

MySQL Howto: Beginner's Guide

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What is MySQL?

- Relational database

EMPLOYEE	FNAME	MINIT	LNAME	SSN	BDATE	ADDRESS	SEX	SALARY	SUPERSSN	DNO
	John		Smith	123456789	1965-01-09	731 Fondren, Houston, TX	M	30000	333445555	5
	Franklin		Wong	333445555	1955-12-08	638 Voss, Houston, TX	M	40000	888665555	5
	Alicia			999887777	1968-01-19	3321 Castle, Spring, TX	F	25000	987654321	4
	Jennifer		Wallace	987654321	1941-06-20	291 Berry, Bellaire, TX	F	43000	888665555	4
	Ramesh		Narayan	686884444	1962-09-15	975 Fire Oak, Humble, TX	M	38000	333445555	5
	Joyce		English	453453453	1972-07-31	5631 Rice, Houston, TX	F	25000	333445555	5
	Almad		Jabber	987987987	1969-03-29	980 Dallas, Houston, TX	M	25000	987654321	4
	James		Borg	888665555	1937-11-10	450 Stone, Houston, TX	M	55000	null	1

DEPT LOCATIONS	DNUMBER	DLOCATION
	5	Houston
	4	Stafford
	5	Bellaire
	4	Sugarland

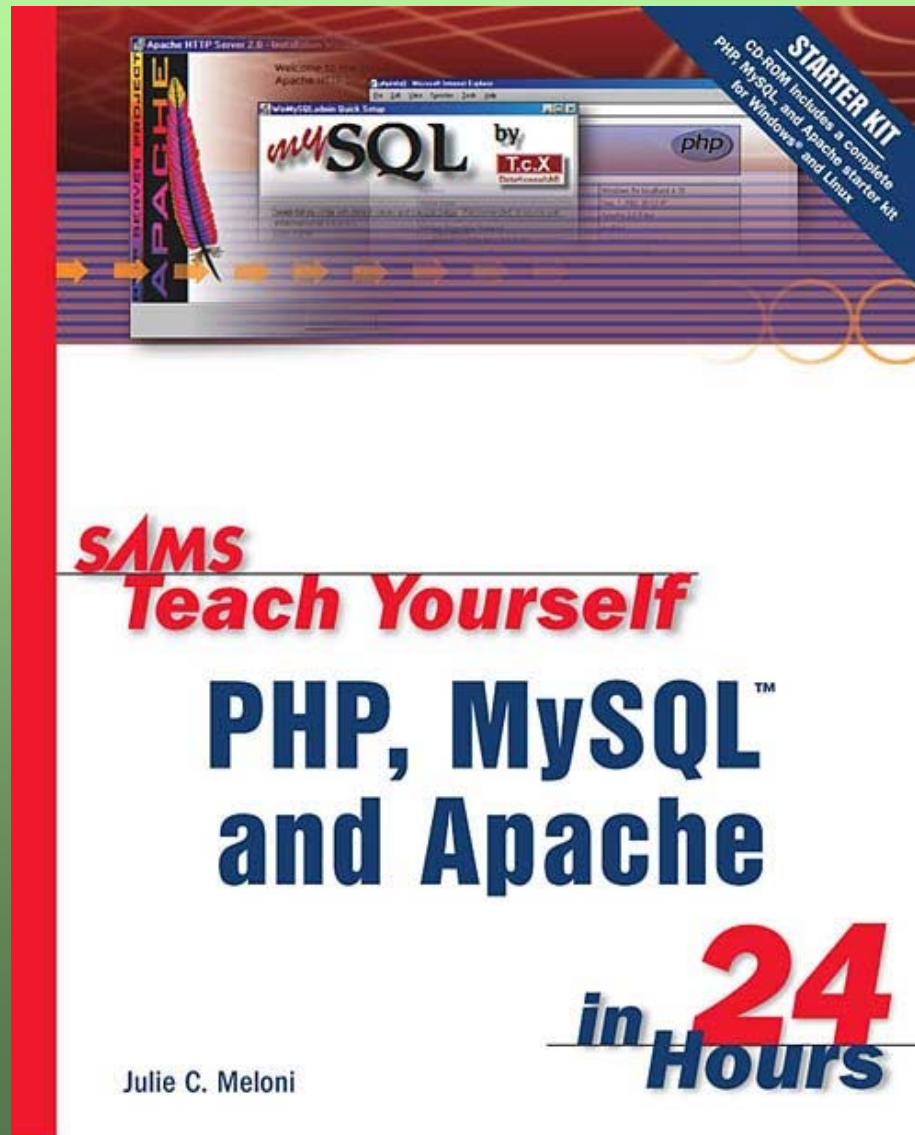
DEPARTMENT	DNAME	DNUMBER	MGRSSN	MGRSTARTDATE
	Research	5	333445555	1988-06-22
	Administration	4	987654321	1985-01-01
	Headquarters	1	888665555	1981-06-19

