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THE INFRASTRUCTURE OF COLLABORATION

ERIK MÖLLER, ROB LANPHIER AND ALOLITA SHARMA
GOOGLE TECH TALK – AUGUST 25, 2011



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Europa (moon)

From Wikipedia, the free encyclopedia

Europa (ⁱ/ˈʊˈroʊpə/^[1] Greek: Ευρώπη) or **Jupiter II**, is the [sixth](#) closest [moon](#) of the [planet Jupiter](#), and the smallest of its four [Galilean satellites](#), but still one of the largest bodies in the [Solar system](#). Europa was discovered in 1610 by [Galileo Galilei](#)^[1] and possibly independently by [Simon Marius](#) around the same time. Progressively more in-depth observation of Europa has occurred over the centuries by Earth-bound telescopes, and by space probe flybys starting in the 1970s.

Slightly smaller than Earth's [Moon](#), Europa is primarily made of [silicate](#) rock and probably has an [iron](#) core. It has a tenuous atmosphere composed primarily of [oxygen](#). Its surface is composed of ice and is one of the smoothest in the Solar System. This surface is striated by cracks and streaks, while craters are relatively infrequent. The apparent youth and smoothness of the surface have led to the hypothesis that a [water](#) ocean exists beneath it, which could conceivably serve as an abode for [extraterrestrial life](#).^[12] This hypothesis proposes that heat energy from [tidal flexing](#) causes the ocean to remain liquid and drives geological activity similar to [plate tectonics](#).^[13]

Although only fly-by missions have visited the moon, the intriguing characteristics of Europa have led to several ambitious exploration proposals. The [Galileo](#) mission, launched in 1989, provided the bulk of current data on Europa. A new mission to Jupiter's icy moons, the [Europa Jupiter System Mission](#) (EJSM), is proposed for a launch in 2020.^[14] Conjecture on extraterrestrial life has ensured a high profile for the moon and has led to steady lobbying for future missions.^[15]^[16]

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 - 3.2.1 [Lineae](#)
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 - 3.3 [Subsurface ocean](#)
 - 3.4 [Atmosphere](#)
- 4 [Potential for extraterrestrial life](#)
- 5 [Exploration](#)
- 6 [Future Missions](#)

Europa



Europa's trailing hemisphere in approximate natural color. The prominent crater in the lower right is [Pwyll](#) and the darker regions are areas where Europa's primarily water ice surface has a higher mineral content. Imaged on September 7, 1996 by Galileo spacecraft.

Discovery

Discovered by [Galilei, Galileo](#)
[Marius, Simon](#)
Discovery date [January 8, 1610](#)^[1]

Designations

Alternate name(s) [Jupiter II](#)
Adjective [European](#)

Orbital characteristics^[2]

Epoch [January 8, 2004](#)

Periapsis [664 862 km](#)^[3]
Apoapsis [676 938 km](#)^[3]



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Editing Europa (moon)

