

# Human-Computer Interaction Interactive Design Project

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## 1. Scenario – December,05 2019.



7:00, the alarm clock rings for Robert, 39 years old. Robert lives in a "smart" village (SV), able to communicate with Robert by means of words, tactile vibrations or screens placed in certain places of the village. The "SV" has different sensors and effectors positioned to detect where Robert is and what to do but also to measure temperature, pressure, humidity, etc.

Robert wants to know if it will rain during the day. He asks via his "SV" watch to communicate to him every hour the weather forecast of the village.

Then, he wants to visualize the road traffic to know if he can go to buy seeds to the neighboring city. He sees that the road is completely saturated (normal, it is 8:00 am...). He then asks the "SV" to warn him when the traffic will be more fluid.

Nevertheless, one must think of working. Robert decides to visualize all the sensors of the "SV" since last night on his big screen in his bedroom.

He finds a problem with the temperature of the power plant. He identifies himself with his professional card to check if the sensor is damaged or if it is a problem. Phew! One of the sensors seems to be defective ... It will think to replace it!

Eventually, Robert thinks he can take a little time for a coffee and tells the "SV" that it must be ready by 7:20 am (a tight "espresso", what else?).

## 2. Case study

From the proposed scenario, we want to design and realize the different screens and interactions of our connected watch (in the watch or outside) to manage one or more situations illustrated above.

## 3. Schedule

This project should be carried out during sessions in groups of 4 or 5 people. The sessions will be organized as follows:

### **Session 1 & 2: Perform a first design cycle (2 x 2h)**

1. Analyze the problem to extract the **functional and non-functional** requirements of the application.
2. **Explore** the design space to find (innovative) ideas about the overall structure of the application. Realize the design scenarios.
3. Quickly **prototype** the application with low-fidelity material (paper, storyboard, video, etc.)

### **Session 3 & 4: Propose a high-fi prototype (2 x 4h + (more if you have time))**

Implement your design proposal to make it tangible and testable based on the usage scenario.

## 4. Work expected

You will have to postpone at the end of the period:

- Your **low-fidelity prototype(s)** in the form of storyboards, models, photos, screenshots, stop-motion, movie, ...
- The **source code** of your Processing, Arduino and / or Raspberry developments (zip archive)
- An **illustration** (in the form of photos, movie, ...) of your **high-fidelity prototype** by focusing on the unfolding of your usage scenario

## 5. some (potential) useful links

1. **JSON + Processing:** <https://www.processing.org/reference/JSONObject.html>
2. **RSS feed + Processing:** <http://btk.tillnagel.com/tutorials/rss-feeds-processing.html#xmlInProcessing>
3. **Speech recognition + Processing:** <http://stt.getflourish.com/>
4. **TTS + Processing:** <http://www.local-guru.net/blog/pages/ttslib>
5. **QRCode generator + Processing:** <https://code.google.com/p/zxing>