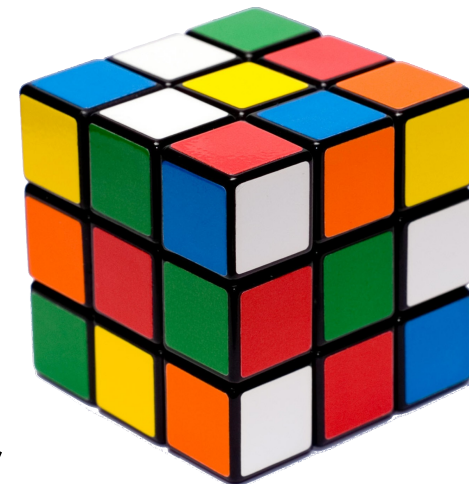




MojoFacets

So, you have data and browser?

Dobrica Pavlinušić

<http://blog.rot13.org>

HULK, Knjižnica Filozofskog fakulteta u Zagrebu

Slobodni Festival 4, Čakovec, 2. srpnja 2010.

Goal

Create a **faceted data browser**, using web browser as a client with **data stored** on **server** in perl's **memory**.

Allow data **modification** while keeping **changes** to for recovery or replication.

Modify data and generate **reports** using simple **perl snippets** (it's in memory!)

Overview

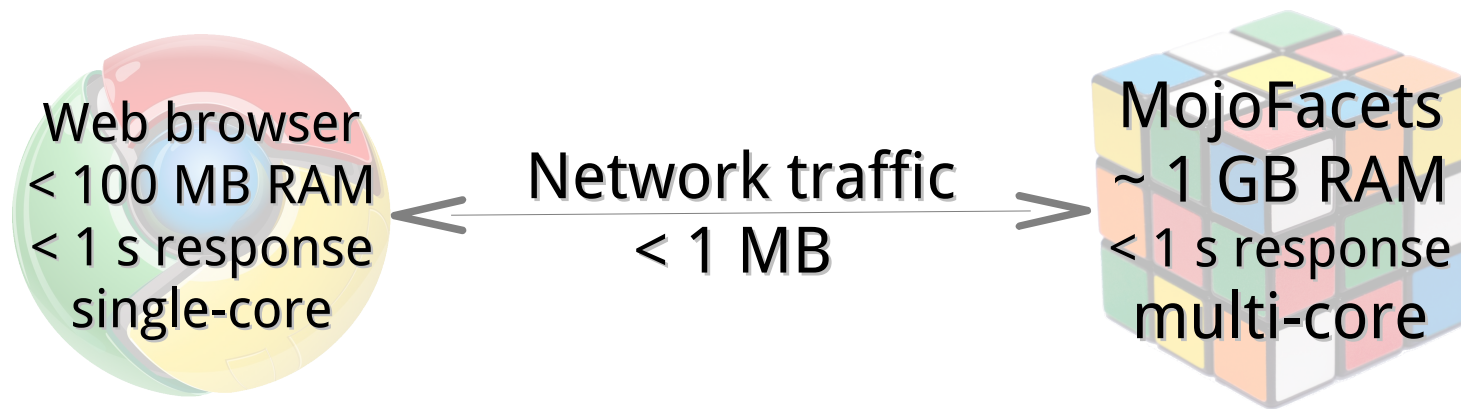
- Faceted browsing
- MojoFacets
 - Input formats
 - Faceted browsing, editing and plotting
 - Eval perl code over items or facets
- Google Chrome Development
 - Chrome Application
 - Speed Tracer

Facets?

A **faceted classification** system allows the assignment of **multiple classifications** to an object, enabling the classifications to be ordered in multiple ways, rather than in a single, pre-determined, taxonomic order.