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```
<!--{{Redirect|Jupiter II|the spaceship in the 1960s television series Lost in Space|Jupiter 2}}--><!--
Scroll down to edit the contents of this page.
Additional parameters for this template are available at [[Template:Infobox Planet]].
-->{{Infobox Planet
| name                = Europa
| alt_names           = Jupiter II
| adjectives          = European
| image               = [[Image:Europa-moon.jpg|275px]]
| caption             = Europa's trailing hemisphere in approximate natural color. The prominent crater in
the lower right is [[Pwyll (crater)|Pwyll]] and the darker regions are areas where Europa's primarily
water ice surface has a higher mineral content. Imaged on September 7, 1996 by Galileo spacecraft.
| bgcolour            = #a0ffa0
| discovery            = yes
| discoverer           = [[Galileo Galilei|Galilei, Galileo]]<br />[[Simon Marius|Marius, Simon]]
| discovered           = January 8, 1610<ref name="IAUMoonDiscoveries"/>
| orbit_ref            =<ref name="horizons">{{cite web |url=http://ssd.jpl.nasa.gov/horizons.cgi |title=JPL
HORIZONS solar system data and ephemeris computation service |work=Solar System Dynamics |publisher=
[[NASA]], Jet Propulsion Laboratory |accessdate=2007-08-10 }}</ref>
| epoch               = January 8, 2004
| mean_orbit_radius    = 670&nbsp;900&nbsp;km<ref name="factsheet">{{cite web |title=Overview of Europa
Facts |work=NASA |url=http://solarsystem.nasa.gov/planets/profile.cfm?Object=Jup_Europa |accessdate=2007-
```



ALL THESE WORLDS ARE YOURS
EXCEPT EUROPA

ATTEMPT NO LANDING THERE



Text

