

FoodDB: A Graph Visualization Interactive Tool

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The Database

This is a tool to visualize a database of 151 food recipes extracted from 'TheMealDB' database, which provides a free data source API for recipes online. The database is composed of 151 meals and 297 ingredients. Each meal belongs to one category (e.g., Breakfast, Beef) and one country.

The Layout

For our layout we chose an arrangement that takes advantage of the fact that our graph is bipartite. Hence, we decided to place all meals on the periphery of a rectangular shape, and all ingredients inside the rectangle formed by the meals. In addition, meals of the same category are placed next to each other and marked with the colour of the category on the background. Ingredients are positioned so that they are closer to the category of meals they belong most regularly. This way, we managed to get shorter edge lengths, when possible. Of course, most regularly used ingredients by meals of diverse categories had to be placed in the middle of the rectangle.

The Tool

For the implementation of the interactive tool we used the Cytoscape.js and jQuery frameworks along with other open-source tools and libraries. Moreover, we tried to include all useful information provided by TheMealDB API, so that the user can view a pop-up window with all information about the selected meal. This

includes its Category, Country, Ingredients, as well as the video of the recipe and a link to TheMealDB webpage for the selected meal. The tool is also extendable and adaptable to the size of TheMealDB database.

Graph View

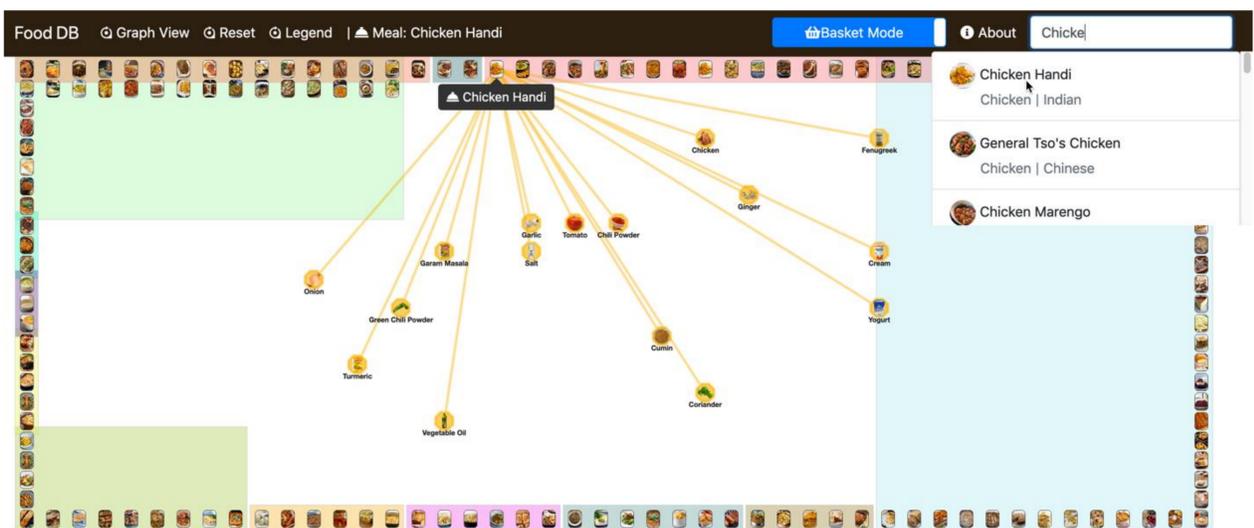
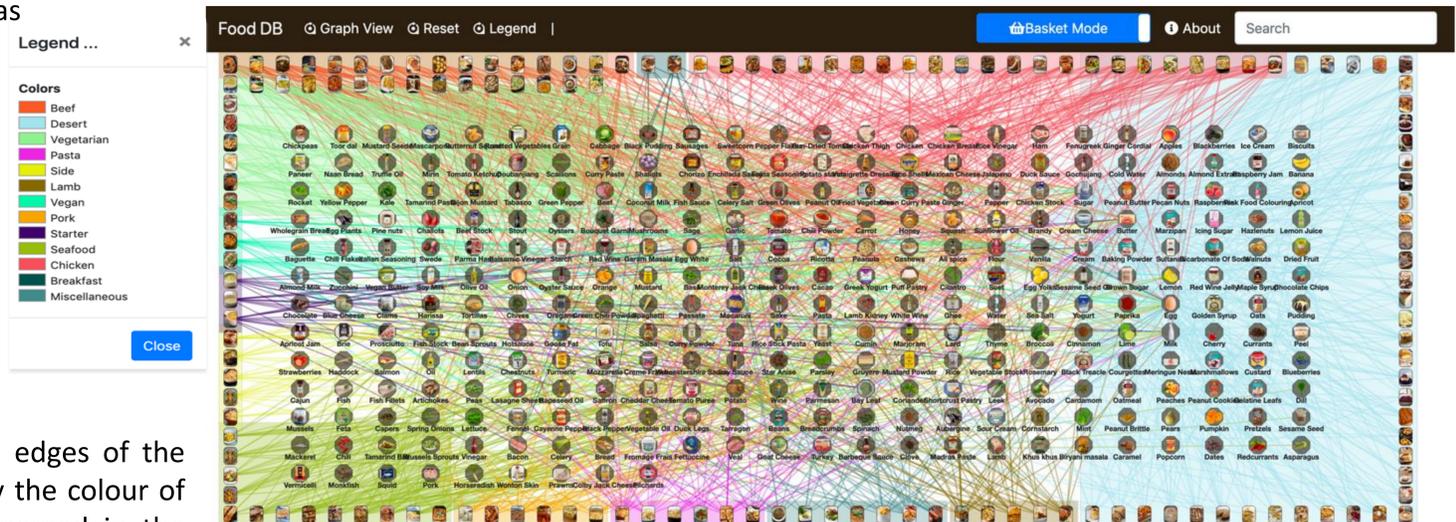
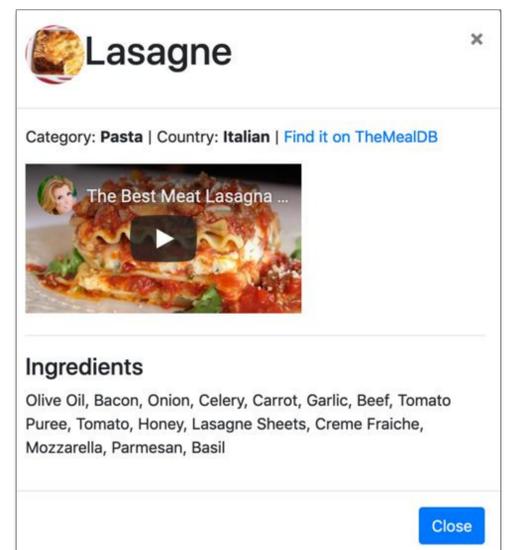
When loading the webpage, the icons of all nodes of the graph (both meals and ingredients) appear on the screen. The arrangement of icons is as described in the Layout section.

