

Conversation Summarization

As the technology is getting advanced, the things in our world are getting advanced, too. Like other things, houses are getting advanced. In this advancement procedure, some scientists were looking for a world which everything in it have information processing ability. House and buildings are the places where the humans spend a lot of time during a day. So, it was so important for scientists to have a home or building which could process the information that belongs to objects and people who live or work in the home or the building and provide some services for them to have a better time in their homes and buildings.

So, scientists try to bind ability to process information to homes and buildings. Today, we have smart homes and the homes are getting smarter every day. They are getting smarter to make their residence more satisfied of living in them and make their life easier.

So, what's the problem?

The current people who are living in smart houses are complained of living in their houses. Some of the reasons for this are listed below:

- Lack of control on their houses.
- Feeling that the house is doing something without they have been informed.
- Over Automation
- Wrong Automation

So, what is the origin of the problem?

The problem is that when the person is living in home, he/she is not aware of what is going in home? And why some automation is happening. So they may think that the home is not in their control. If the smart home does wrong tasks, the person could not trust to their smart homes.

So, what's the general solution to the problem?

We are looking for User Interfaces, Information Delivery, Visualization, Animation and etc. which bring more transparency for the person of how he/she can control smart home and what is going on in it. We want to bring the transparency which we are looking for by creating a 3d visualization that shows the "Behaviors" and "Activities" of the smart home. By the 3d visualization, we mean the 3d game that we are developing.

In the 3d visualization which we are going to develop, we want to create a game which solves the mentioned problems by showing what is going on in home, which devices were involved in each event, what have triggered the event, if the person wants to know. So, he/she will feel more comfort with living in the smart home.

Additionally, we must provide some ways for the player to define some rules for the smart home behavior or modify the rules that is governed the smart home.

How will we remove the origin of the problem by the game?

We are going to solve the problem in our game by providing following services within a device in game for the player:

- Show the history of actions for each device.
- Animate before and after effects of actions.
- Visualize the group of devices that were involved in a single automation.
- Allow the player to define some rules which governs the smart home interaction with different events. Additionally, we will allow the players to modify current rules.

We show these to the player, to:

- Extend the understanding of the player from automated action which is happening in the smart home.
- To explain why an automated action is happening to the player.

What are we going to present in our paper?

In this paper, we will not talk about an environment which is controllable for the player. This is an assumption. It means that we must have a smart home that player can interact with objects in it, do some modifications as needed and the home must be smart which means that it can act against some conditions which is previously is defined in the game. Also the players are allowed to define their favorite rules for smart homes. These are assumptions and we must have them at first. Even In our paper we are not going to speak about designing a GUI.

Note!
The main goal of the game is to teach the player "What is a Smart Home!"

We are going to develop a mechanism to present how we can show the automations that are happening in player's home, Show why they have been happened, what devices was involved in them and so on. By doing this the players of smart home will feel more comfort of living in their smart homes.

Additional Tools for the Software

Furthermore, we will provide some more control mechanisms for the player, such as:

- Undo
- Redo
- Stop an ongoing Automation
- Block a device from being involved in the same automation

Solutions

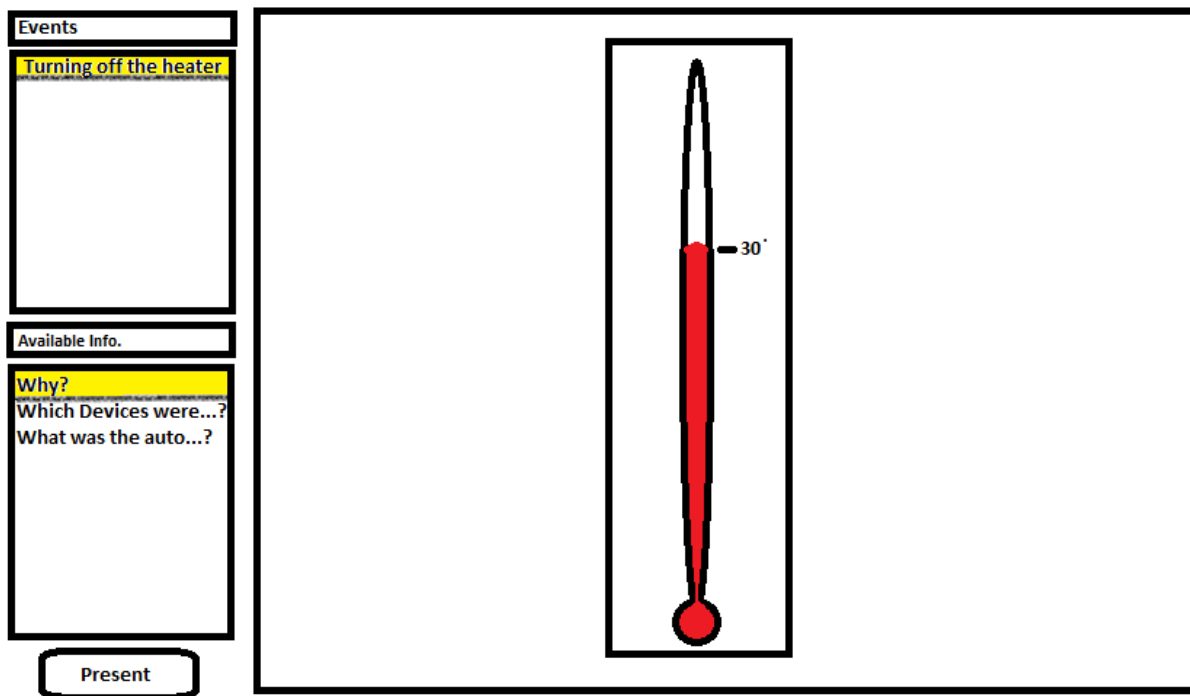
Solution 1: Simplest Solution to the problem

To solve the above mentioned problem, we will define a mechanism for player to see the activities that the smart home has done in a list through a device like a smart home controller ,his/her

mobile phone, or TV. We can show the history of the activities that the home has done through player's device and he/she can choose the activity (Turning off the heater) and its related event (Why it has been turned off, which devices were involved, what triggers the activity and etc.) to see his/her desired report of what is happening in the home.

The device which is used to show the reports to the player is not so important. What is important is that how to show the mentioned things to the player, to understand what is happening to his/her smart home through a game to feel more comfort with his/her smart home.

The most simple way to solve the problem is to design some cut-scenes (a real-time cinematic which tracks the events that has been happened in the smart home to show precisely what is happening in the smart home) for each behavior of the environment. For example, when the player wants to know why the heater has been turned off, we can show the thermometer which shows that the temperature of the home is increasing. Showing the inside temperature is increasing is done through a cut scene.



This is the simplest solution which we can present for the problem but this solution is not able to provide the user some way to define his/her own rules. Because the cut-scenes must be designed previously and by modifications in current rules or define new rules, there will be no cut-scenes to present to the player.

Solution 2: Using Camera Movement Instead of Cut-Scenes

--- I am thinking about it! ---