SIMILE Exhibit Widget – in-browser
implementation for < 1000 items
<http://www.simile-widgets.org/>

Profile driven development



Assume modern browser (fast JavaScript, canvas),
but transfer minimum HTML to reduce memory
usage on device (Android) or CPU usage (netbook)



http://www.youtube.com/view_play_list?p=ED435109B7ABD426

MojoFacets

Web-based faceted browser with **server-side data in memory** for quick response

- Source data
 - JSON, CSV, html tables ...
- Server
 - Perl in-memory data with web server
 - Mojolicious, Devel::NYTProf
- Web application
 - jQuery UI (reorder columns)

Input formats

- JSON – Exhibit format with items
- TXT – pipe | delimited, multiline format
 - Plants for the Future
- CSV – cp1250 encoded
- Storable
 - Concatenated serialized perl objects
 - scripts/vmstat.pl – generate output

Server application

- Single user faceted browser
 - **No security, run on localhost!**
- Record all user **actions** and optionally replicate them to other **MASTER** instance
- Limit amount of HTML trasfered to browser
 - about:memory < **100 Mb usage!**
 - **MAX_FACETS**
- Edit on double click with **changes** log
- Holds all data in memory as array of hashes
- Analyzes data lazily (numeric, unique)

Filter values = facet

- Subset of all values for a column in dataset
- Can be applied across different datasets with the same column name
- Selection of values using regex in browser
- Graph counts using canvas (< MAX_FACETS)
- Export to text file
- Copy/paste to spreadsheet (white ;)
- Eval perl code to filter or create aggregates (\$value, \$count, \$checked, \$out)
- Multiple filters are combined and cached

Browsing and editing

- Show items as table or list
- Graph all values using **gnuplot** server-side (and export data as side-effect)
- Edit any cell on double click
 - Repeatable values delimited by ¶
 - Create **changes** which can be applied to different datasets or new versions
- Load code snippets based on visible columns
 - `$row -> $update` # map
 - `$out->{something}++` # collect



