Data Visualization with d3js

TD - The Crime Scene

In the perfect neighborhood, a terrible thing has happened. Jean-Claude, school teacher, has been murdered. The police have collected the statements of everyone present at the crime scene. However, now they need your help to identify the murderer. For that, you were asked to present the collected information through a visualization technique, where they can see and interact with the data to form hypotheses and find the murderer.

You have received a dataset (`data.json`) containing three lists:

- `persons`: the people involved in the crime scene, characterized by age, height (*taille*), profession (*métier*), quality of vision (*vision*), gun license (*permisArme*), strength of their alibi (*alibi*), and their location in the scene (*positions x and y*)

- `links`: the social links between people defined by a relationship such as work (travail), neighbor (voisin), etc

- `family-links`: the family links between people defined by a relationship such as partner (conjoint), child (enfant) or ex-partner (ex).

To help you with the task, you have been provided with support files to begin the visualization:

- `server.js`: a simple working server. This is necessary if you want to load local files into your visualizations.

- `map.jpeg`: a picture of the neighborhood where the crime happened

- `style.css`: a CSS file containing classes and ids to style the HTML elements

- `index.html`: the initial content of the visualization

Before you start, make sure you have the following installed in your computer:

- Visual Studio Code (Download at `https://code.visualstudio.com/download`) or equivalent

- nodejs (Download at `https://nodejs.org/en/download/`)

Open the Visual Studio Code:

- Open the folder TP_files (File → Open Folder)

- Open a new terminal in the editor (Terminal → New terminal)

- Install the required packages for the server using the command npm install

- Run the server using the command npm start

- Now you can view the page at `http://localhost:3000`

Once the visualization is up and running, completing it by performing the following tasks:

- Replace the current data (the variable `persons`) with the data from `data.json`

- Create scales to help you correctly position the people around the scene

- Modify the nodes in order to represent different characteristics of people (vision, age, profession, etc). You can use different colors, shapes, sizes, etc. Be creative! Try to represent at least 2 aspects of the data through 2 dimensions of the chosen geometric object (e.g. circle, rect, etc).

- Draw lines between the nodes to represent the connections between people.

- Use a visual variable to represent the type of connection (social or family)

- Include interaction to your visualization, e.g. by hovering a node, highlight the other nodes which with the person has a connection.

- Include filters to allow the user to focus on a certain group of people, e.g. adults aged between 30 and 50 years old that have a gun license.

Hint1: check the usage of the HTML tag `select` (`https://www.w3schools.com/tags/tag_select.asp`)

Hint2: check the examples shown in class about using the `join` function to update the visualization upon changing the data