B *I* **A⁻** **A⁺** **A₋** **A₊**

Lists

{ } [] < >

Europa (/ɪˈjʊˈroʊpə/; Greek: Ευρώπη) or **Jupiter II**, is the [sixth](#) closest [moon](#) of the planet [Jupiter](#), and the smallest of its four [Galilean satellites](#), but still one of the largest bodies in the [Solar system](#). Europa was discovered in 1610 by [Galileo Galilei](#)^[1] and possibly independently by [Simon Marius](#) around the same time. Progressively more in-depth observation of Europa has occurred over the centuries by Earth-bound telescopes, and by space probe flybys starting in the 1970s.

Slightly smaller than Earth's Moon, Europa is primarily made of [silicate](#) rock and probably has an [iron](#) core. It has a tenuous atmosphere composed primarily of [oxygen](#). Its surface is composed of ice and is one of the smoothest in the Solar System. This surface is striated by cracks and streaks, while craters are relatively infrequent. The apparent youth and smoothness of the surface have led to the hypothesis that a water ocean exists beneath it, which could conceivably serve as an abode for [extraterrestrial life](#).^[12] This hypothesis proposes that heat energy from [tidal flexing](#) causes the ocean to remain liquid and drives geological activity similar to [plate tectonics](#).^[13] Although only fly-by missions have visited the moon, the intriguing characteristics of Europa have led to several ambitious exploration proposals. The [Galileo](#) mission, launched in 1989, provided the bulk of current data on Europa. A new mission to Jupiter's icy moons, the [Europa Jupiter System Mission \(EJSM\)](#), is proposed for a launch in 2020.^[14] Conjecture on extraterrestrial life has ensured a high profile for the moon and has led to steady lobbying for future missions.^{[15][16]}

