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**Village Doc
Installation**



**Topic: Animation in
real time**

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Main References:

2015-2016 UQAM

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[Village Doc presentation](#)

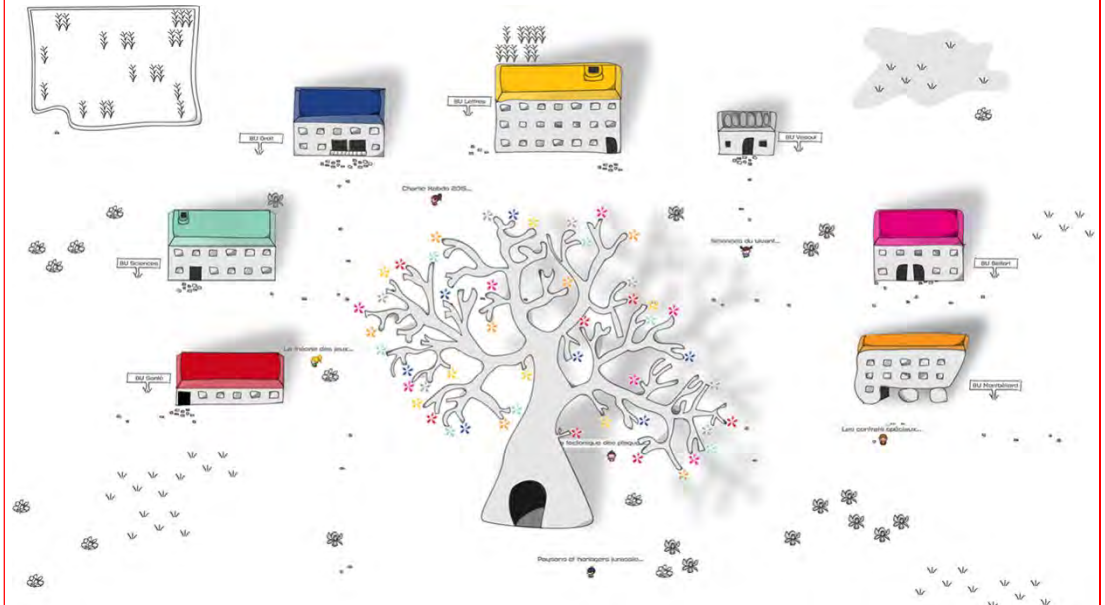
[on Behance](#)

Abstract:

'Village Doc' is a generative work of art, built from the real-time data of document loans made in the libraries of the 'Université de Franche-Comté'. This work is both vision and sound related, with curiosity as the drive of its poetical universe.

A town square. In its center, the tree of knowledge. Around it, the buildings of all the libraries included in the network. A soft and meaningful tune puts the viewer in a contemplative mood. When a loan goes through in one of the libraries, in real-time, a small character emerges from the building where the loan took place and moves on the stage. His or her real first name is displayed briefly above him, along with the title of the borrowed document. As the libraries function, the landscape gets livelier. Gradually, the tree grows flowers of many colors. The crowd of readers circulates and exchanges, goes from throng to lonesome individual, in a never-ending choreography. The sounds are also enhanced.

Viewer is invited to first watch, and then understand, what is happening on the screen. The mind travels between fiction (the town) and reality (the libraries and their activity). The viewer will grasp the readers community in all its diversity : variety of first names and abundance of knowledge. Real-time experience will work its magic and generate in each viewers unexpected sensations and feelings, bound to change how he or she perceives libraries and the acquisition of knowledge in general.



Village Doc screen

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Village Doc, Generative Artwork built from Real-Time Data

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Abstract

'Village Doc' is a generative work of art, built from the real-time data of document loans made in the libraries of the 'Université de Franche-Comté'. This work is both vision and sound related, with curiosity as the drive of its poetical universe.

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Viewer is invited to first watch, and then understand, what is happening on the screen. The mind travels between fiction (the town) and reality (the libraries and their activity). The viewer grasps the readers community in all its diversity : variety of first names and abundance of knowledge through real-time experience.

– 1. The data flow

In 2009, Pierre Berger wrote that a generative artist must first and foremost program what is uncertain. That uncertainty can be obtained through pseudorandomness algorithms, through the use of external resources or through a variety of mathematical calculations. Using a data flow is one way of exploiting an unpredictable source. Most of the time, artists use data flow coming from the web. In this project, the flow of data is very specific, and not public, being the flow of transactions (withdrawals and returns) in a network of university libraries. Every day, hundreds of readers borrow and return books in those libraries. As they practice that activity using their name, it is an individual process. But as all these individual transactions are combined in this data flow, a global view of these exchanges becomes possible, and allows for the living community of readers to emerge.

– 2. Working in real-time

Handling data flow in real time means inscribing the work into time and into reality, it means interpreting reality as it forms itself. From the viewer's perspective, it may generate questions along two lines :

- from the human towards the flow, real actions performed by real people triggers the data flow,
- from the flow towards the human, the combination of the data into a flow creates, through metonymy, a human community which can be seen on the screen. This community will be reinterpreted, fictionalized.

The viewer can therefore apprehend the human interactions behind the system. His or her own actions can be interpreted by the work. The system is not interactive as the interaction must exist in reality itself. This approach of rooting the work into real time can be compared to a performing arts approach : every moment is unique and will not happen again in exactly the same way.

