

# Enhancing Statistics

Using the Google Analytics and Visualisation APIs



**Summary Data**

- MonthlyDownloadsGraph
- DailyDownloadsGraph
- MonthlyUniqueVisitorsGraph
- AllMonthlyDownloadsGraph
- 29327
- DownloadCountHTML

**Simple Analyses**

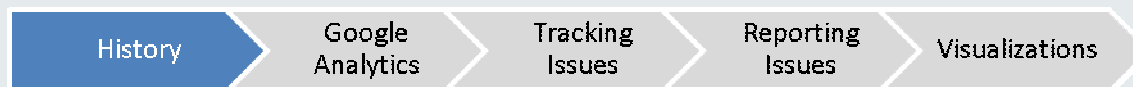
- TopTenTable
- ReferrerGraph
- SearchEngineGraph
- TopCountriesTable
- TopTenAcademies
- TopTenSearchTermsTable
- RawDataTableHTML

**Complex Analyses**

- TopTenMonthlyDownloadsGraph
- TopTenTableDashLinked
- HighestClick
- TopTenNonSearchReferrers
- RandomFromTopTenHTML
- TopItemHTML

## Existing Solutions

Statistics packages shipped with or added on to IRs



# Log Analysis

## Statistics for OR Demo

01-Aug-2009 to 01-Jun-2010

General Overview | Archive Information | Items Viewed | All Actions Performed | User Logins | Words Searched | Averaging Information | Log Level Information | Processing Information

### General Overview

Top

Items Archived	87
Bitstream Views	4,273
Item Views	6,321
Collection Views	2,408
Community Views	1,522
User Logins	51
Searches Performed	2,904
Licence Rejections	0
OAI Requests	835

DSpace 1.3-1.5

General Overview | Archive Information | Items Viewed | All Actions Performed | User Logins | Words Searched | Averaging Information | Log Level Information | Processing Information

### Archive Information

Top

Content Type	Number of items
All Items	48
Preprint	0
Thesis or Dissertation	0
Research Paper	0

General Overview | Archive Information | Items Viewed | All Actions Performed | User Logins | Words Searched | Averaging Information | Log Level Information | Processing Information

### Items Viewed

Top  
(more than 20 times)

Item/Handle	Number of views
	29327

## Usage Statistics for the

ePrintsStats

Most viewed eprints: [Past four weeks] [This year] [Last year] [All years]  
 Repository-wide statistics: [by Year/month] [by Country]

Representing and intervening in child abuse law, statistics, community

For this eprint: [Past four weeks] [This year] [Last year] [All years]

History of downloads for this ePrint

The numbers in parentheses are the number of distinct countries from which downloads originated.

Period	Downloads	
2010 Jun	20 (4)	
2010 May	33 (8)	
2010 Apr	17 (7)	
2010 Mar	21 (5)	

### Choice of View

The view determines how data is rendered and may provide additional data refinements (for example showing a summary for authors).

#### Summary Data



#### MonthlyDownloadsGraph



#### DailyDownloadsGraph



#### MonthlyUniqueVisitorsGraph

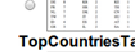
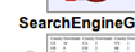


#### AllMonthlyDownloadsGraph



#### DownloadCountHTML

#### Simple Analyses



#### TopTen

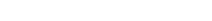
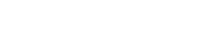
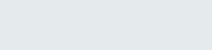
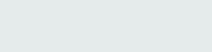
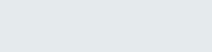
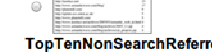


#### ReferrerGraph

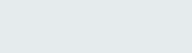
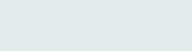
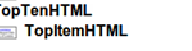
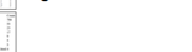


IRStats

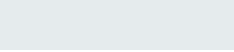
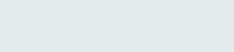
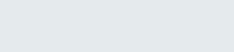
#### TopTenTableDashLinked



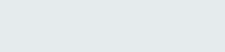
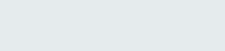
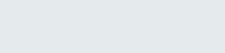
#### HighestClimbersTable



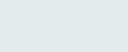
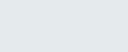
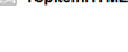
#### TopTenNonSearchReferrers



#### RandomFromTopTenHTML



#### TopItemHTML



# Event Driven

Search DSpace

[Advanced Search](#)

[Home](#)

**Browse**

- [Communities & Collections](#)
- [Issue Date](#)
- [Author](#)
- [Title](#)
- [Subject](#)

**Sign on to:**

- [Receive email updates](#)
- [My DSpace](#) authorized users
- [Edit Profile](#)
- [Help](#)
- [About DSpace](#)

[DSpace Demo Repository >](#)

## Statistics

### Total Visits

	Views
01 - OR2010 Collection 1 - 10673/229	93

### Total Visits per Month

	December 2009	January 2010	February 2010	March 2010	April 2010	May 2010	June 2010
01 - OR2010 Collection 1 - 10673/229	0	0	0	0	0	0	93

### Top Country Views

New Zealand	
United States of America	
United Kingdom	
Mexico	5
Brazil	4
France	4
Kyrgyz Republic	4
Switzerland	3
Poland	3
Paraguay	3

### Top City Views

	Views
Auckland	18
San Nicolás De Los Garza	5
Belo Horizonte	3
Bern	3
Christchurch	3
Kraków	3
London	3
Nemby	3
Birmingham	2
Bucharest	2

DSpace 1.6

## Statistics

### Total Visits

	Views
A groupwise association test for rare mutations using a weighted sum statistic	15

### Total Visits Per Month

	December 2009	January 2010	February 2010	March 2010	April 2010	May 2010	June 2010
A groupwise association test for rare mutations using a weighted sum statistic	0	0	0	0	0	0	15

### Top countries views

	Views
New Zealand	4
United Kingdom	3
Switzerland	2
Romania	2
United States of America	2
Hungary	1
South Africa	1

### Top cities views

Auckland	
Edinburgh	
Bern	
Bucharest	
San Antonio	
Bellville	
Jászberény	

Search DSpace

Search DSpace  
 This Collection  
[Advanced Search](#)

