liked this idea but where not interested in developing a whole mechanical robot arm. So we want to build a light which can only look around. So it can move in two dimensions. This drastically simplifies things.

And lastly we came to the idea of a living blob. This blob can change colour to indicate emotion or state. It can grow and shrink based on discomfort or courage and it can move faster or slower based on excitement for example. This blob then can be projected to the data wall or it can be in a hologram

# Second revision

After our first revision we presented our new ideas to eric, he was critical again what was good for the progress. Eric also gave us the advice to think wider. With every idea that comes up we should work out at least five versions in order to cover for unexpected setbacks like public safety. But we also where quite far into the semester and we should have some sort of an idea by now. So the three ideas we came up with last time where good enough. We only had to cross the lines between them and make more elaborations. We came up with the following which we are going to prototype.

1. A cloud or blob will be projected on a wall and the way you touch with it will influence the its behaviour
2. The influence of touch will be dependant of the amount of people. The more people the more stiff the material will be and vice versa.
3. Getting an estimate about crowdedness around the room and projecting that in the cloud or blob (this can be in the form of a heatmap which can symbolise friction within the cloud particles).
4. How more crowded how bigger the cloud will get and how more extreme the emotions will be.
5. The little Pixar lamp will become touch sensitive and the way you touch him will influence its mood and behaviour
6. If one lamp is handled poorly, the other lamps will look over to that poorly handled lamp and will get angry
7. When a place is noisy, the lamp will get angry or annoyed this can also be reflected to the cloud or blob that is projected on the wall

# Final words

We have taught about how we could give Ellie personality and how we could interact with the user and let the user engage with Ellie. We came to the conclusion this can be achieved by making micro interactions with the users all across the building, also we want to give Ellie an face to make users recognise Ellie and make it less abstract.