When the user clicks on 'Graph View', all edges of the graph are displayed. Edges are coloured by the colour of the respective category of the meal (as named in the Legend window). Hence, by looking at an ingredient it is easy to view in which categories of meals it belongs. In contrary to meals, ingredients can be moved by drag and drop mode, which makes the examination of the ingredient's links easier for the user. All nodes can be reset to their original positions by clicking on the 'Reset' button.

Moreover, in the Graph View we provide information for each selected element (i.e., Categories and Meals) on the top bar of the screen.

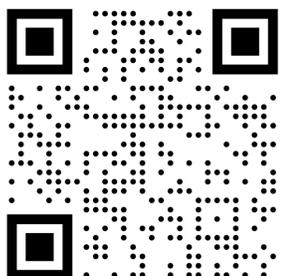
Basket Mode

In the Basket Mode the user can either search for a meal using the search box or click on a meal icon. In both cases, a subgraph with nodes the ingredients of the selected meal is displayed on the screen. This offers a clearer view, focusing only on the meal of interest.



World Mode

In the World Mode meals are categorized by country. The user can either search for a meal using the search box or can click on a country to see the available meals per category. In both cases the selected meal is displayed, along with its ingredients, as well as its connection to the category and the country it belongs.



<http://tiny.cc/gt2ac2>

Check it out! 