1. Discovery and naming

Europa was discovered in January 1610 by Galileo Galilei,^[1] and possibly independently by Simon Marius. The Europa name is after a mythical [Phoenician](#) noblewoman, [Europa](#), who was courted by [Zeus](#) and became the queen of [Crete](#). Europa, along with Jupiter's three other largest moons, Io, Ganymede, and Callisto, was discovered by Galileo Galilei in January 1610. The first reported observation of Io was made by Galileo Galilei on January 7, 1610 using a [20x-power, refracting telescope](#) at the [University of Padua](#). However, in that observation, Galileo could not separate Io and Europa due to the low power of his telescope, so the two were recorded as a single point of light.

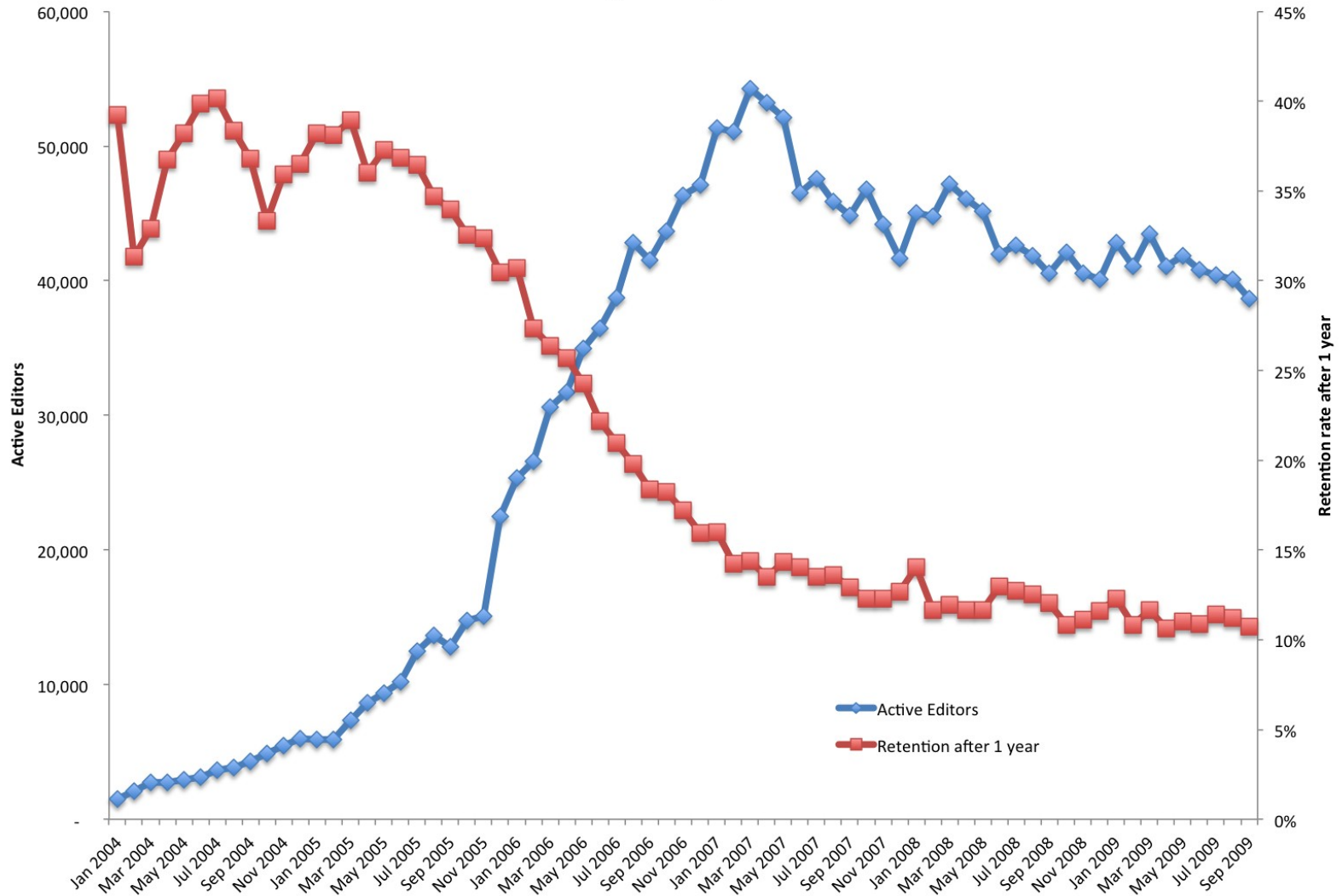


UNDERSTAND



Retention Rate vs. Active Editors

English Wikipedia





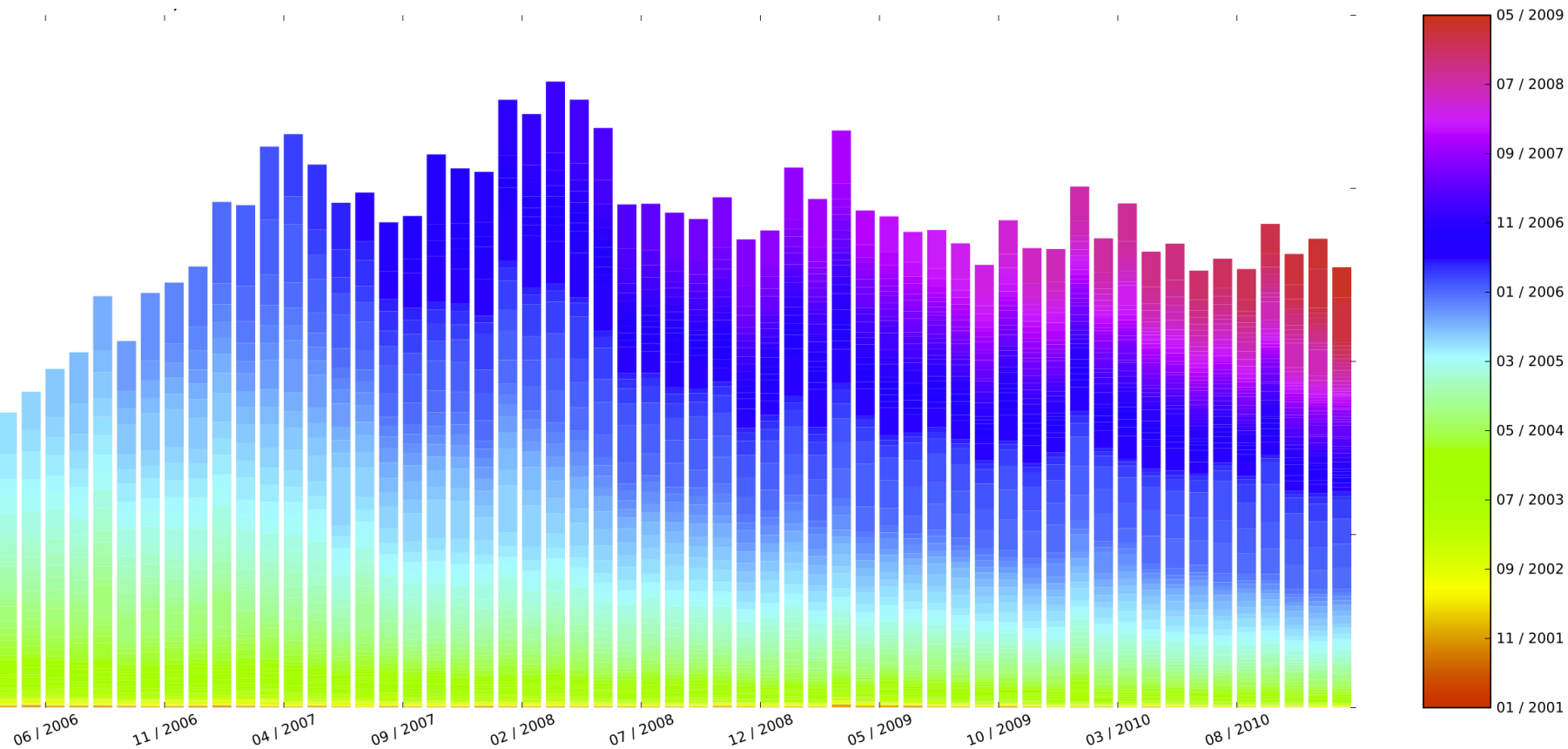
<http://www.kaggle.com/c/wikichallenge>

Deadline: September 20

Google: [wikipedia participation challenge](#)



VISUALIZE

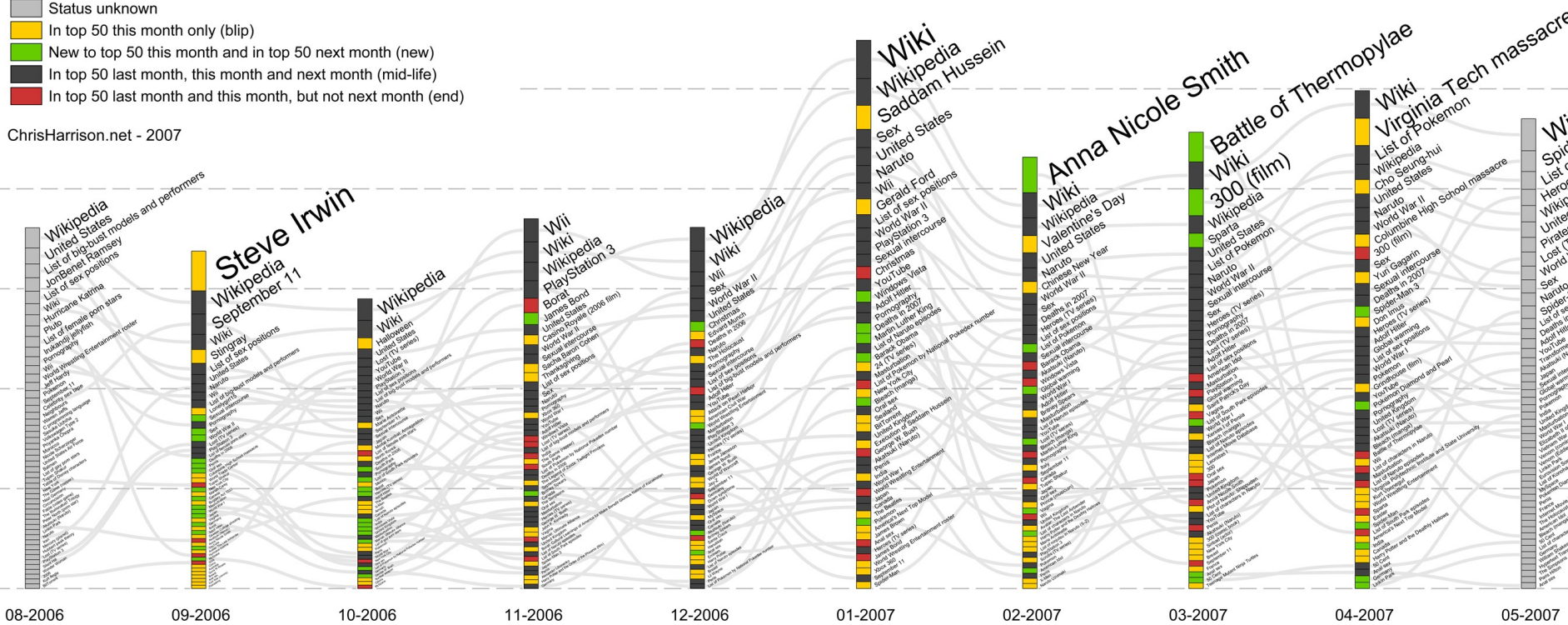


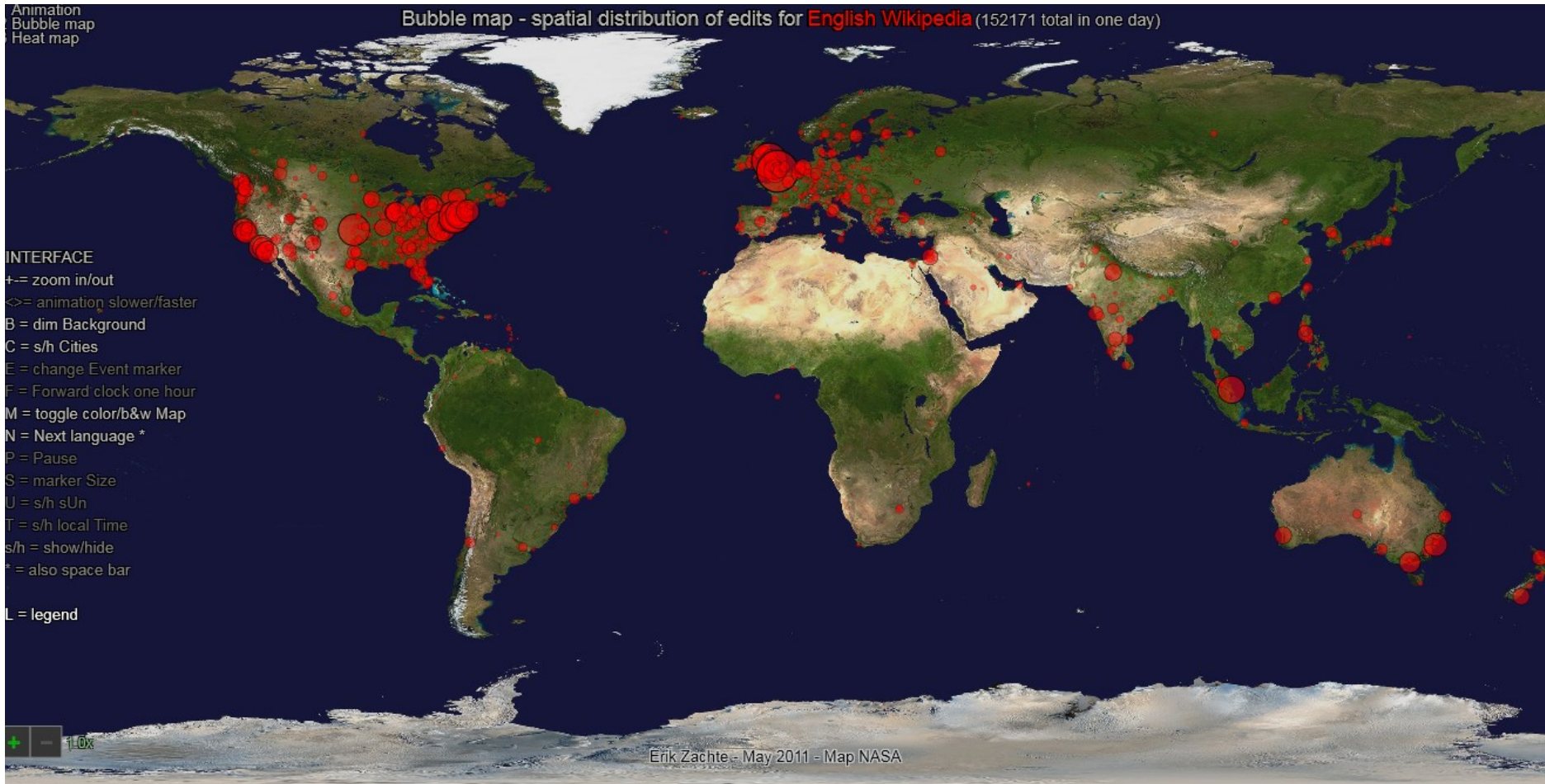


Wikipedia Top 50

- Status unknown
- In top 50 this month only (blip)
- New to top 50 this month and in top 50 next month (new)
- In top 50 last month, this month and next month (mid-life)
- In top 50 last month and this month, but not next month (end)

ChrisHarrison.net - 2007







<http://www.wikisym.org/ws2011/wikiviz>
[Google: wikiviz challenge]
Deadline: August 28