**Browse**

- All of DSpace
  - [Communities & Collections](#)
  - [By Issue Date](#)
  - [Authors](#)
  - [Titles](#)
  - [Subjects](#)
- This Collection
  - [By Issue Date](#)
  - [Authors](#)
  - [Titles](#)
  - [Subjects](#)

**My Account**

- [My Exports](#)
- [Login](#)
- [Register](#)

**Statistics**

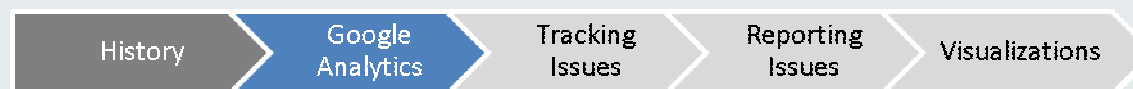
- [View Statistics](#)

- Internal DSpace events
- External SOLR app
- Ad hoc queries



## Google Analytics - Overview

Its strengths, and its weaknesses



# Google Analytics: Pros

Easy Setup

**Standard** | **Advanced** | **Custom**

**1 What are you tracking?**

- A single domain (default)**
  - Domain: bmc.openrepository.com
  - One domain with multiple subdomains
  - Multiple top-level domains
- I want to track AdWords campaigns

**2 Paste this code on your site**

Copy the following code, then paste it onto every page you want to track immediately before the closing </head> tag. [Learn more](#)

```
<script type="text/javascript">
var _gaq = _gaq || [];
_gaq.push(['_setAccount', 'UA-1541549-26']);
_gaq.push(['_trackPageview']);

(function() {
var ga = document.createElement('script'); ga.type = 'text/javascript'; ga.async = true;
ga.src = ('https:' == document.location.protocol ? 'https://ssl' : 'http://www') + '.google-analytics.com/ga.js';
var s = document.getElementsByTagName('script')[0];
s.parentNode.insertBefore(ga, s);
})();
</script>
```

Tracks cache hits

## Set Up Email: Dashboard

Back to report

**Send to others:**  
 (Separate multiple addresses with a comma)

Send to me

**Subject:**

**Description:**

**Format:**

- PDF
- CSV
- XML
- TSV

Email reports

## Manage Custom Reports

Design a one of a kind report to fit your needs. [Learn how](#) to build a custom report.

+ Create new custom report

### Custom Reports in www.e-space.mmu.ac.uk/e-space/

Name	Dimensions	Action
Custom Title June 16, 2009	Source, Referral Path	HIDE FROM PROFILE   <a href="#">Edit</a>   <a href="#">Share</a>   <a href="#">Delete</a>

Search:

Powerful tools

## Manage Advanced Segments

Segments let you group certain types of visits together.

### Advanced Segments in www.e-space.mmu.ac.uk/e-space/

Name	Conditions	Action
Downloads	Page Contains /bitstream/ ...	HIDE FROM PROFILE   <a href="#">Edit</a>   <a href="#">Copy</a>   <a href="#">Share</a>   <a href="#">Delete</a>
Handle usage	Source Contains handle.net ...	HIDE FROM PROFILE   <a href="#">Edit</a>   <a href="#">Copy</a>   <a href="#">Share</a>   <a href="#">Delete</a>
Items and Downloads	Page Contains /handle/ ...	HIDE FROM PROFILE   <a href="#">Edit</a>   <a href="#">Copy</a>   <a href="#">Share</a>   <a href="#">Delete</a>

Export   Advanced Segments: All Visits

### Advanced Segments

Select up to four segments by which to filter your report

Create a new advanced segment  
 Manage your advanced segments

#### Default Segments

- All Visits
- New Visitors
- Returning Visitors
- Paid Search Traffic
- Non-paid Search Traffic
- Search Traffic
- Direct Traffic

#### Custom Segments

- Downloads [edit](#)
- Handle usage [edit](#)
- Items and Downloads [edit](#)

**Dashboard**

- Intelligence Beta
- Daily Alerts
- Weekly Alerts
- Monthly Alerts

**Visitors**

- Traffic Sources
- Content
- Goals

**Custom Reporting**

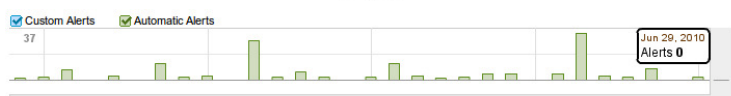
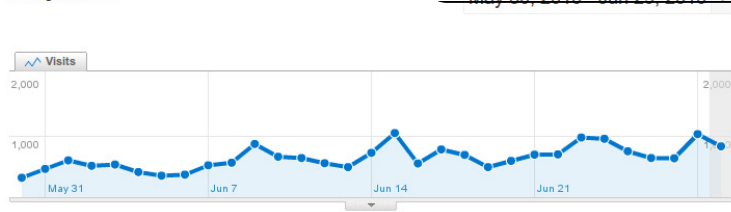
**My Customizations**

- Custom Reports
- Advanced Segments
- Intelligence Beta
- Email

**Help**

- About
- Conversion University
- Common Questions

## Daily Alerts



Alerting

Monday, June 28, 2010 **Tuesday, June 29, 2010**

[+ Create a Custom Alert](#)

There are no custom alerts for this date range.

Alert Sensitivity:  High

There are no automatic alerts for this date range. Please select a different date or increase the alert sensitivity.