– 3. Overall structure

The program is using :

- HTML for display
- PHP files and AJAX technique to send SQL requests every two seconds to Oracle database,
- Phaser javascript game framework

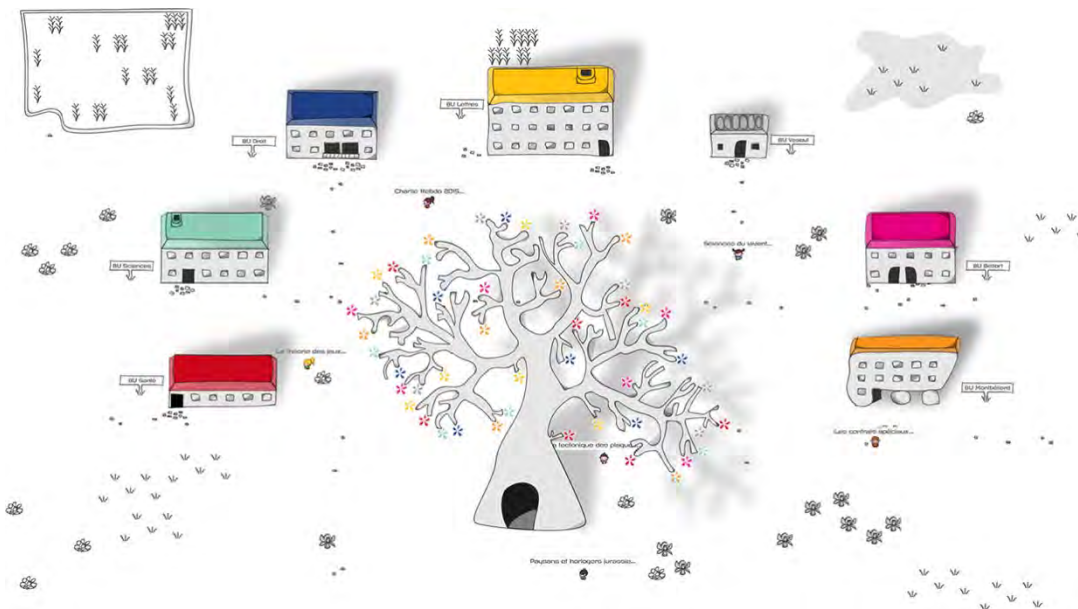


Figure 1. Village Doc screen.

3.1 Graphic elements

I took my inspiration from the Legend of Zelda games, produced by Nintendo since 1986. My goal was to quickly immerse the viewer in a fictional and fun world. In this world, readers are shown as

children, beings that never stop learning. I used a strong contrast between black & white and color. I created the various elements, with the exception of the characters sprite sheets, made by KG Spriter, which are copyright-free.

3.2 Animation programming

Sprite sheets were used for basic elements animation (characters, flowers, magic...).

- Character travels

The goal was to give the impression of a swarm but also to favor colliding between characters. I chose to use the moving pattern from the game Zelda : characters move in 4 directions (right, left, up, down). Lines of circulation are therefore either horizontal or vertical. Characters exit the stage through its rims or they disappear inside the tree. Some elements of the landscape work as obstacles. When a character collides with them, he finds himself redirected at random.

The tree is always placed at the forefront. Characters move behind it and its colorful flowers, which grow with every loan. This gives some depth to the scene. The gateway into the tree works as a magnet : every character entering the area under the door is redirected towards it and disappears inside.

- Colliding between characters

When two characters meet (which can be detected through their coordinates on the stage), they exchange words (a whispering sound is triggered, chosen at random between two possible sounds) and a magical aura shines around them (a magic dust animation in the form of a sprite sheet).

3.3 Sound environment

The use of sound brings a lot of depth to what can be perceived of the device, in terms of both time and space perception. This is what Michel Chion calls the added value of sound : “the informative and expressive value with which a sound imbues a given image can lead to thinking (...) that this expression “naturally” comes from what we can see”.

I chose to use only sounds that I had recorded myself, although I reworked them subsequently. I had to record the sounds, possibly re-synthesize them, apply filters, mix and then compress them. I composed the music from a few arpeggios and guitar chords. I blended brute sounds with their counterparts reworked with a granular synthesis application. I then produced the sounds that were destined to be programmed (forest background, door sounds, footsteps, whispers, tree sounds).

Sound spatialization received particular attention :

- When a character walks across town, his footsteps go from one hear to the other, according to how he moves on screen. This spatialization is managed through API Web Audio, as a simple panoramic.

- For the doors, which are static, the sounds were spatialized using another method : SPAT, IRCAM's spatializer. That tool allows for the control of source positioning in a 3D environment and is ideal for a headphone experience. Its interface renders possible the positioning of one or several sounds in relation to a centrally placed listener (angle, distance).

– 4. Multimedia metaphor

Village Doc is based on a metaphor which connects the libraries network and a town : said network becomes the town, reading becomes walking, knowledge becomes a tree... This metaphor was developed in every detail of the conception, and gives the work its coherency. It unfolds jointly with every media used, whether discreet or continuous : static image, animated image, punctual sounds, looped sounds.

– 5. Conclusion

We live in a world of profuse data, but sometimes, we don't know what to do with that huge amount of information, apart from financial ventures and jeopardizing individual freedom.

With Village Doc, I wanted to use these data in a benevolent way to create a new type of metaphor. I believe in its efficiency, formidable in my point of view, as in an infinite loop, every instant is an opportunity for reality to generate fiction and for fiction to induce the viewer to reconsider what he thinks of reality.

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