

# Tutorial #2

## MySQL Datastore

CSP 584 – Enterprise Web Application

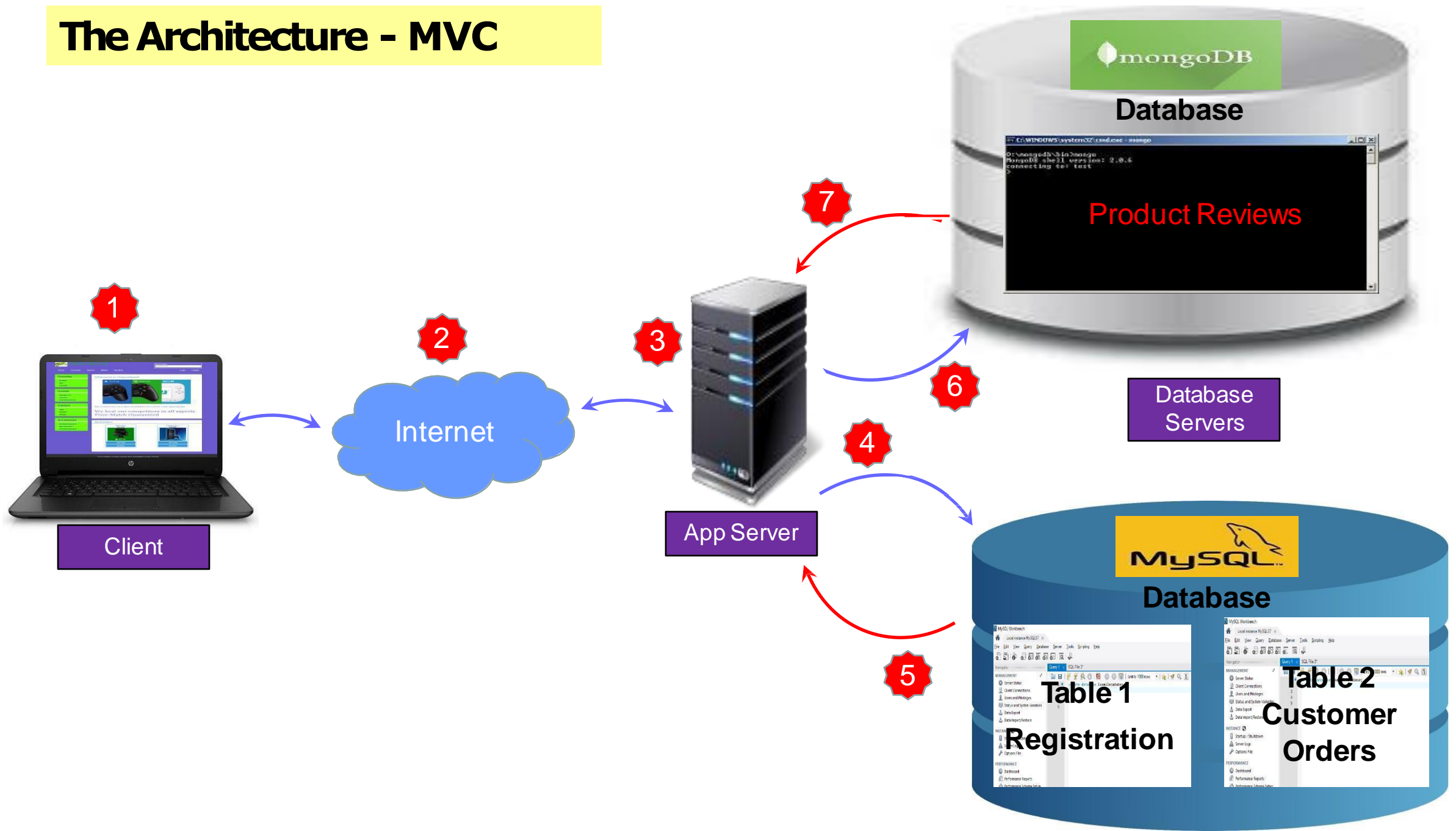
Dr. Atef Bader

Illinois Institute of Technology

TA : Prakhar Nag

[pnag@hawk.iit.edu](mailto:pnag@hawk.iit.edu)