WORKS_ON	ESSN	PNO	HOURS
	123456789	1	32.5
	123456789	2	7.5
	686884444	3	40.0
	453453453	1	20.0
	453453453	2	20.0
	333445555	2	10.0
	333445555	3	10.0
	333445555	10	10.0
	333445555	20	10.0
	999887777	30	30.0
	999887777	10	10.0
	987987987	10	35.0
	987987987	30	5.0
	987654321	30	20.0
	987654321	20	15.0
	888665555	20	null

PROJECT	PNAME	DNUMBER	PLOCATION	DNUM
	ProductX	1	Bellaire	5
	ProductY	2	Sugarland	5
	ProductZ	3	Houston	5
	Computerization	10	Stafford	4
	Reorganization	20	Houston	1
	Newbenefits	30	Stafford	4

DEPENDENT	ESSN	DEPENDENT_NAME	SEX	BDATE	RELATIONSHIP
	333445555	Alice	F	1986-04-05	DAUGHTER
	333445555	Theodore	M	1983-10-25	SON
	333445555	Joy	F	1958-05-03	SPOUSE
	987654321	Abner	M	1942-02-28	SPOUSE
	123456789	Michael	M	1988-01-04	SON
	123456789	Alice	F	1988-12-30	DAUGHTER
	123456789	Elizabeth	F	1967-05-05	SPOUSE

Getting Started



Getting MySQL

- <http://www.mysql.com/>

The screenshot shows the MySQL website homepage in a Mozilla Firefox browser window. The browser title is "MySQL AB :: The world's most popular open source database - Mozilla Firefox". The address bar shows "http://www.mysql.com/". The page features the MySQL logo and the tagline "The world's most popular open source database". A navigation menu includes links for Home, Products, Services, Partners & Solutions, Community, Customers, Why MySQL?, News & Events, About, and How to Buy. A "GET STARTED" sidebar lists links for MySQL Enterprise 30-day Trial, Customer Login, Documentation, Free Web Seminars, Success Stories, and Contact MySQL Sales. A central banner promotes the "Fall 2007 Release" of MySQL Enterprise, featuring a screenshot of the MySQL Enterprise interface and a "Try the new Replication Monitor and more" link. Below the banner is a "DISCOVER" section with links to OEM/ISV Corner, CIO Corner, White Papers, TCO Calculator, and DBA Calculator. A "TEST DRIVE" section highlights the "MySQL Enterprise 30-day Trial Offer" with a "Learn more" link. A "LEARN" section lists "Free Web Seminars" and "MySQL Training" events. A "WHAT'S NEW" section includes "News & Events" and a quote from Chris DiBona, Open Source Programs Manager at Google Inc., praising MySQL's performance and reliability.