## Content Overview

May 30, 2010 - Jun 29, 2010





# Google Analytics: Cons

2 Paste this code

Requires Javascript

Copy the following code and paste it immediately before the opening <body> tag of your HTML page.

```
<script type="text/javascript">
var _gaq = _gaq || [];
_gaq.push(['_setAccount', 'UA-1541549-26']);
_gaq.push(['_trackPageview']);

(function() {
  var ga = document.createElement('script'); ga.type = 'text/javascript'; ga.async = true;
  ga.src = ('https:' == document.location.protocol ? 'https://ssl.google-analytics.com/ga.js' : 'http://www.google-analytics.com/ga.js');
  var s = document.getElementsByTagName('script')[0]; s.parentNode.insertBefore(ga, s);
})();
</script>
```



535 pages were viewed a total of 10,740 times

Content Performance Views: [Grid] [Table] [List] [Bar] [Line]

<b>Pageviews</b> 10,740 % of Site Total: 99.81%	<b>Unique Pageviews</b> 8,671 % of Site Total: 99.78%	<b>Avg. Time on Page</b> 00:02:08 Site Avg: 00:02:08 (-0.03%)	<b>Bounce Rate</b> 21.55% Site Avg: 21.78% (-1.05%)	<b>% Exit</b> 56.30% Site Avg: 56.38% (-0.13%)	<b>\$ Index</b> \$0.00 Site Avg: \$0.00 (0.00%)
---	---	---	---	--	---

Separate login

Sign in to Google Analytics with your **Google Account**

Email:

Password:

Stay signed in

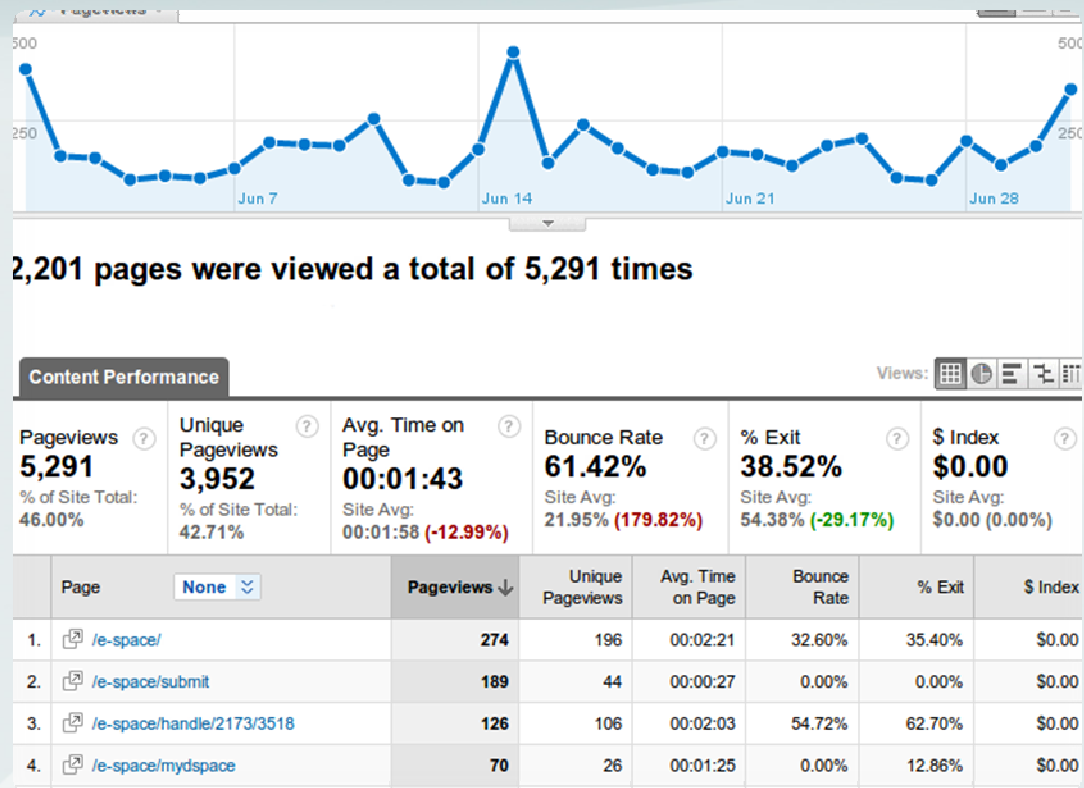
[Can't access your account?](#)

Don't have a Google account?  
[Sign Up Now.](#)

Reports URL path/part

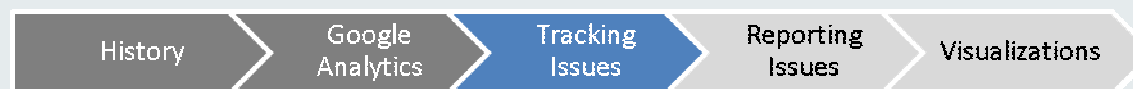
Page	None	Pageviews	Unique Pageviews	Avg. Time on Page	Bounce Rate	% Exit	\$ Index
1. /bitstream/					0.64%	70.71%	\$0.00
2. /handle/					64.70%	50.52%	\$0.00
3. /		254	186	00:02:34	33.14%	35.43%	\$0.00
4. /submit		189	44	00:00:27	0.00%	0.00%	\$0.00
5. /myspace		70	26	00:01:25	0.00%	12.86%	\$0.00
6. /password-login		52	29	00:00:11	37.50%	15.38%	\$0.00
7. /advanced-search		50	28	00:00:31	50.00%	4.00%	\$0.00
8. /simple-search?query=((author:day))&							\$0.00
9. /browse?type=author							\$0.00
10. /forgot		24	7	00:00:38	50.00%	29.17%	\$0.00

Hard to locate specific items



## Google Analytics – Tracking Issues

Shortcomings of the Google tracker, and how to overcome them





# Problem: Downloads

MMU Home | Prospectus | About MMU | A-Z Index | Contacts

Manchester Metropolitan University

mmuch more to be proud of

Home :: My e-space :: Submit :: Help :: Feedback :: MMU Library :: Register/Login

Search:  Go

Advanced Search

Browse by

Collection All

Title

Author

Date issued

espace at MMU > Faculties > MMU Cheshire > Department of Exercise and Sports Science > Specificity of acceleration, maximum speed and agility in professional soccer players

Please use this identifier to cite or link to this item: <http://hdl.handle.net/2173/3518>

submit to digg | Del.icio.us | LinkedIn | Citeulike | Connotea | Facebook | Stumble It!