Development
using
Google
Chrome

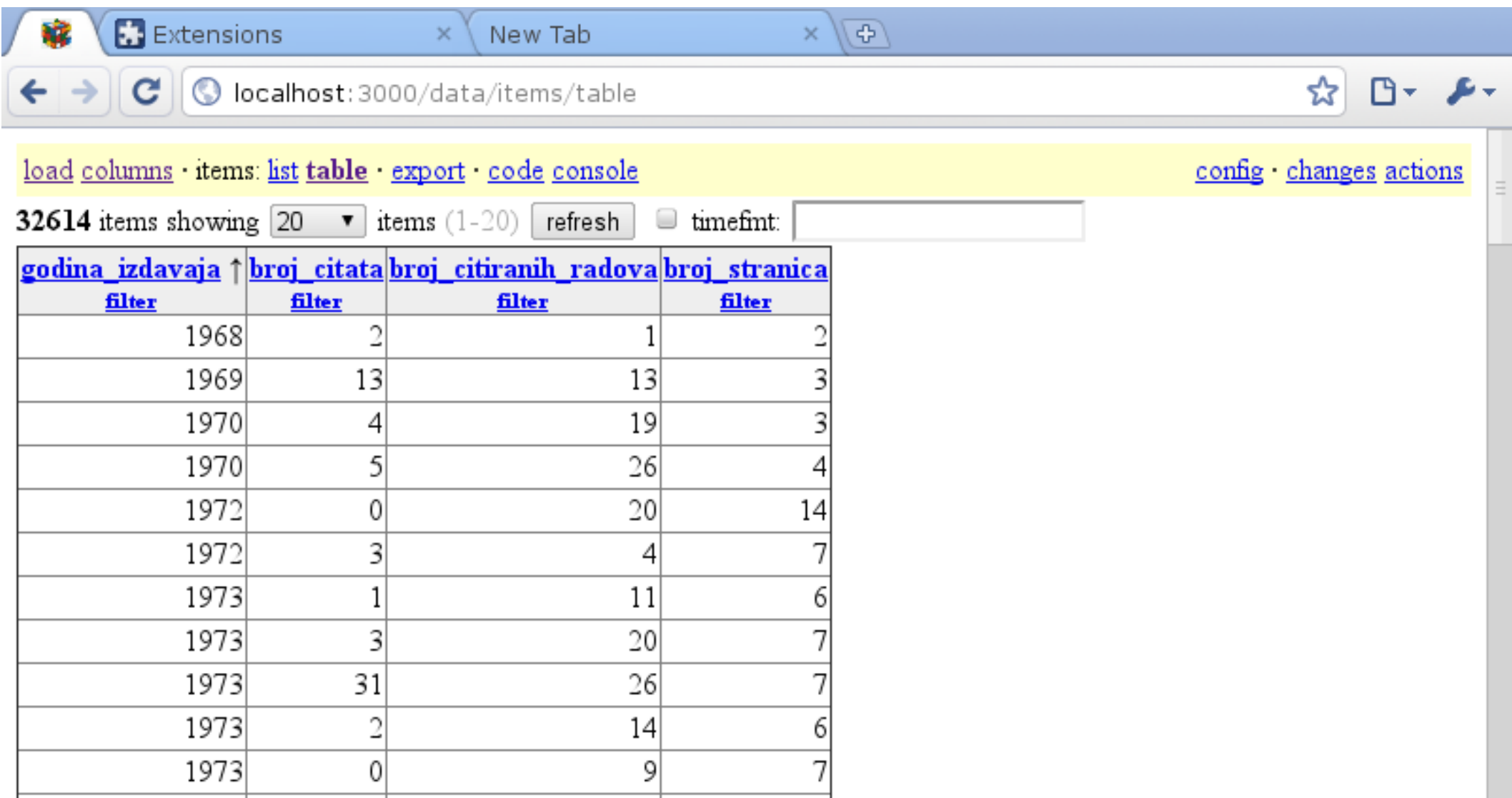
Google Chrome Application

```
$ google-chrome --enable-apps
```

```
$ cat chrome-app/manifest.json
```

```
{  
  "name": "Mojo Facets",  
  "version": "1",  
  "icons": { "24": "24.png", "128": "128.png" },  
  "launch": {  
    "web_url": "http://localhost:3000/"  
  },  
  "permissions": [],  
  "web_content": {  
    "enabled": true,  
    "origin": "http://localhost"  
  }  
}
```

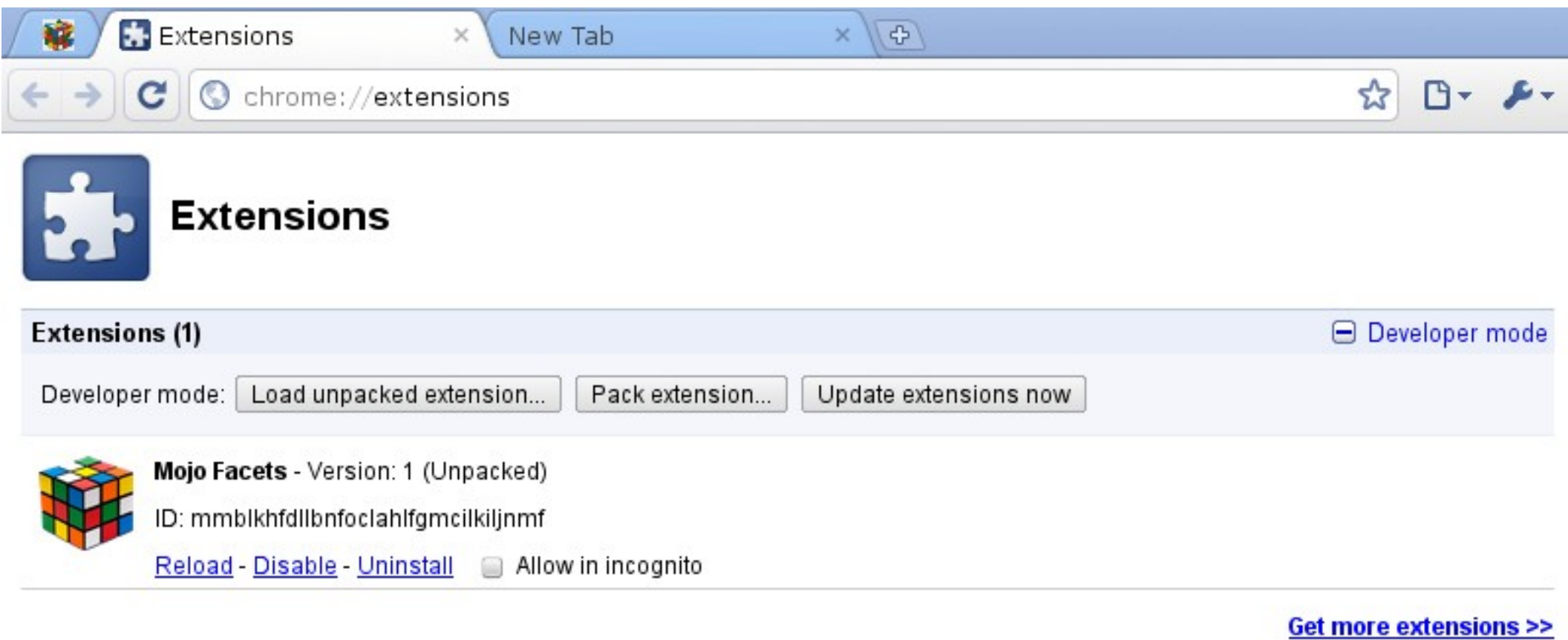
To get application tab...