MySQL AB :: The world's most popular open source database - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.mysql.com/

MySQL. The world's most popular open source database

Contact a MySQL Sales Rep Today

Search

Login | Register

Home Products Services Partners & Solutions Community Customers Why MySQL? News & Events About How to Buy

GET STARTED

- ▶ MySQL Enterprise 30-day Trial
- ▶ MySQL Enterprise Customer Login
- ▶ Documentation
- ▶ Free Web Seminars
- ▶ Success Stories
- ▶ Contact MySQL Sales

MySQL Enterprise

Fall 2007 Release

Try the new Replication Monitor and more »

DISCOVER

- ▶ OEM/ISV Corner
- ▶ CIO Corner
- ▶ White Papers
- ▶ TCO Calculator
- ▶ DBA Calculator

Learn how MySQL is used in:

- ▶ Embedded Applications
- ▶ Small and Medium Businesses
- ▶ Custom Applications
- ▶ Data Warehousing
- ▶ Web
- ▶ Retail
- ▶ Service Providers
- ▶ Telecom
- ▶ Travel

TEST DRIVE

MySQL Enterprise

30-day Trial Offer

[Learn more]

LEARN

Free Web Seminars

- ▶ What's New in the MySQL Enterprise Fall 2007 Release? Thu, Oct 18
- ▶ High Performance Low Cost Data Warehousing with MySQL and Infobright Tue, Oct 23

More Web Seminars

MySQL Training

- ▶ MySQL for Database Administrators Nov 19: Berlin Dec 03: Villemomble Jan 21: Tokyo
- ▶ MySQL for Developers Nov 05: Lyon Nov 19: Paris Dec 10: Paris

WHAT'S NEW

News & Events

- ▶ F-Secure Manages Security Services with MySQL Enterprise Unlimited
- ▶ NET-A-PORTER.COM Standardizes on MySQL Enterprise to Manage & Support its Rapid Growth
- ▶ More News & Events

Google

"Google runs critical business systems with MySQL and InnoDB. The systems require 24x7 operation with minimal downtime. The systems support large OLTP and reporting workloads. We are very happy with the scalability, reliability and manageability of this software."

Chris DiBona, Open Source Programs Manager, Google Inc.

Done

Getting MySQL

The screenshot shows a Mozilla Firefox browser window displaying the MySQL Downloads page. The address bar shows the URL `http://dev.mysql.com/downloads/`. The page features the MySQL logo and the tagline "The world's most popular open source database". A navigation menu includes links for Home, Products, Services, Partners & Solutions, Community, Customers, News & Events, About, Why MySQL?, and How to Buy. A sidebar on the left lists various download categories and resources. The main content area is titled "MySQL Downloads" and contains a table comparing user needs with MySQL features.

