

Exploring Treemaps

For Summarizing and Navigating Image Galleries

github.com/john-guerra/photoTreemap

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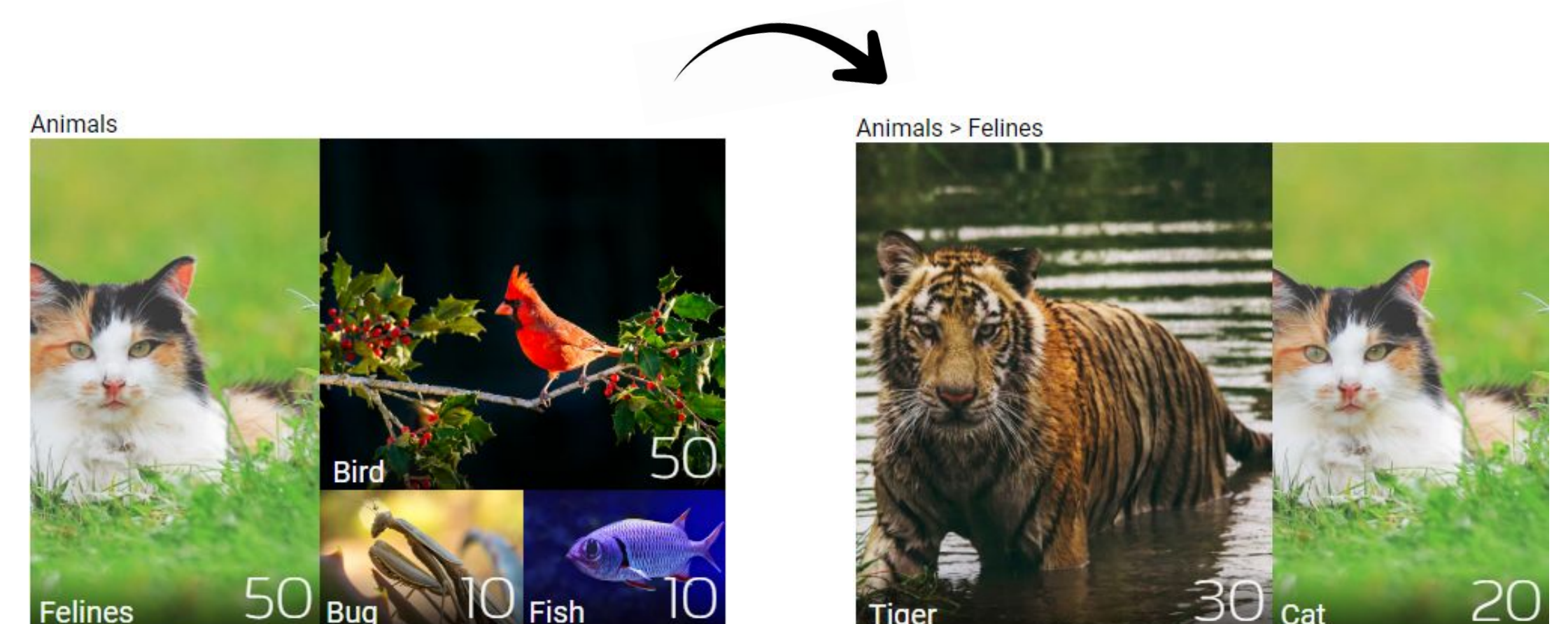
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Description