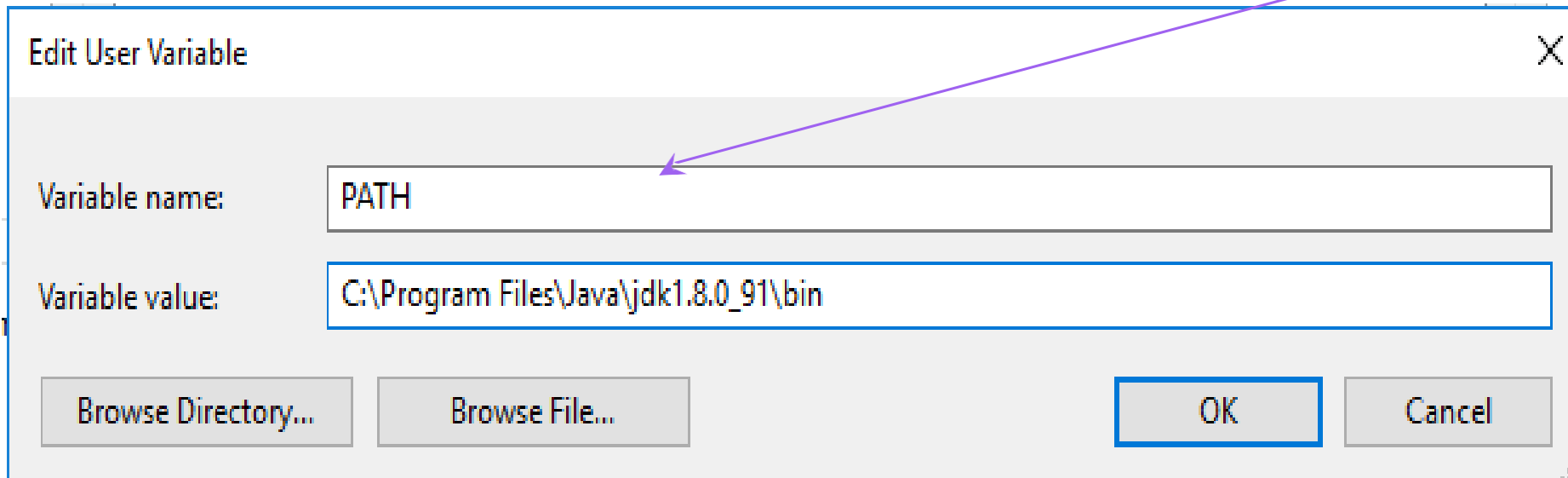
# The Architecture - MVC




# Pre-Requisites:

- Install Java latest version into your system.
- Set the PATH system variable in your local system under Control Panel → system → Advanced system settings → Click on Advanced Tab → Environment variables.

Example PATH  
variable



# Platforms supported in MySQL

[General Availability \(GA\) Releases](#)[Archives](#)

## MySQL Community Server 8.0.34

Select Version:

8.0.34


Select Operating System...

- ✓ Microsoft Windows
- Ubuntu Linux
- Debian Linux
- SUSE Linux Enterprise Server
- Red Hat Enterprise Linux / Oracle Linux
- Fedora
- Linux - Generic
- Oracle Solaris
- macOS
- Source Code

Starting with MySQL 5.6 the MySQL Installer package replaces the standalone MSI packages.