MySQL Downloads

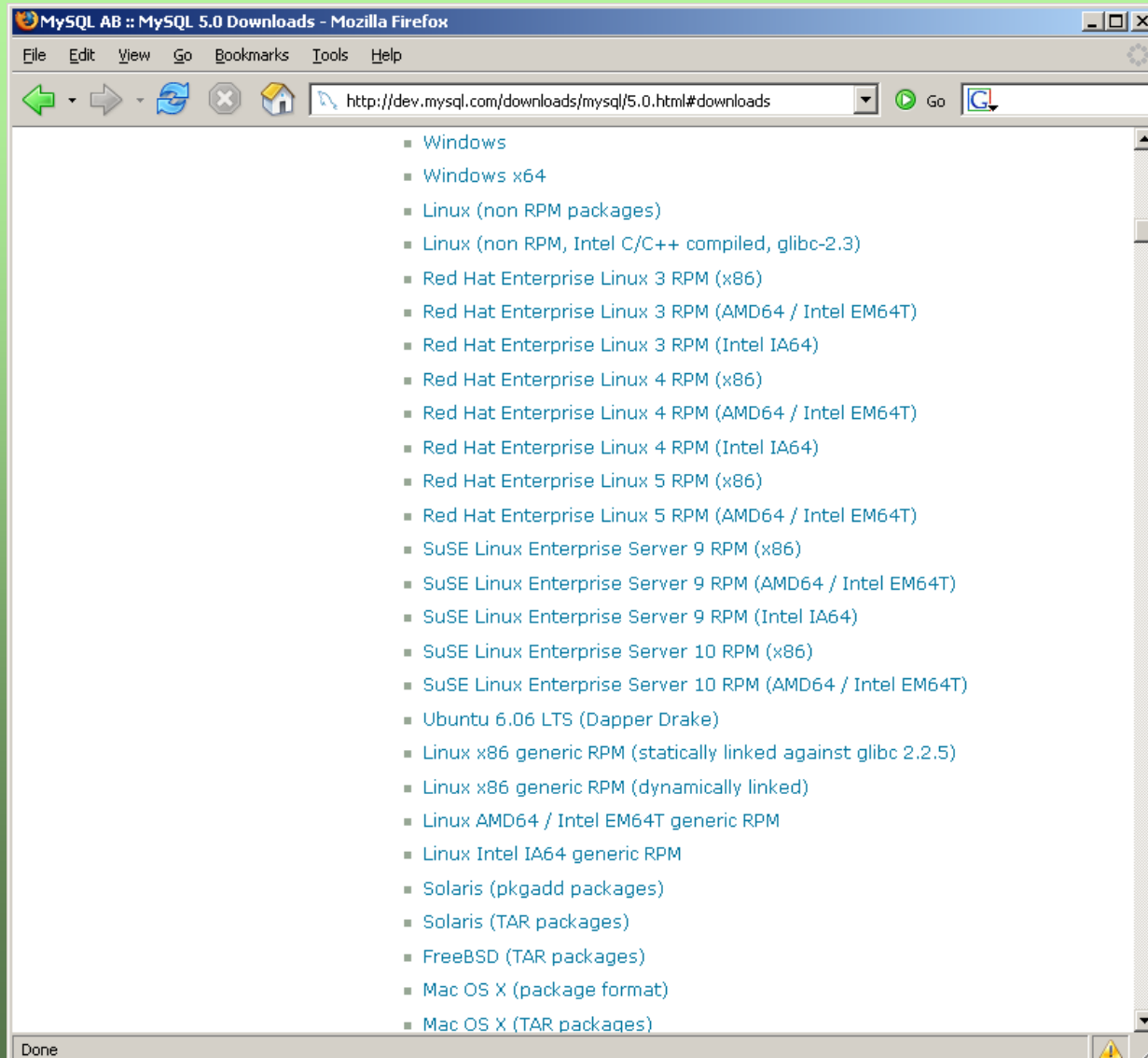
For users or organizations looking to maintain their own solutions. I have:	For businesses, public sector institutions and users looking for the highest reliability in software and services. I desire:
My own method of keeping my systems up to date and am comfortable upgrading and configuring MySQL.	Automated notifications and predictable releases of well-tested updates and upgrades.
Time to monitor and adjust the MySQL settings that will tune, scale and maintain performance.	Proactive, visual notification and advice on maintaining optimal performance .
Experience with database security so that I know when a security breach has occurred.	Continuous monitoring of systems so that I can be alerted to unplanned security changes and vulnerabilities .
Experience designing, setting-up and monitoring the status of MySQL replication.	Replication status monitoring so that I can improve replication design and performance.
Time to identify and resolve technical issues for myself and others.	Fast resolution and committed response times to avoid loss of revenue or critical application access.
Time to design and tune application code, database schemas and dynamic queries for	Access to the most experienced technicians

Getting MySQL

The screenshot shows a Mozilla Firefox browser window with the address bar displaying `http://dev.mysql.com/downloads/`. The page content is as follows:

- Left Sidebar:**
 - Do you have a MySQL Application for end-users? Grow your business today! Become a MySQL Technology Partner (FREE) >
 - Learn about new MySQL releases, technical articles, events and more. [Subscribe Now >](#)
 - Ads by Google:
 - [Free SQL Server Download](#): Real-time & Historical Performance Monitoring Across Users and Apps! [www.Teratrax.com](#)
 - [Professional Development](#): Expert Development Services by FileMaker Pro Gurus [www.7crm.com.au](#)
 - [PHP MySQL site in minutes](#): Create PHP code for any MySQL database. No programming. [www.Ylinc.com/forums/...](#)
- Main Content:**
 - MySQL Community Server**: [Download >](#)
 - MySQL Enterprise**: [Learn More >>](#), [Free Trial >>](#)
 - When it comes to using MySQL, you have choices. Use this grid to help you determine which version **best meets your needs**.
 - MySQL Community Server**
 - MySQL 5** **Current Release (Recommended):** MySQL 5.0 -- Generally Available (GA) release for production use
 - Upcoming Releases:**
 - MySQL 5.1 -- Release Candidate release, Test new features early!
 - MySQL 6.0 -- Alpha - Falcon Preview **New!**
 - Snapshots -- source code snapshots of the development trees
 - Older Releases:**
 - MySQL 4.1 -- Previous GA release
 - [Archives of Older Releases](#)
 - MySQL Cluster**
 - MySQL Cluster is generally available in [version 5.0 of the MySQL database server](#). Individual MySQL Cluster components are available as stand-alone downloads on supported platforms.