The screenshot shows a web browser with two tabs: 'Extensions' and 'New Tab'. The address bar displays 'localhost:3000/data/items/table'. The page content includes a navigation bar with links: [load columns](#), [items](#), [list table](#), [export](#), [code console](#), [config](#), and [changes actions](#). Below the navigation bar, it states '32614 items showing' followed by a dropdown menu set to '20', the text 'items (1-20)', a 'refresh' button, and a 'timefint:' label with an input field. The main content is a table with four columns: 'godina_izdavaja', 'broj_citata', 'broj_citiranih_radova', and 'broj_stranica'. Each column has a 'filter' link. The table contains 12 rows of data.

godina_izdavaja ↑ filter	broj_citata filter	broj_citiranih_radova filter	broj_stranica filter
1968	2	1	2
1969	13	13	3
1970	4	19	3
1970	5	26	4
1972	0	20	14
1972	3	4	7
1973	1	11	6
1973	3	20	7
1973	31	26	7
1973	2	14	6
1973	0	9	7

...load unpacked extension...



The screenshot shows the Chrome browser's 'chrome://extensions' page. The address bar displays 'chrome://extensions'. The page title is 'Extensions'. Below the title, there is a section for 'Extensions (1)' with a 'Developer mode' toggle. In the 'Developer mode' section, there are three buttons: 'Load unpacked extension...', 'Pack extension...', and 'Update extensions now'. Below these buttons, a single extension is listed: 'Mojo Facets - Version: 1 (Unpacked)'. The extension's ID is 'mmbikhfdllbnfoclahlfgmcilkiljnmf'. Below the ID, there are links for 'Reload', 'Disable', and 'Uninstall', followed by a checkbox labeled 'Allow in incognito'. At the bottom right, there is a link that says 'Get more extensions >>'.