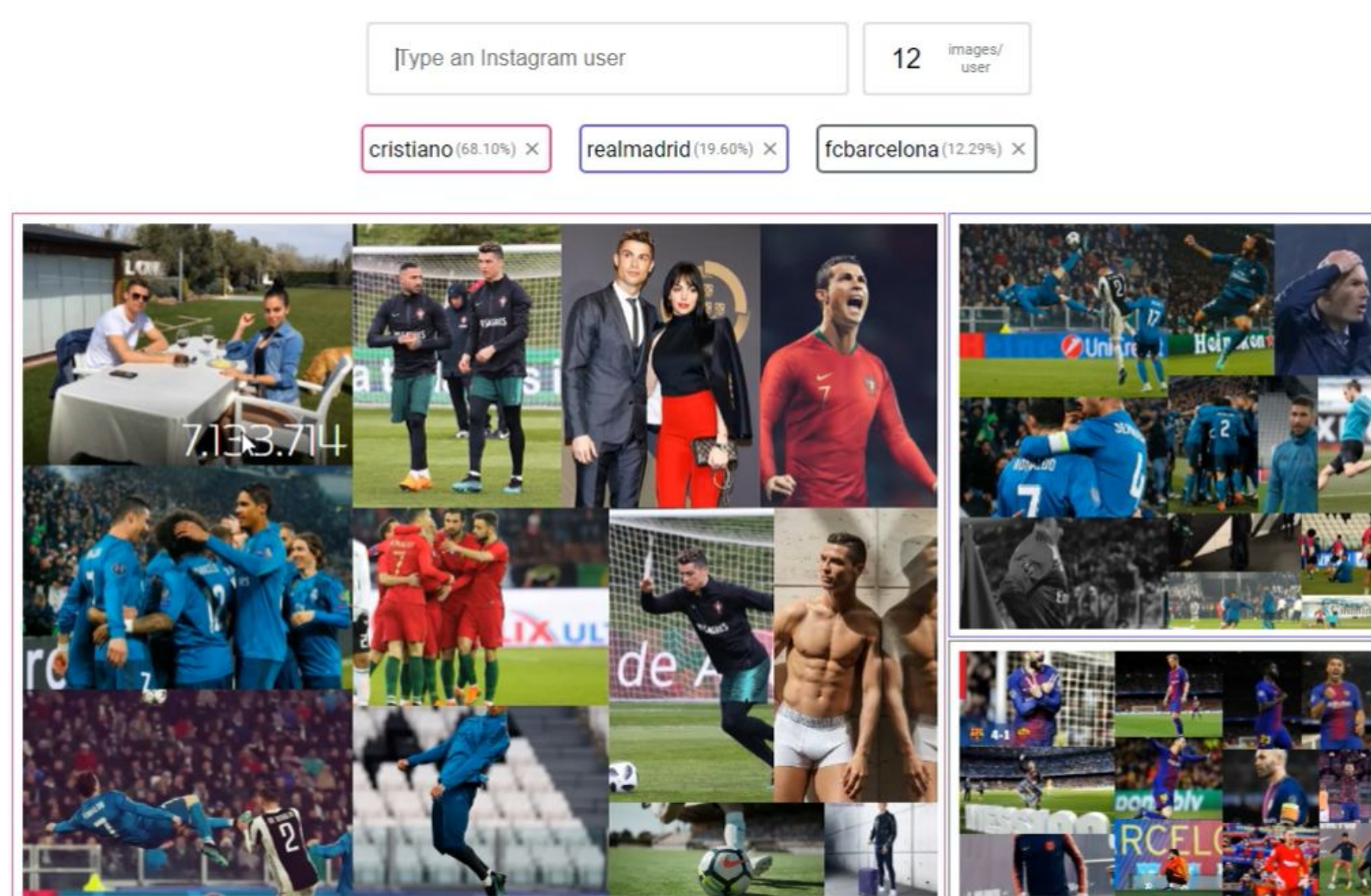
Treemaps are an useful and unexplored tool to navigate and visualize image galleries. Because of this, the purpose of this project is to **document, test and improve** PhotoTreeMap, a tool to display image collections based on the images metadata. This tool has been developed as a JavaScript library by Dr. John Guerra and is able to organize groups of images based on its metadata.