Getting MySQL



Getting MySQL

The screenshot shows a Mozilla Firefox browser window titled "MySQL AB :: MySQL 5.0 Downloads - Mozilla Firefox". The address bar contains the URL "http://dev.mysql.com/downloads/mysql/5.0.html#downloads". The page content is organized into three main sections: "Windows downloads", "Windows x64 downloads", and "Linux (non RPM packages) downloads". Each section lists three download options: "Essentials", "ZIP/Setup.EXE", and "Without installer". Each option includes the version number (5.0.45), the file size, a "Pick a mirror" link, and an MD5 hash. The "Without installer" options also include a "Signature" link. The status bar at the bottom of the browser window shows "Done" and a warning icon.

Platform	Download Option	Version	Size	Link	MD5 Hash
Windows	Windows Essentials (x86)	5.0.45	22.9M	Pick a mirror	9efd5d841174b1476a317e94becf8786
	Windows ZIP/Setup.EXE (x86)	5.0.45	42.4M	Pick a mirror	1566ff960b22cda4903e03d4f6cfa205 Signature
	Without installer (unzip in C:\)	5.0.45	50.0M	Pick a mirror	c40ba57fe2ecb965f9ca88897b6e7d8b Signature
Windows x64	Windows Essentials (AMD64 / Intel EM64T)	5.0.45	28.0M	Pick a mirror	e60bdd8c20cf5867040900b679a7540b
	Windows ZIP/Setup.EXE (AMD64 / Intel EM64T)	5.0.45	51.7M	Pick a mirror	67969545346b408b176939facd958e72 Signature
	Without installer (AMD64 / Intel EM64T)	5.0.45	61.9M	Pick a mirror	888aa6f6e99a021b1a5747ee86efef6a Signature
Linux (non RPM packages)	Linux (x86, glibc-2.2, "standard" is static)	5.0.45	75.6M	Pick a mirror	3cb219515c1bc7c39b1f690acb1b63b1 Signature

Getting MySQL

MySQL AB :: MySQL 5.0 Downloads - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://dev.mysql.com/downloads/mysql/5.0.html#source

Source downloads

Note that in the more recent MySQL 5.0 and 5.1 releases, Windows binaries are built from the same source as the Unix/Linux source TAR.

Compressed GNU TAR archive (tar.gz)	5.0.45	23.3M	Pick a mirror
MD5: a2a1c5a82bb22b45ab76a8ecab94e10d Signature			
Source RPM	5.0.45-0	23.1M	Pick a mirror
MD5: 3f3de00da9ab01ad0cd7a33bec265455			
Generic Source RPM	5.0.45-0	23.1M	Pick a mirror
MD5: 8ca707f2bbe0ef33744a32161d41dd8			
Red Hat Enterprise Linux 4	5.0.45-0	23.1M	Pick a mirror
MD5: 827fcc8de7928e95b3e1ea6b027507ce			
Red Hat Enterprise Linux 5	5.0.45-0	23.2M	Pick a mirror
MD5: 5aa6c7120cdf1d93a602f4ad691e667			
Red Hat Enterprise Linux 3	5.0.45-0	23.1M	Pick a mirror
MD5: 86922053e9d7fc4e716ca90095221978			
SuSE Linux Enterprise Server 9	5.0.45-0	23.1M	Pick a mirror
MD5: ea76feaf5e0517b46af39ccf974f5deb			
Windows Source (zip)	5.0.45	24.0M	Pick a mirror
MD5: 8f09843929114c6c4e576322bbde4c44 Signature			
Windows Source (tar.gz)	5.0.45	20.6M	Pick a mirror
MD5: 02f97de162777ddf3f194a8344e667a3 Signature			