View Statistics | Show full item record | Recommend this item | Export to | EndNote | Find it!

<b>Title:</b>	Specificity of acceleration, maximum speed and agility in professional soccer players
<b>Authors:</b>	Little, Thomas Williams, Alun G.
<b>Citation:</b>	Journal of strength and conditioning research, 2005, vol. 19, no. 1, pp. 76-78
<b>URI:</b>	<a href="http://hdl.handle.net/2173/3518">http://hdl.handle.net/2173/3518</a>

Items in this item:

File	Description	Size	Format	View/Open
<a href="#">williams - specificity of acceleration.pdf</a>		89Kb	Adobe PDF	<a href="#">View/Open</a>

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Powered by Open Repository

W3C XSL 1.0

- Page tracked in footer

- Download link will return PDF, not html – so no Analytics tracker

```
<a target="_blank" href="/e-space/bitstream/2173/3518/3/williams%20-%20specificity%20of%20acceleration.pdf" >williams - specificity of acceleration.pdf</a>
```

```
<script type="text/javascript">
varpageTracker =
_gat._getTracker("UA-1234567-3");
pageTracker._initData();
pageTracker._trackPageview();
</script>
```

# Downloads – Solution 1

MMU Home | Prospectus | About MMU | A-Z Index | Contacts

Manchester Metropolitan University

mmuch more to be proud of

Home :: My e-space :: Submit :: Help! :: Feedback :: MMU Library :: Register/Login

Search:  Go  
Advanced Search

Browse by  
Collection All  
Title  
Author  
Date issued

espace at MMU > Faculties > MMU Cheshire > Department of Exercise and Sports Science > Specificity of acceleration, maximum speed and agility in professional soccer players

Please use this identifier to cite or link to this item: <http://hdl.handle.net/2173/3518>

submit to digg Del.icio.us LinkedIn Citeulike Connotea Facebook Stumble It!

View Statistics Show full item record Recommend this item Export to EndNote Find it!

<b>Title:</b>	Specificity of acceleration, maximum speed and agility in professional soccer players
<b>Authors:</b>	Little, Thomas Williams, Alun G.
<b>Citation:</b>	Journal of strength and conditioning research, 2005, vol. 19, no. 1, pp. 76-78
<b>URI:</b>	<a href="http://hdl.handle.net/2173/3518">http://hdl.handle.net/2173/3518</a>

`<a target="_blank" href="/e-space/bitstream/2173/3518/3/williams%20-%20specificity%20of%20acceleration.pdf" onclick="javascript:pageTracker._trackPageview('/e-space/bitstream/2173/3518/3/williams%20-%20specificity%20of%20acceleration.pdf');">williams - specificity of acceleration.pdf</a>`

File	Description	Size	Format	View/Open
<a href="#">williams - specificity of acceleration.pdf</a>		89Kb	Adobe PDF	<a href="#">View/Open</a>

All items in e-space are protected by copyright, with all rights reserved, unless otherwise indicated.

Powered by Open Repository

- OnClick tracks url of download

- Every download link needs to be changed

- Does not track links from outside

```
<script type="text/javascript">
varpageTracker =
_gat._getTracker("UA-1234567-3");
pageTracker._initData();
pageTracker._trackPageview();
</script>
```

# Tracking without Javascript

## Mobile site code

Standard Advanced Custom

**1 What are you tracking?**

A single domain (default)

One domain with multiple subdomains

Multiple top-level domains

**A site built for a mobile phone**

Select your mobile site's server-side language

PHP

Perl

**JSP**

ASPX

I want to track AdWords campaigns

**2 Paste code on your mobile site**

Note: Do not use desktop tracking code on pages where you use mobile tracking.

Step 1: Copy the following code, then paste it onto every page you want to track immediately before the first <html> tag. [Learn more](#)

```
<%@ page import="java.io.UnsupportedEncodingException,
    java.net.URLEncoder" %>

<%!
// Copyright 2009 Google Inc. All Rights Reserved.
private static final String GA_ACCOUNT = "MO-1541549-2";
private static final String GA_PIXEL = "/ga.jsp";

private String googleAnalyticsGetImageUrl(
    HttpServletRequest request) throws UnsupportedEncodingException {
    StringBuilder url = new StringBuilder();
    url.append(GA_PIXEL + "?");
    url.append("utm=").append(GA_ACCOUNT);
    url.append("&utm=").append(Integer.toString((int) (Math.random() * 0x7f)));
    String referer = request.getHeader("referer");
    String query = request.getQueryString();
    String path = request.getRequestURI();
    if (referer == null || "".equals(referer)) {
        referer = "-";
    }
    url.append("&utm=").append(URLEncoder.encode(referer, "UTF-8"));
}
```

Step 2: Copy the following code, then paste it onto every page you want to track immediately before the </body> tag. [Learn more](#)

```
<% String googleAnalyticsImageUrl = googleAnalyticsGetImageUrl(request); %>

```

**3 Copy this file to your root directory**

Download [ga.jsp](#) and save it to the root directory ("") of your web server. Make sure that your root directory is configured to execute server-side code. [Learn more](#)

Have an iPhone or Android application you'd like to track?

Note: Use our SDKs for iPhone & Android to track usage inside of your mobile application.