Extensions

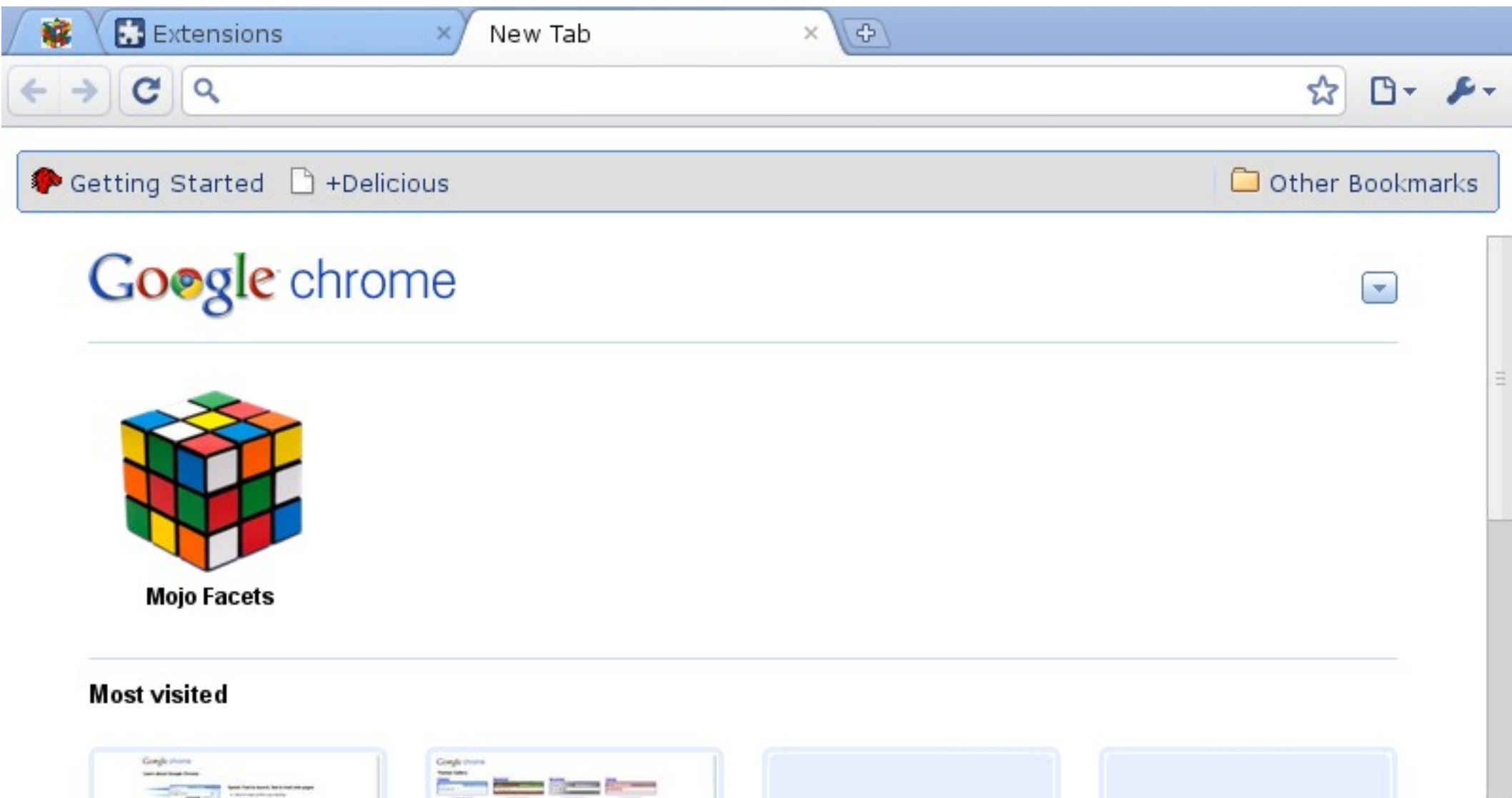
Extensions (1) Developer mode

Developer mode: Load unpacked extension... Pack extension... Update extensions now

 **Mojo Facets** - Version: 1 (Unpacked)
ID: mmbikhfdllbnfoclahlfgmcilkiljnmf
[Reload](#) - [Disable](#) - [Uninstall](#) ☐ Allow in incognito