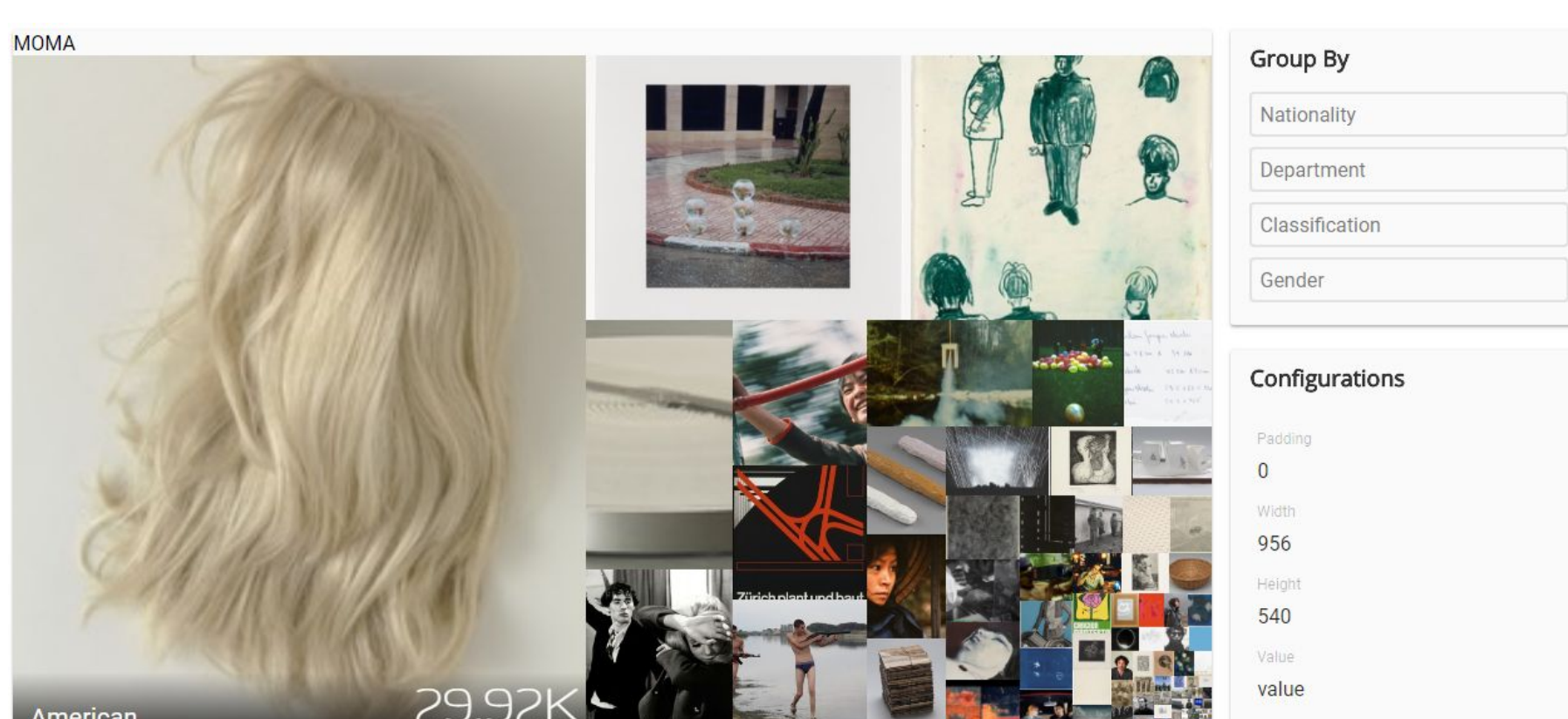
Application Case 1: Basic Example, a tool which create a PhotoTreeMap with minimum configuration and with a small hierarchy.

Problem

Visualize and navigate big image collections with rich metadata is not easy. The majority of systems used to navigate and summarize images repositories use a basic approach of displaying equally-sized thumbnails in a bi-dimensional grid. However, this widely used solution does not scale well and does not give the user a meaningful and intuitive interaction.



Application Case 2: Instagram Trends, a tool which use a PhotoTreeMap to compare the popularity of Instagram users.



Application Case 3: MOMA Navigator, a tool which use a PhotoTreeMap to navigate around the artworks of The Museum of Modern Art (MOMA) based on its characteristics

Solution

The proposed solution is a visualization library based on treemaps, which allows users to navigate through its image repositories in a straightforward way and give them richer context results using the images' metadata. In order to achieve this, usability tests, documentation and improvements will be done upon PhotoTreeMap.

Results

The investigation and development through the project allow us to deliver the following items:

- An open source documented JavaScript library.
- Three usage examples.
- A research paper that will be submitted to IEEE VIS.
- Usability tests.

Evaluation

In order to get feedback from users and understand the performance of the PhotoTreeMap, it was necessary to execute usability tests over the MOMA Navigator, one of the three developed examples. These usability tests allow us to validate the effectiveness of the PhotoTreeMap and to recognize some UI and UX improvements which need to be done.