- Introduced Oct/Nov 2009
- Server side code retrieves image from Google Analytics to log request
- Supports page views and events
- PHP/Perl/JSP/ASPX code provided

*<http://code.google.com/mobile/analytics/docs/web/>*

# Downloads – Solution 2

```
Source of: https://ssl.gstatic.com/analytics/20100608/mobile/ga.jsp

String utmGifLocation = "http://www.google-analytics.com/__utm.gif";

// Construct the gif hit url.
String utmUrl = utmGifLocation + "?" +
  "utmwv=" + version +
  "&utmhn=" + get randomNumber() +
  "&utmr=" + URLEncoder.encode(domainName, "UTF-8") +
  "&utmp=" + URLEncoder.encode(documentReferer, "UTF-8") +
  "&utmacc=" + account +
  "&utmcc=__utma%3D999.999.999.999.1%3B" +
  "&utmvid=" + visitorId +
  "&utmip=" + getIP(request.getRemoteAddr());

sendRequestToGoogleAnalytics(utmUrl, request);
```

- Intercept download request
- Test user agent for robots
- Call **[http://www.google-analytics.com/\\_\\_utm.gif](http://www.google-analytics.com/__utm.gif)** from server

**Identifying robots**

Contains: bot, crawl, fetch, ndex, nutch, spider  
 Major engines: teoma, bing, msnbot, slurp  
 Contains email address or url

Documentation for the \_\_utm.gif parameters:

<http://code.google.com/apis/analytics/docs/tracking/gaTrackingTroubleshooting.html#gifParameters>

# Event Tracking

- Events have Category and Action  
eg. 'Videos' and 'Play'
- Optional label  
eg. Name of video
- Optional value  
eg. Time to load
- Log via Javascript, or  
Mobile site code

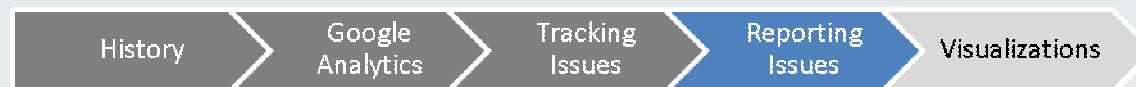


Event tracking guide:

<http://code.google.com/apis/analytics/docs/tracking/eventTrackerGuide.html>

## Google Analytics – Reporting Issues

Relating the statistics to repository contents





# Relating to the Repository

## • Faculties

### ◦ Faculty of Art and Design

- Department of Art and Media [8]
- Manchester School of Architecture [0]
- School of Design [0]
- School of History of Art and Design [1]

### ◦ Faculty of Health, Psychology and Social Care

- Continuing Professional Development and Postgraduate Studies [14]
- Department of Physiotherapy [31]
- Professional Registration [56]
- Psychology and Social Change [57]

### ◦ Faculty of Humanities, Law and Social Science

- Department of Economics [64]
- Department of English [66]
- Department of History and Economic History [38]
- Department of Information and Communications [318]
- Department of Languages [49]
- Department of Politics and Philosophy [41]
- Department of Sociology [185]
- Discussion Papers in Economics [10]
- Interaction Research Group [0]
- School of Law [2]

### ◦ Faculty of Science and Engineering

- Centre for Materials Science Research: Advanced Materials: Synthesis, Properties
- Centre for Materials Science Research: Organic Polymers and their Properties [0]
- Centre for Materials Science Research: Surface Coating and Characterisation Res
- Department of Biological Sciences [141]
- Department of Biological Sciences Research: Behavioural and Environmental Biol
- Department of Biological Sciences Research: Cell and Molecular Biology [0]
- Department of Biological Sciences Research: Fermentation and Industrial Microbi
- Department of Biological Sciences Research: Microbiology [105]
- Department of Chemistry and Materials [1]
- Department of Computing and Mathematics [126]
- Department of Computing and Mathematics: Centre for Mathematical Modelling ar
- Department of Computing and Mathematics: Computational and Applied Mathema
- Department of Computing and Mathematics: Image and Sensor Computation Gr

Content Performance							
Pageviews	Unique Pageviews	Avg. Time on Page	Bounce Rate	% Exit	\$ Index		
<b>11,530</b>	<b>9,281</b>	<b>00:01:58</b>	<b>21.86%</b>	<b>54.44%</b>	<b>\$0.00</b>		
% of Site Total: 100.00%	% of Site Total: 100.00%	Site Avg: 00:01:58 (0.00%)	Site Avg: 21.86% (0.00%)	Site Avg: 54.44% (0.00%)	Site Avg: \$0.00 (0.00%)		
Page	Pageviews	Unique Pageviews	Avg. Time on Page	Bounce Rate	% Exit	\$ Index	
1. /e-space/	274	196	00:02:21	32.60%	35.40%	\$0.00	
2. /e-space/submit	189	44	00:00:27	0.00%	0.00%	\$0.00	
3. /e-space/bitstream/2173/12506/1/s...	137	116	00:03:06	0.00%	84.67%	\$0.00	
4. /e-space/bitstream/2173/3518/3/wil...	134	122	00:02:30	0.00%	90.30%	\$0.00	
5. /e-space/bitstream/2173/4228/1/Fo...	129	105	00:01:15	0.00%	81.40%	\$0.00	
6. /e-space/bitstream/2173/3520/3/wil...	126	107	00:04:53	0.00%	84.92%	\$0.00	
7. /e-space/handle/2173/3518	126	106	00:02:03	54.72%	62.70%	\$0.00	
8. /e-space/bitstream/2173/3519/3/wil...	117	104	00:06:00	0.00%	86.32%	\$0.00	
9. /e-space/bitstream/2173/30312/2/l...	89	61	00:00:21	0.00%	68.54%	\$0.00	
10. /e-space/bitstream/2173/14163/1/l...	88	76	00:01:31	0.00%	85.23%	\$0.00	
11. /e-space/bitstream/2173/6991/1/ra...	82	71	00:13:55	1.41%	86.59%	\$0.00	
12. /e-space/bitstream/2173/14186/2/l...	78	74	00:00:36	1.35%	93.59%	\$0.00	
13. /e-space/bitstream/2173/13472/3/b...	71	52	> 00:00:00	0.00%	2.82%	\$0.00	
14. /e-space/bitstream/2173/13472/3/b...	70	51	00:00:08	0.00%	8.57%	\$0.00	
15. /e-space/mydspace	70	26	00:01:25	0.00%	12.86%	\$0.00	
16. /e-space/bitstream/2173/13472/3/b...	69	50	00:01:08	0.00%	37.68%	\$0.00	
17. /e-space/bitstream/2173/13472/3/b...						\$0.00	
18. /e-space/bitstream/2173/13472/3/b...						\$0.00	
19. /e-space/bitstream/2173/23552/1/B...						\$0.00	
20. /e-space/bitstream/2173/5879/1/Ac...						\$0.00	
21. /e-space/bitstream/2173/30302/1/T...						\$0.00	
22. /e-space/bitstream/2173/5879/1/Ac...	64	50	00:00:01	0.00%	7.81%	\$0.00	