ENGAGE



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P

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(close)



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Sad



Confused

Because...

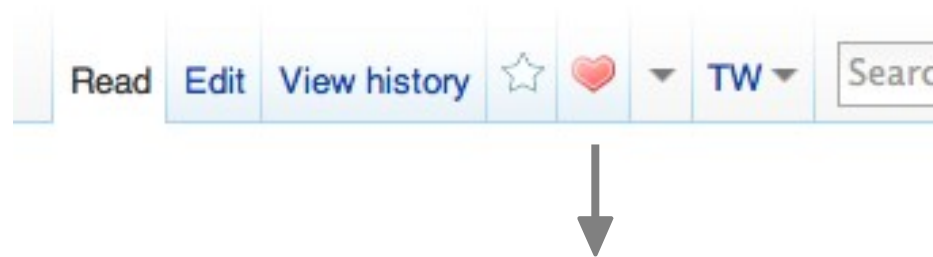
140 character maximum

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Enter a message: (without a signature)

Thanks for all your work on the [[transformational grammar]] article!

Preview

3 Preview

A barnstar for you!



The Editor's Barnstar

Thanks for all your work on the [transformational grammar](#) article. [Eloquence*](#) 19:00, 24 August 2011 (UTC)

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LOCALIZE



X

ויקי־אהבה - שליחת הודעת הערכה למשתמש אחר

1 בחירת סוג

כוכבים



אוכל ושתייה



יצירה אישית

**2** הוספת פרטים

מה לשים לך?

פלאפל ▼



פלאפל הוא מאכל מזרח תיכוני נפוץ, שעשוי בגרגרי חמוס ומוגש בדרך כלל בפיתה.

כותרת פסקה:

קפלאפל בשבילך!

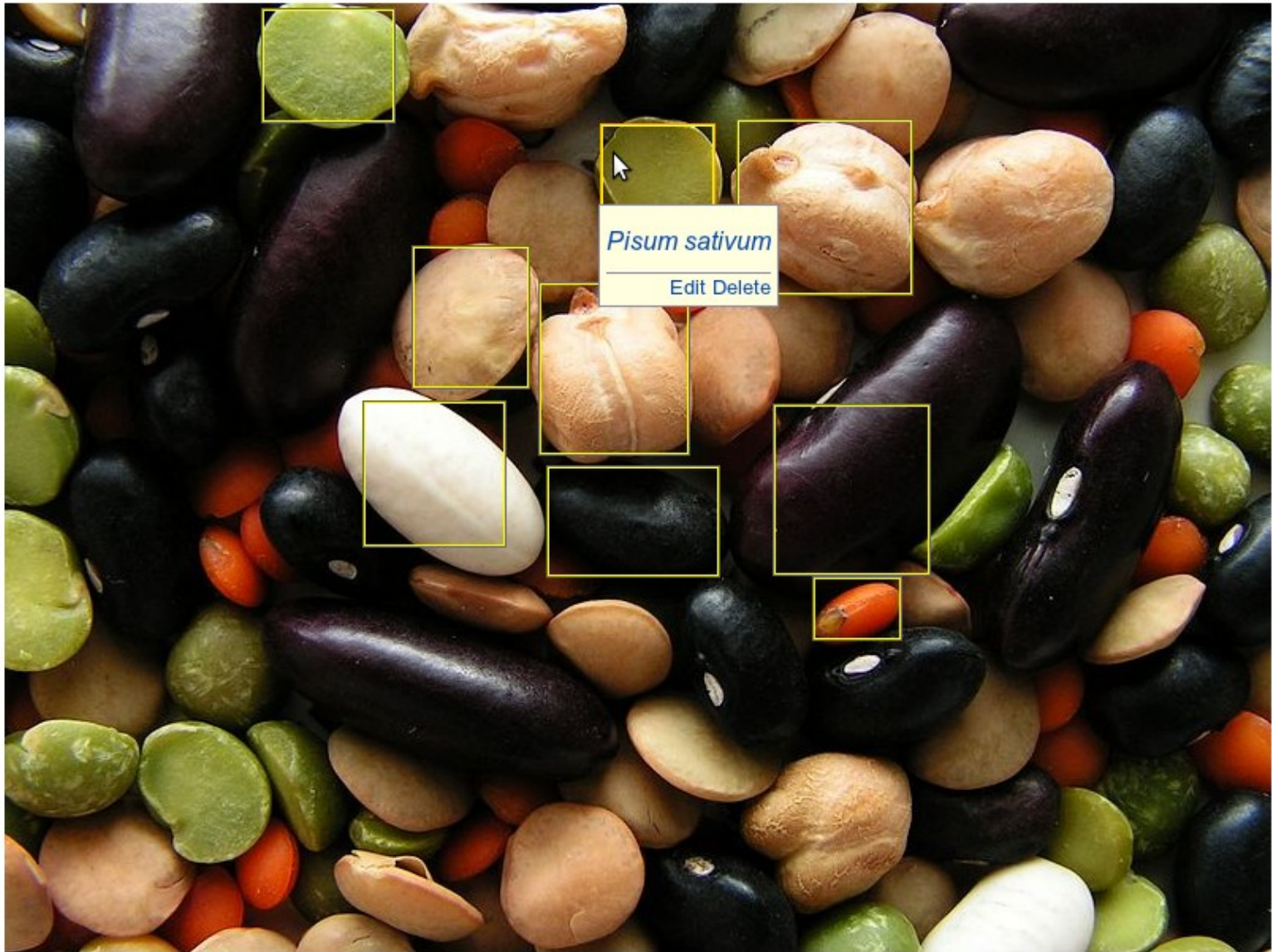
הודעה: (ללא חתימה)

I don't speak Hebrew, but the falafel doesn't look all that appetizing to me

תצוגה מקדימה



INNOVATE



Size of this preview: 800 × 600 pixels

This file has annotations. Move the mouse pointer over the image to see them.

Add a note





MediaWiki:Gadget-ImageAnnotator.js

Note: After saving, you have to [bypass your browser's cache](#) to see the changes. **Internet Explorer:** press *Ctrl-F5*, **Mozilla:** hold down *Shift* while clicking *Reload* (or press *Ctrl-Shift-R*), **Opera/Konqueror:** press *F5*, **Safari:** hold down *Shift + Alt* while clicking *Reload*, **Chrome:** hold down *Shift* while clicking *Reload*