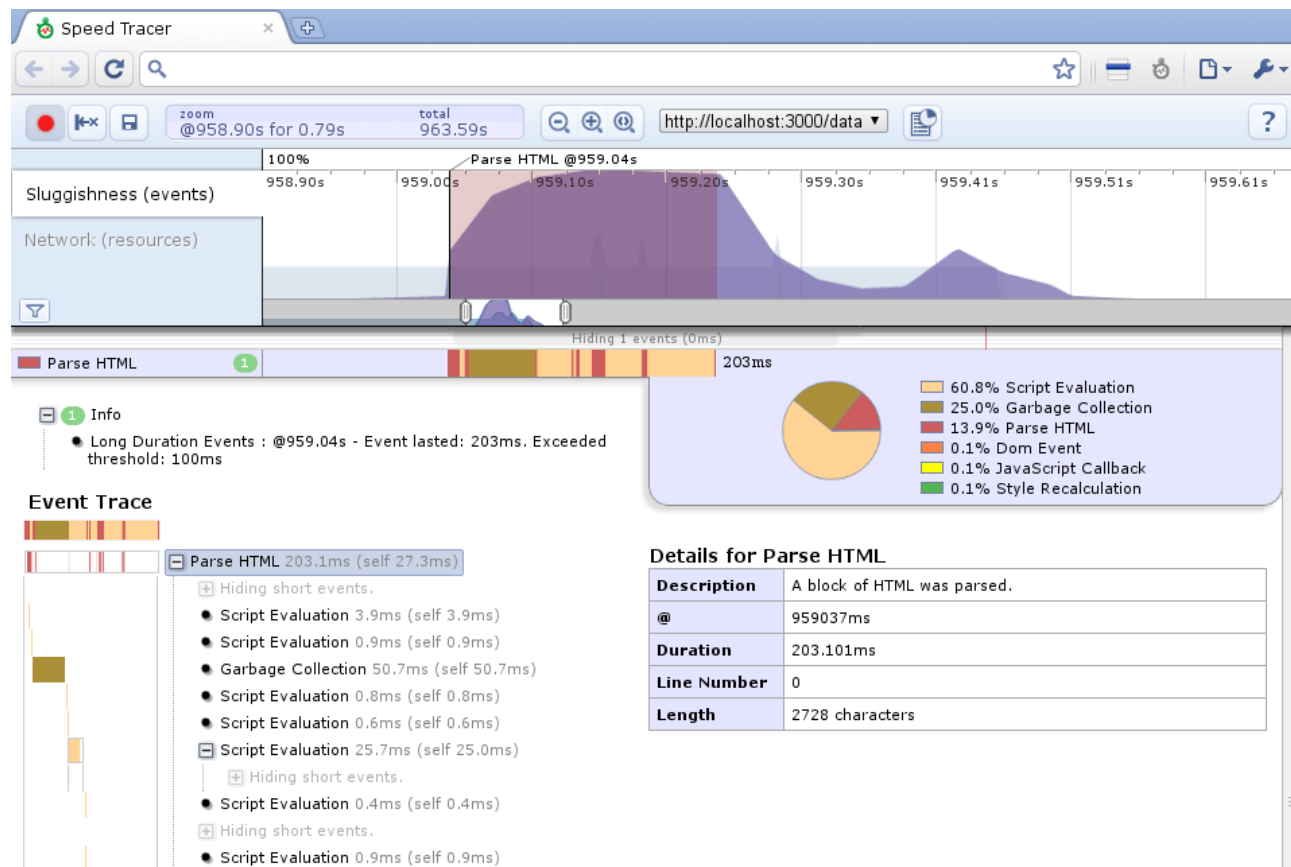
[Get more extensions >>](#)

...and open new tab



Chrome Speed Tracer

```
$ google-chrome --enable-extension-timeline-api  
http://code.google.com/p/speedtracer/
```



Find out more!