• No structure  
• URLs, not items/files

# Analytics API

- Launched April 2009
- Same API as Calendar, Finance, etc.
- Javascript and Java clients provided
- Protocol uses HTTP and XML
- Choose dimensions, metrics, filters, sorting

## Usage Tips

- Prefer fewer distinct queries
- Prefer queries that return fewer rows
- Do some filtering client side
- Do totalling client side

The screenshot shows the Google Analytics Labs Developer's Guide page. At the top, there is a search bar and a navigation menu with links for Home, Docs, FAQ, Articles, Blog, Forum, and Terms. The main content area is divided into several sections:

- Analytics Overview:** Includes a link for "All Articles".
- Data Collection:** Includes links for "Standard Tracking", "Specialized Tracking", "Tracking Reference", "Changelog - ga.js", and "Troubleshooting".
- Data Export API (Labs):** This section is highlighted in green and includes links for "Getting Started", "Authorization", "Protocol", "Java", "Javascript", "Feed Reference", "Dimensions & Metrics", "Libraries & Examples", "Previous Versions", and "Changelog & Issues".
- Website Optimizer (Labs):** Includes links for "Getting Started", "Common Tasks", "Feed Reference", and "FAQ".
- Developer's Guide:** This section contains the main text of the guide, including a "Getting Started" section and a "Getting Started" sub-section. It explains that the API is currently in public beta and provides information on how to use it, including links to "Getting Started", "Quota Policy", "Upgrading versions", "Protocol", "Java", and "JavaScript" guides. It also mentions that the API will remain subject to change and that users should check the "Developer Terms of Service".

# Analytics Examples

## Collection Statistics for School of Biology, Chemistry and Health Science

### Total Visits (All Time)

	Views
School of Biology, Chemistry and Health Science	197
All Items	1145
All Downloads	169

### Total Visits per Month (Last Six Months)

	February 2010	March 2010	April 2010	May 2010	June 2010	July 2010
Collection	2	4	7	1	1	1
Items	42	89	67	68	64	15
Downloads	30	34	19	26	33	3

### Top Item Views (All Time)

	Views
Potential pathogenic aspects of denture plaque ( <a href="http://hdl.handle.net/2173/33333">http://hdl.handle.net/2173/33333</a> ) [view stats]	172
Investigating the fracture resistance and adhesion of DLC films with micro-impact testing ( <a href="http://hdl.handle.net/2173/73196">http://hdl.handle.net/2173/73196</a> ) [view stats]	107
The effect of free and encapsulated OIT on the biodeterioration of plasticised PVC during burial in soil for 20 months ( <a href="http://hdl.handle.net/2173/15172">http://hdl.handle.net/2173/15172</a> ) [view stats]	84
The microbiological origin of fluorescence observed in plaque on dentures during QLF analysis ( <a href="http://hdl.handle.net/2173/15133">http://hdl.handle.net/2173/15133</a> ) [view stats]	77
Comparison of protective effects of aspirin, d-penicillamine and vitamin E against high glucose-mediated toxicity in cultured endothelial cells ( <a href="http://hdl.handle.net/2173/3733">http://hdl.handle.net/2173/3733</a> ) [view stats]	74
Reduced adherence of candida to silane-treated silicone rubber ( <a href="http://hdl.handle.net/2173/15173">http://hdl.handle.net/2173/15173</a> ) [view stats]	72
Development of an in vitro denture plaque biofilm to model denture malodour ( <a href="http://hdl.handle.net/2173/33355">http://hdl.handle.net/2173/33355</a> ) [view stats]	64
The normal cellular prion protein and its possible role in angiogenesis ( <a href="http://hdl.handle.net/2173/36332">http://hdl.handle.net/2173/36332</a> ) [view stats]	51
New VEGF antagonists as possible therapeutic agents in vascular disease ( <a href="http://hdl.handle.net/2173/36572">http://hdl.handle.net/2173/36572</a> ) [view stats]	37

### Top File Downloads (All Time)

	Views
coulthwaite and verran.pdf (Potential pathogenic aspects of denture plaque) [view stats]	122
Coulthwaite & Verran JBR 2008.doc (Development of an in vitro denture plaque biofilm to model denture malodour) [view stats]	42
slevin et al.pdf (Angiogenic oligosaccharides of hyaluronan induce multiple signaling pathways affecting vascular endothelial cell mitogenic and wound healing responses) [view stats]	5

[\[view all\]](#)

## Item Statistics for Potential pathogenic aspects of denture plaque

### Total Visits (All Time)

	Views
Potential pathogenic aspects of denture plaque	172

### File Downloads (All Time)

	Views
coulthwaite and verran.pdf	122

### Total Visits per Month (Last Six Months)

	February 2010	March 2010	April 2010	May 2010	June 2010	July 2010
Item	9	5	4	0	13	7
Downloads	24	15	18	20	27	2

### Top Country Views (All Time)

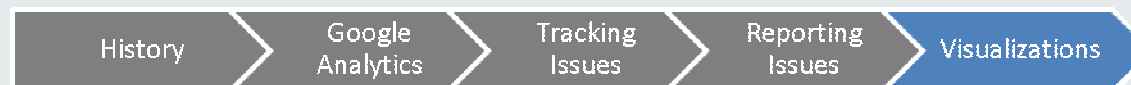
	Views
United Kingdom	92
United States	50
Brazil	23
India	17
Australia	14
Canada	14
Turkey	9
Japan	8
Indonesia	6
Algeria	5

### Top City Views (All Time)

	Views
London, United Kingdom	36
Manchester, United Kingdom	22
Mangalore, India	10
Beverly Hills, United States	7
Leeds, United Kingdom	6
Sao Paulo, Brazil	6
Sydney, Australia	6
Vancouver, Canada	6
(not set), Algeria	5
Ankara, Turkey	5