```
// <source lang="javascript">

/*
  THIS IS ImageAnnotator VERSION 2.2b

  Image annotations. Draw rectangles onto image thumbnail displayed on image description
  page and associate them with textual descriptions that will be displayed when the mouse
  moves over the rectangles. If an image has annotations, display the rectangles. Add a
  button to create new annotations.

  Note: if an image that has annotations is overwritten by a new version, only display the
  annotations if the size of the top image matches the stored size exactly. To recover
  annotations, one will need to edit the image description page manually, adjusting image
  sizes and rectangle coordinates, or re-enter annotations.

  Author: [[User:Lupo]], June 2009 - March 2010
  License: Quadruple licensed GFDL, GPL, LGPL and Creative Commons Attribution 3.0 (CC-BY-3.0)

  Choose whichever license of these you like best :-)

  See http://commons.wikimedia.org/wiki/Help:Gadget-ImageAnnotator for documentation.
*/

// Global: getElementsByClassName, importScript, importScriptURI (wiki.js)
// Global: wgPageName, wgCurRevisionId, wgUserGroups, wgRestrictionEdit (inline script on the page)
// Global: wgAction, wgNamespaceNumber, wgUserLanguage, wgContentLanguage, stylepath (inline script)
// Global: wgNamespaceIds (inline script)

if (typeof (ImageAnnotator) == 'undefined') { // Guard against multiple inclusions

importScript ('MediaWiki:LAPI.js');
importScript ('MediaWiki:Tooltips.js');
importScript ('MediaWiki:TextCleaner.js');
importScript ('MediaWiki:UIElements.js');

(function () { // Local scope

var ImageAnnotator_config = null;

var ImageAnnotation = function () {this.initialize.apply (this, arguments);}

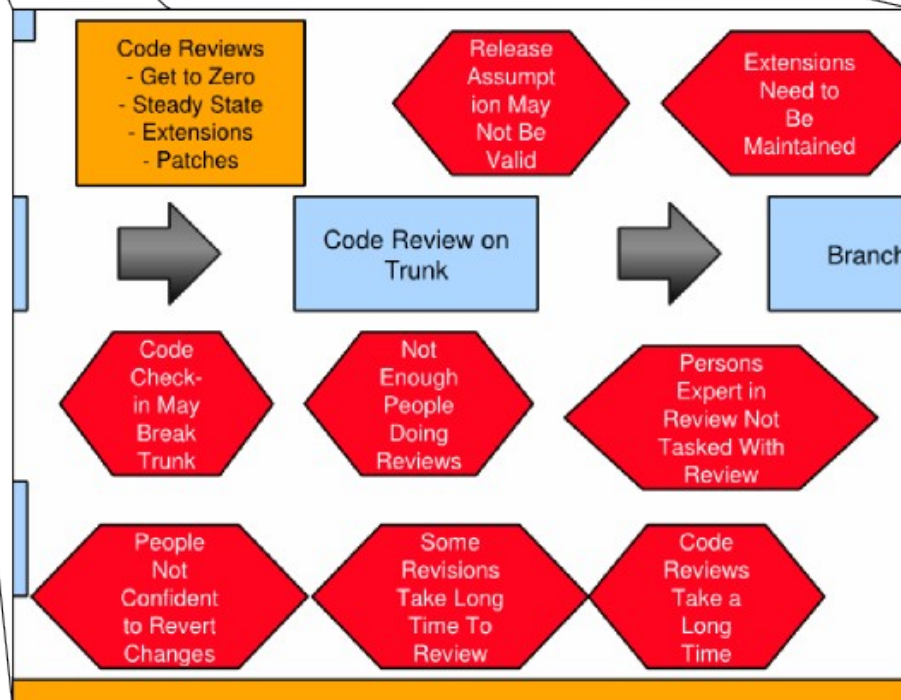
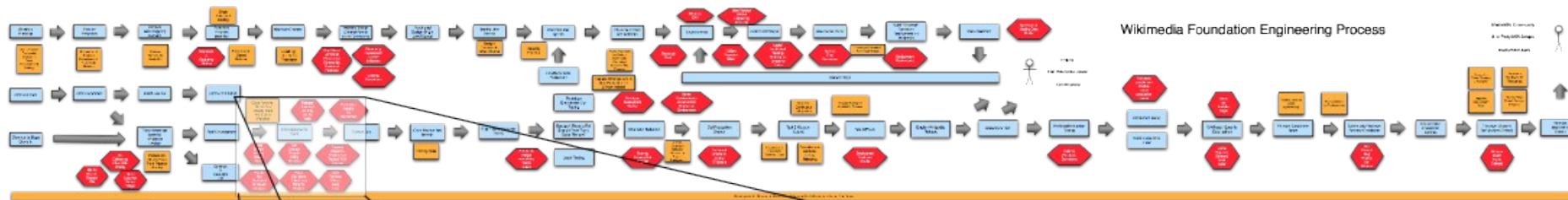
ImageAnnotation.compare = function (a, b)
{
  var result = b.area () - a.area ();
  if (result != 0) return result;
  return a.model.id - b.model.id; // Just to make sure the order is complete
};
```



```
1 /**
2  * Utility gadget for CodeReview extension.
3  * Adds button to interface to export a list of revision numbers,
4  * based on the checkbox currently checked.
5  * ! Beware: Code is hacky, quick and unstable but when it works,
6  * ! it's a nice time-saver to do shell commands such as "svn merge -c ..."
7  *
8  * @author Roan Kattouw [[User:Catrope]], 2011
9  * @author Timo Tijhof [[User:Krinkle]], 2011
10 */
11
12 /* console version */
13 window.checkedRevs = function( prefix, separator ) {
14     if ( prefix === undefined ) {
15         prefix = 'r';
16     }
17     if ( separator === undefined ) {
18         separator = ', ';
19     }
20     var s = [];
21     jQuery( '.TablePager_col_selectforchange input:checked' ).each( function() {
22         s.push( prefix + jQuery( this ).val() );
23     } );
24     return s.reverse().join( separator );
25 }
26
27 /* GUI version */
28
```



CORE