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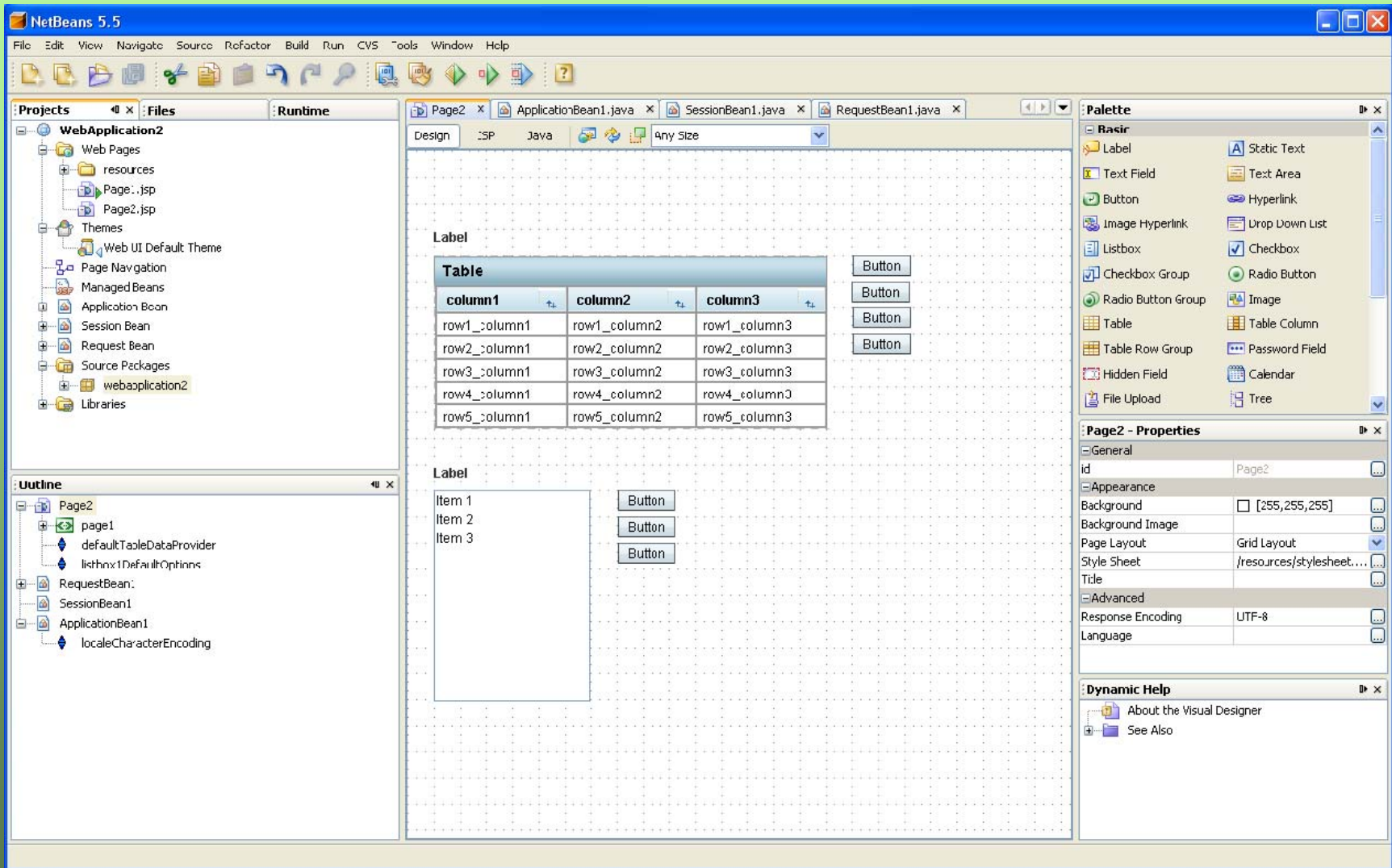
Done