Total Visits							
	Views						
L - OR2010 Collection 1 - 10673/229	93						
Total Visits per Month							
	December 2009	January 2010	February 2010	March 2010	April 2010	May 2010	June 2010
L - OR2010 Collection 1 10673/229	0	0	0	0	0	0	93
Top Country Views							
	Views						
New Zealand	21						
United States of America	14						
United Kingdom	8						
Mexico	5						
Brazil	4						
France	4						
Tyrgyz Republic	4						
Switzerland	3						
Iceland	3						

## Google Visualizations





# Chart Tools / Interactive Tools

- Simple charts are static images
- Interactive charts use Javascript / SVG / Flash
- Simple charts have data limits (2K GET / 16K POST)
- Can be used with any data source
- Works well with Analytics exports

For more information on how to use the visualization API:

[http://code.google.com/apis/visualization/documentation/using\\_overview.html](http://code.google.com/apis/visualization/documentation/using_overview.html)

## Overview

Here are the key steps for embedding a visualization in your page. You'll find a code snippet demonstrating all these steps below, followed by detailed information about each step.

1. **Add a <div> to your page.** Your page must have an HTML element that will hold your visualization; typically you'll use a <div> in your page.
2. **Load your libraries.** A visualization requires three libraries to be included or loaded on the page: the Google AJAX API; the Google Visualization API core; and a library for each type of visualization.
3. **Prepare your data.** You'll need to prepare the data to visualize; this means either specifying the data yourself in code, or querying a remote site for data.
4. **Create an instance of your visualization.** Instantiate your visualization by calling its constructor and passing in a reference to your <div> element.
5. **Draw your visualization.** Call `draw()` on your visualization and pass in your data to draw your visualization on the page.
6. There are various other **optional steps** you can take, such as handling user events or specifying visualization options. These are covered at the end of this page.

Here's a simple example of a page that loads and displays a [pie chart](#). The resulting chart is shown below the snippet.

```
<html>
<head>
  <!--Load the AJAX API-->
  <script type="text/javascript" src="http://www.google.com/jsapi"></script>
  <script type="text/javascript">

    // Load the Visualization API and the piechart package.
    google.load('visualization', '1', {'packages':['piechart']});

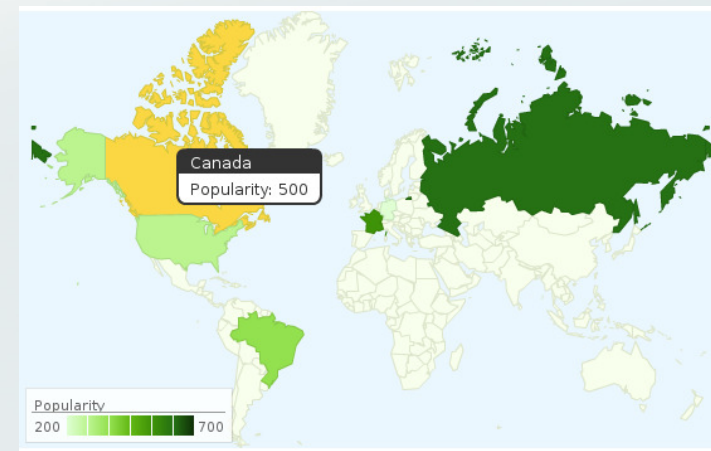
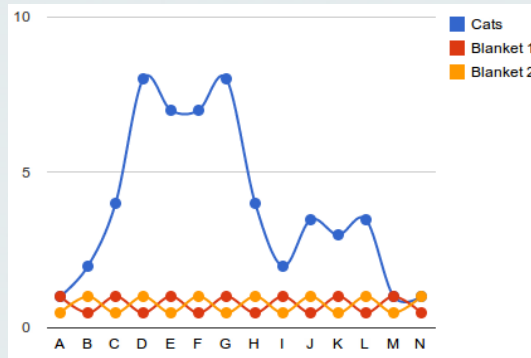
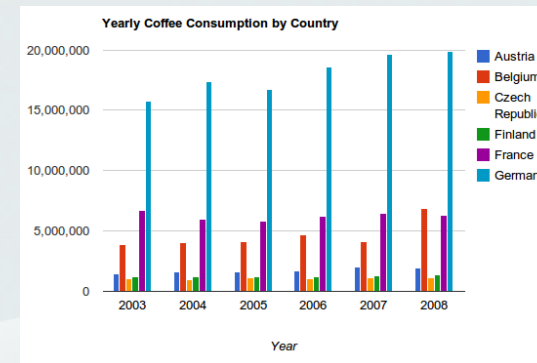
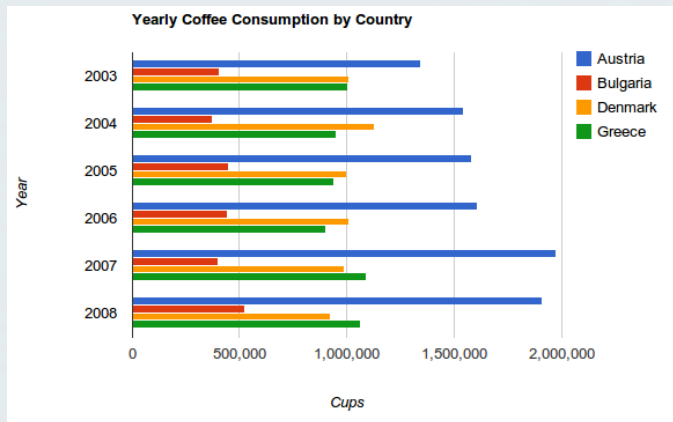
    // Set a callback to run when the Google Visualization API is loaded.
    google.setOnLoadCallback(drawChart);

    // Callback that creates and populates a data table,
    // instantiates the pie chart, passes in the data and
    // draws it.
    function drawChart() {

      // Create our data table.
      var data = new google.visualization.DataTable();
      data.addColumn('string', 'Task');
      data.addColumn('number', 'Hours per Day');
      data.addRows([
        ['Work', 11],
        ['Eat', 2],
        ['Commute', 2],
        ['Watch TV', 2],
        ['Sleep', 7]
      ]);

      // Instantiate and draw our chart, passing in some options.
      var chart = new google.visualization.PieChart(document.getElementById('chart_div'));
      chart.draw(data, {width: 400, height: 240, is3D: true, title: 'My Daily Activities'});
    }
  </script>
</head>
```