```

+         'globalfileusage' => array(
+             'globalfileusage',
+             'globalfileusage-for',
+             'globalfileusage-desc',
+             'globalfileusage-ok',
+             'globalfileusage-text',
+             'globalfileusage-no-results',

```



COMMUNITY



GSOC!



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Jorm



Unavailable

This username has been taken

Password:

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Strength: Okay



Confirm Password:

Please re-enter your password.



Matches

Both passwords match.

Email Address: (Optional)

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All rated articles by quality and importance						
Quality	Importance					Total
	Top	High	Mid	Low	???	
★ FA	757	1,226	1,068	508	198	3,757
★ FL	114	456	469	481	158	1,678
Ⓜ A	91	297	295	158	44	885
⊕ GA	1,012	2,372	4,398	3,981	1,152	12,915
B	7,771	16,332	23,849	15,478	11,162	74,592
C	4,834	13,774	29,461	31,745	21,781	101,595
Start	9,656	45,667	175,138	326,343	179,243	736,047
Stub	3,075	22,272	148,261	847,118	819,430	1,840,156
List	1,228	5,382	14,748	32,767	23,715	77,840
Assessed	28,538	107,778	397,687	1,258,579	1,056,883	2,849,465
Unassessed	205	870	2,777	14,790	467,478	486,120
Total	28,743	108,648	400,464	1,273,369	1,524,361	3,335,585



HACKATHONS





BE THERE



MOUNTAIN VIEW OCT 3-5

[Google: [wikisym](#)]



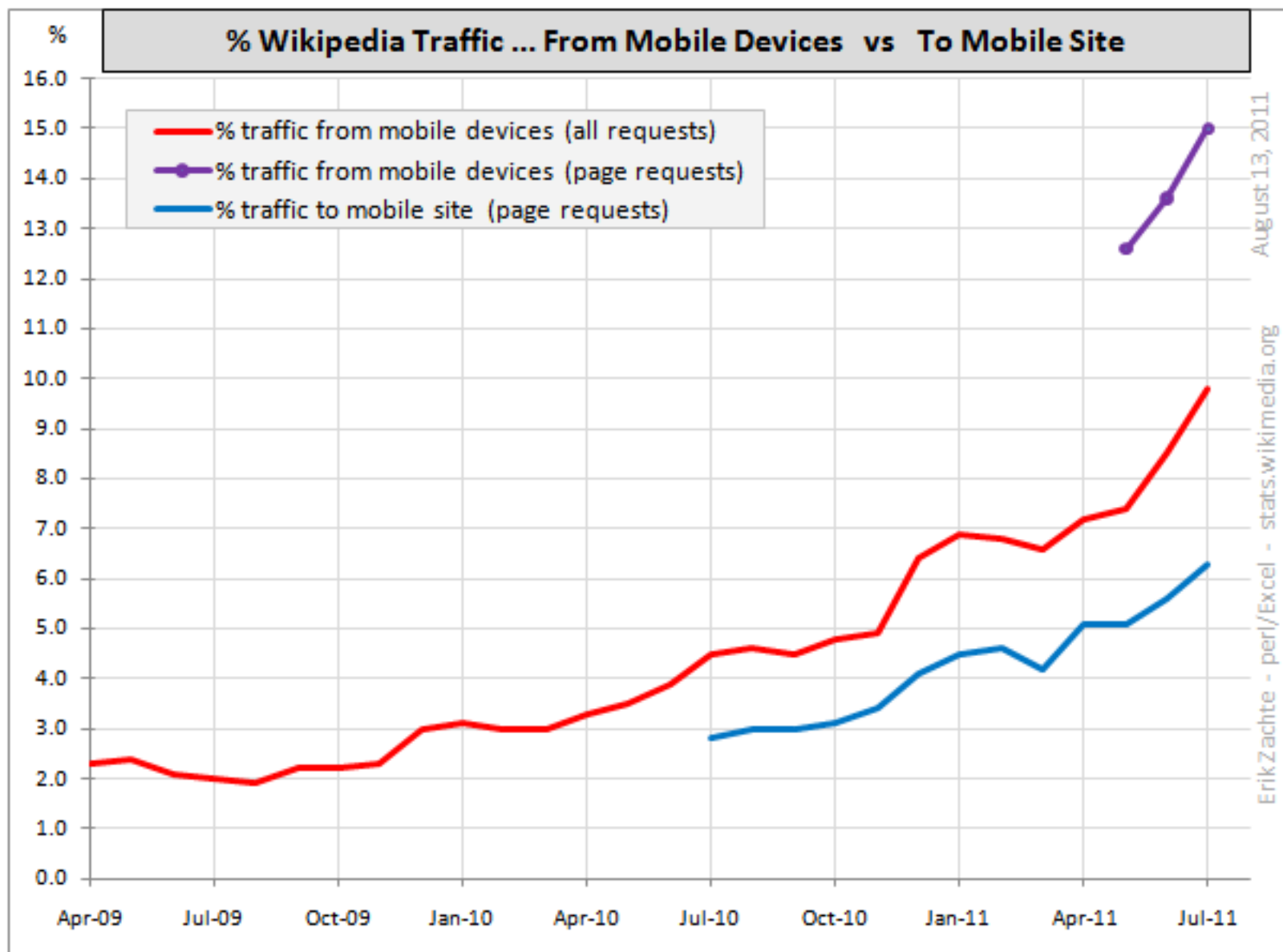
NEW ORLEANS
OCT 14-16

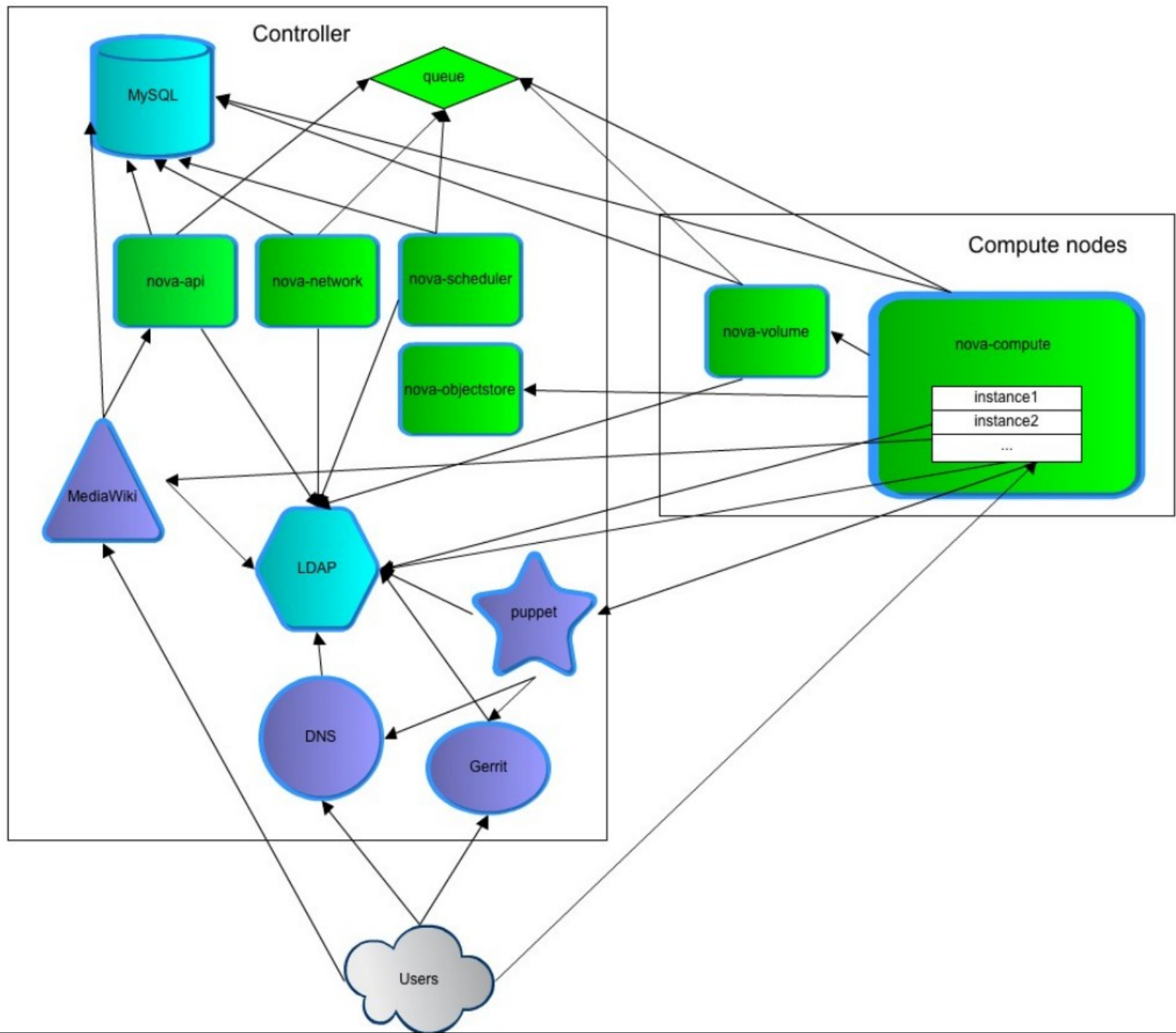
[Google: [nola hackathon](#)]



NEXT









Kingdom of Sweden Konungariket Sverige	
	
Flag	Coat of arms
Motto: (Royal) <i>"För Sverige i tiden"</i> ^[a] "For Sweden – With the Times"	
Anthem: <i>Du gamla, Du fria</i> ^[b] Thou ancient, thou free Royal anthem: <i>Kungssången</i> The Song of the King	
	
Location of Sweden (dark green) – on the European continent (light green & dark grey) – in the European Union (light green) — [Legend]	
Capital (and largest city)	Stockholm 59°21'N 18°4'E
Official language(s)	Swedish ^[c]
Ethnic groups	^[d] 81.9% Swedes ^[1] 5.1% Finns ^[2] 13.0% other (2009) ^{[3][4]}
Demonym	Swedish or Swedes