NetBeans IDE

• <http://www.netbeans.org/>

The screenshot shows the NetBeans website in a Mozilla Firefox browser window. The browser title is "Welcome to NetBeans - Mozilla Firefox". The address bar shows "http://www.netbeans.org/". The website has a navigation menu with "Home", "Products", "Plugins", "Docs & Support", "Community", and "Partners". The main content area features a large banner for "NetBeans IDE 5.5.1" with a "Download NetBeans IDE" button and a "GET FREE CD" button. To the right of the banner is a "NetBeans 6.0 Beta" logo with the tagline "The only IDE you need". Below the banner, there are sections for "NetBeans IDE Add-ons" (including Mobility Pack, Visual Web Pack, Enterprise Pack, Profiler, and C/C++ Pack), "NetBeans Software Framework" (including NetBeans Platform), "Featured Partner: CollabNet", "Featured News" (with links to podcast, translation, plugins, video, and portal pack), and "Making the Most of NetBeans" (with links to EJB 3.0 application, PIM browser, and login screen). The footer includes logos for OpenJDK, Open Source App Server, and Open Source Mobile & Embedded, along with "See All Partners" and "See All News" links.

NetBeans IDE



JDBC MySQL Driver

The screenshot shows a Mozilla Firefox browser window with the address bar displaying `http://dev.mysql.com/downloads/connector/j/5.1.html`. The page title is "Download Connector/J 5.1". The left sidebar contains a navigation menu with categories: Downloads, Connectors, Archives, and Mirrors. Under "Connectors", the "Connector/J" sub-menu is expanded, showing versions 5.1, 5.0, 3.1, and 3.0. The main content area is titled "Download Connector/J 5.1" and contains the following text:

MySQL Connector/J is the official JDBC driver for MySQL. Online documentation for Connector/J can be found from [here](#).

Connector/J 5.1 includes support for JDBC-4.0 functionality, including:

- Ease-of-development features including auto-registration with the DriverManager via the service provider mechanism, standardized Connection validity checks and categorized SQLExceptions based on recoverability/retry-ability and class of the underlying error.
- Unwrapping to interfaces that include vendor extensions
- Support for XML processing via JAXP interfaces to DOM, SAX and StAX
- Support for setting per-connection client information (which can be viewed in the comments section of a query via "SHOW PROCESSLIST" on a MySQL server, or can be extended to support custom persistence of the information via a public interface)
- Support for JDBC-4.0 NCHAR, NVARCHAR and NCLOB types

NOTE: By downloading the software from this page, you acknowledge that the software available from here is licensed under the GPL. We advise that you review the [GPL](#) before downloading.

If you need commercial, non-GPL, licenses, you can order them [online](#).

MySQL Connector/J is the official JDBC driver for MySQL. On this page are downloads of the current generally available (GA) release version. Online documentation for Connector/J can be found from [here](#).

We suggest that you use the [MD5 checksums](#) and [GnuPG signatures](#) to verify the integrity of the packages you download.

Downloads

Source and Binaries (tar.gz)	5.1.5	7.8M	Pick a mirror
	MD5: 85289f74093a2b165d42f5ac38850d18 Signature		
Source and Binaries (zip)	5.1.5	8.0M	Pick a mirror
	MD5: b207959597d8974545ef99d5a2cee662 Signature		

The status bar at the bottom of the browser window shows "Done".

JDBC

Trail: JDBC(TM) Database Access (The Java™ Tutorials) - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://java.sun.com/docs/books/tutorial/jdbc/ Google

Trail: JDBC(TM) Database Ac...

The Java™ Tutorials Download the JDK Search the Tutorials

« Previous • Trail • Next » Home Page

Trail: JDBC(TM) Database Access

The JDBC™ API was designed to keep simple things simple. This means that the JDBC makes everyday database tasks easy. This trail walks you through examples of using JDBC to execute common SQL statements, and perform other objectives common to database applications.

This trail is divided into these lessons:

- [JDBC Introduction](#) Lists JDBC features, describes JDBC Architecture and reviews SQL commands and Relational Database concepts.
- [JDBC Basics](#) covers the JDBC API, which is included in the Java™ SE 6 release.