# Useful Charts



See more at the gallery:

<http://code.google.com/apis/visualization/documentation/gallery.html>

<http://code.google.com/apis/ajax/playground/>

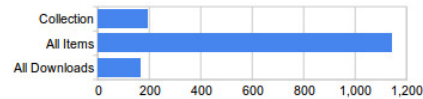


# Analytics and Charts

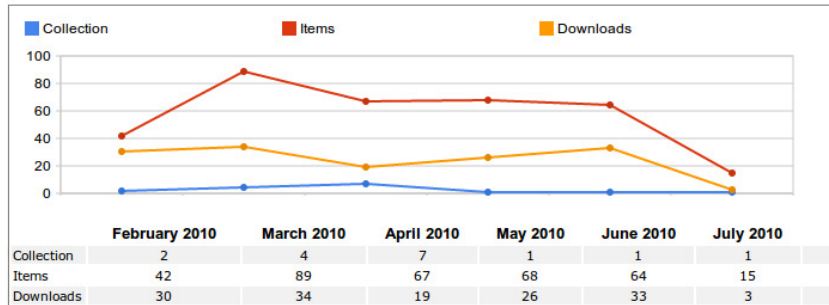
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Comparison of protective effects of aspirin, d-	

### Top File Downloads (All Time)

	Views
coulthwaite and verran.pdf (Potential pathogenic aspects of denture plaque) [view stats]	122
Coulthwaite & Verran JBR 2008.doc (Development of an in vitro denture plaque biofilm to model denture malodour) [view stats]	42
slevin et al.pdf (Angiogenic oligosaccharides of hyaluronan induce multiple signaling pathways affecting vascular endothelial cell mitogenic and wound healing responses) [view stats]	5

## Item Statistics for Potential pathogenic aspects of denture plaque

### Total Visits (All Time)

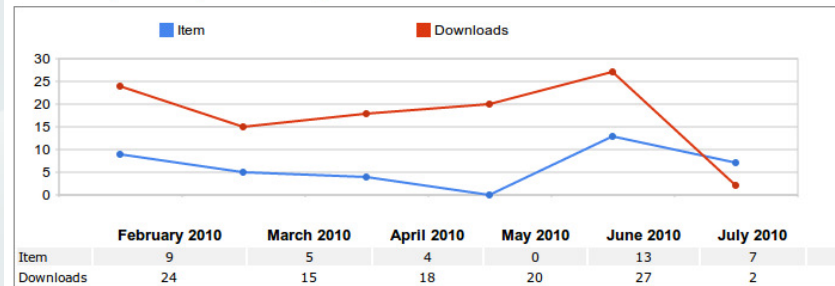
	Views
Potential pathogenic aspects of denture plaque	172



### File Downloads (All Time)

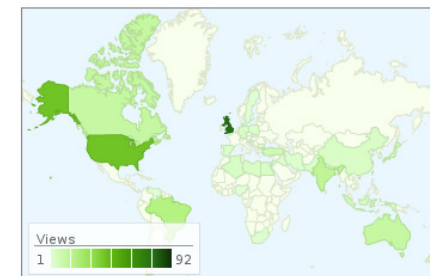
	Views
coulthwaite and verran.pdf	122

### Total Visits per Month (Last Six Months)



### Top Country Views (All Time)

	Views
United Kingdom	92
United States	50
Brazil	23
India	17
Australia	14
Canada	14
Turkey	9
Japan	8
Indonesia	6
Algeria	5



### Top City Views (All Time)

	Views
London, United Kingdom	36

<http://bit.ly/aKhX6S>

<http://bit.ly/9t8r8H>



**“Whenever you can, count.”**

*-- Sir Francis Galton*

**Graham Triggs**

*Technical Architect*

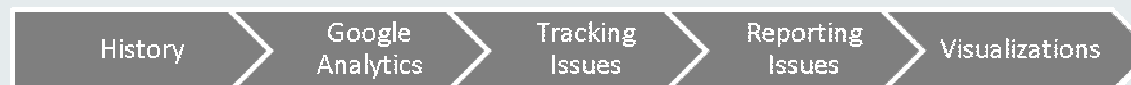
Open Repository

W: <http://www.openrepository.com/>

E: [graham@biomedcentral.com](mailto:graham@biomedcentral.com)

**Thank You**

Any questions?



# I'm Glad You Asked...



# Cutting a Round Cake on Scientific Principles

*Correlation and Application of Statistics to Problems of Heredity* 125

Sir Francis' solution. Broken lines show intended cuts; ordinary straight lines the cuts that have been made. The segments are kept together by an elastic band.

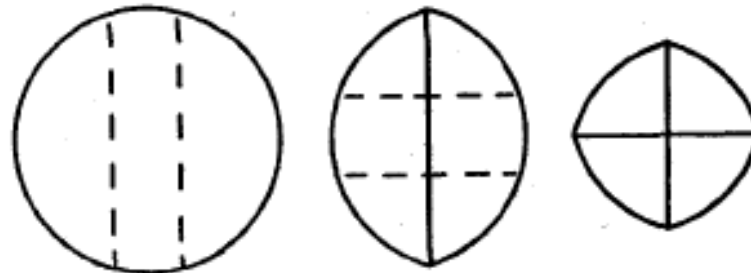


Fig. 13.

Always assuming, which I feel some doubt about, that both consumers of this cake ate their daily allotment of the circular rind, the method leaves an unconscionable amount of dry rind (some  $\frac{1}{4}$ th) for the third day's consumption! I rather suspect that the cook would have been instructed by the lady of the house to bake in rectangular tins in future.