Government	Parliamentary democracy and Constitutional monarchy King Carl XVI Gustaf Fredrik Reinfeldt (M) Per Westerberg (M)
Consolidation - Personal union w. Denmark and Norway - de facto independent kingdom - end of Scandinavian union ratified - Swedish-Norwegian Union begins - Swedish-Norwegian Union ends	June 17, 1397 June 6, 1523 1524 November 4, 1814 August 13, 1905
EU accession	1 January 1995
Area - Total - Water (%)	449,964 km ² (57th) 173,745 sq mi 8.7
Population - 2009 census - Density	9,354,462 ^[5] 20.6/km ² (192nd) 53.3/sq mi
GDP (PPP) - Total - Per capita	2009 estimate \$331.504 billion ^[6] \$35,965 ^[6]
GDP (nominal) - Total - Per capita	2009 estimate \$405.440 billion ^[6] \$43,986 ^[6]

مملكة السويد	
	
	علم
النشيد الوطني: <i>Du gamla, Du fria</i>	
	
ستوكهولم N, 18°4'E 21°59'	العاصمة (وأكبر مدينة)
السويدية	اللغة الرسمية
سويديون	تسمية السكان
ملكية دستورية	نظام الحكم
كارل السادس عشر غوستاف	الملك
فريدريك رينفلت	رئيس الوزراء
الأميرة فيكتوريا	ولي العهد
449,964 كم ² (57) 173,745 ميل مربع	المساحة المجموع
1.1	نسبة المياه (%)
9,340,682 20.6/كم ² (192) 53.3/ميل مربع	السكان - توقع 2009 - الكثافة السكانية
تقدير 2009	الناج المحلي الإجمالي (تعداد القدرة الشرائية)

Konungariket Sverige Königreich Schweden	
	
Flagge	Wappen
Amtssprache	Schwedisch Regionale Sprachen: Finnisch, Meänkieli, Samisch Anerkannte Minderheitensprachen: Jiddisch, Romani, Svenskt teckenspråk ^[1] (schwedisches Gebärdensprache)
Hauptstadt	Stockholm
Staatsform	Parlamentarische Monarchie
Staatsoberhaupt	König Carl XVI. Gustaf
Regierungschef	Fredrik Reinfeldt
Fläche	450.295 ^[2] km²
Einwohnerzahl	9.340.682 (Dez. 2009) ^[3]
Bevölkerungsdichte	20,74 Einwohner pro km²
Bruttoinlandsprodukt pro Einwohner	42.392 US\$ (2005)
Human Development Index	(7.) 0.963
Währung	1 Schwedische Krone = 100 Öre
Nationalhymne	<i>Du gamla, Du fria</i>
Zeitzone	UTC+1 MEZ UTC+2 MESZ (März bis Oktober)
Kfz-Kennzeichen	S
Internet-TLD	.se
Telefonvorwahl	+46
	
	



ASK

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robla@wikimedia.org
alolita@wikimedia.org

LICENSING



Wikipedia article “Europa”

[http://en.wikipedia.org/wiki/Europa_\(moon\)](http://en.wikipedia.org/wiki/Europa_(moon))

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