Blog

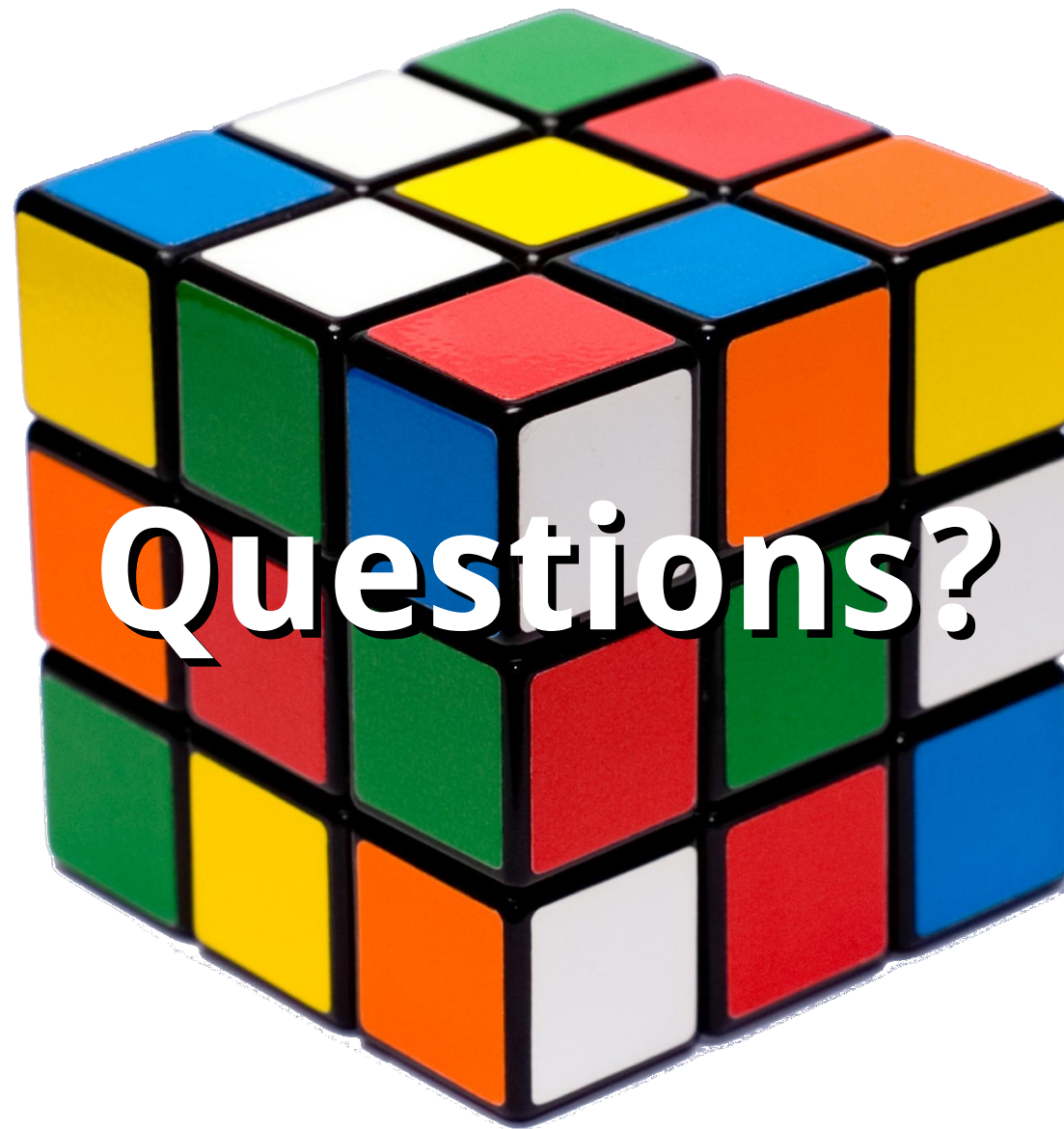
<http://blog.rot13.org/mojofacets>

github

<http://github.com/dpavlin/MojoFacets>

Project updates

<https://www.ohloh.net/p/MojoFacets>



<http://blog.rot13.org>