By the end of the first lesson, you will know how to use the basic JDBC API to create tables, insert values into them, query the tables, retrieve the results of the queries, and update the tables. In this process, you will learn how to use simple statements and prepared statements, and you will see an example of a stored procedure. You will also learn how to perform transactions and how to catch exceptions and warnings.

« Previous • TOC • Next »

Problems with the examples? Try [Compiling and Running the Examples: FAQs](#).
Complaints? Compliments? Suggestions? [Give us your feedback](#).

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Done

Using JDBC

- Register & instantiate driver
- Database connection: DriverManager class
- Send SQL statement: Statement object
- Retrieve results: ResultSet object

Sample Code

- <http://java.sun.com/docs/books/tutorial/jdbc/overview/>

```
Connection con = DriverManager.getConnection
    ( "jdbc:mysql:wombat", "myLogin", "myPassword");

Statement stmt = con.createStatement();
ResultSet rs = stmt.executeQuery("SELECT a, b, c FROM Table1");
while (rs.next()) {
    int x = rs.getInt("a");
    String s = rs.getString("b");
    float f = rs.getFloat("c");
}
```

Sample Application

Displaying Query Results

```
SELECT * FROM employee
```

Submit Query

FNAME	MINIT	LNAME	SSN	BDATE	ADDRESS	SEX	SALARY	SUPERSSN	DNO
JAMES	E	BORG	888665555	10/11/1937	450 STO...	M	25000		1
FRANKLIN	T	WONG	333445555	8/12/1955	638 VOSS...	M	40000	888665555	5
RAMESH	K	NARAYAN	666884444	15/09/1962	975 FIRE ...	M	38000	333445555	5
JOHN	B	SMITH	123456789	9/01/1965	731 FON...	M	30000	333445555	5
JENNIFER	S	WALLACE	987654321	20/06/1941	291 BER...	F	43000	888665555	4
ALICIA	J	ZELAYA	999887777	19/07/1968	3321 CAS...	F	25000	987654321	4
JOYCE	A	ENGLISH	453453453	31/07/1972	5631 RIC...	F	25000	333445555	5
AHMAD	V	JABBAR	987987987	29/03/1969	980 DALL...	M	25000	987654321	4

Displaying Query Results

```
SELECT fname, lname  
from employee  
where not exists (select * from dependent where ssn = essn)
```

Submit Query

FNAME	LNAME
JAMES	BORG
RAMESH	NARAYAN
ALICIA	ZELAYA
JOYCE	ENGLISH
AHMAD	JABBAR

Other Platforms

- LAMP
 - Linux
 - <http://distrowatch.com/>
 - Apache web server, Tomcat
 - <http://www.apache.org/>
 - MySQL
 - <http://www.mysql.com/>
 - PHP, Perl, Python
 - <http://www.php.net/>
 - <http://www.perl.org/>
 - <http://www.python.org/>

Further Information

MySQL

*The definitive guide to using, programming,
and administering MySQL 4*

Paul DuBois

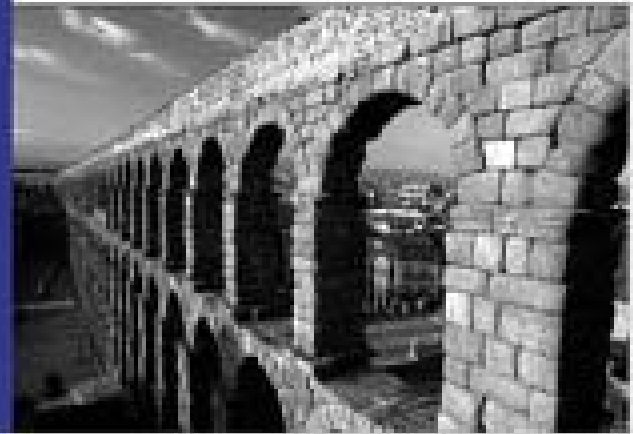
Second Edition



PHP and MySQL Web Development

Robin Williams
LARRY HARTMAN

Second Edition



Thank you.

Questions?