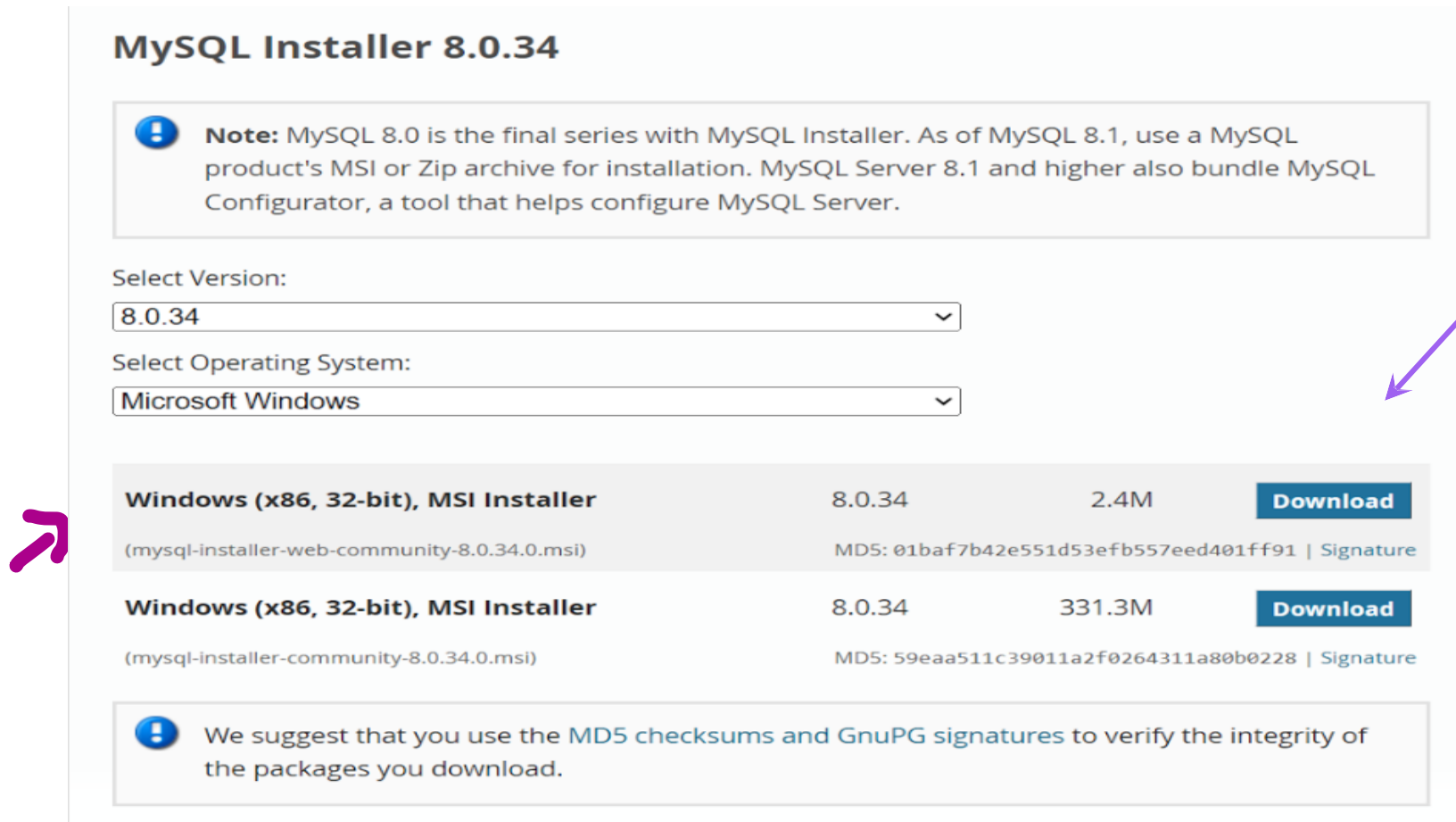
**Windows (x86, 32 & 64-bit), MySQL Installer MSI**

[Go to Download Page >](#)



# Download and Install MySQL Server

- Download the MySQL installer from <https://dev.mysql.com/downloads/installer/>
- (Choose the my-installer-web- community file)



**MySQL Installer 8.0.34**

**Note:** MySQL 8.0 is the final series with MySQL Installer. As of MySQL 8.1, use a MySQL product's MSI or Zip archive for installation. MySQL Server 8.1 and higher also bundle MySQL Configurator, a tool that helps configure MySQL Server.

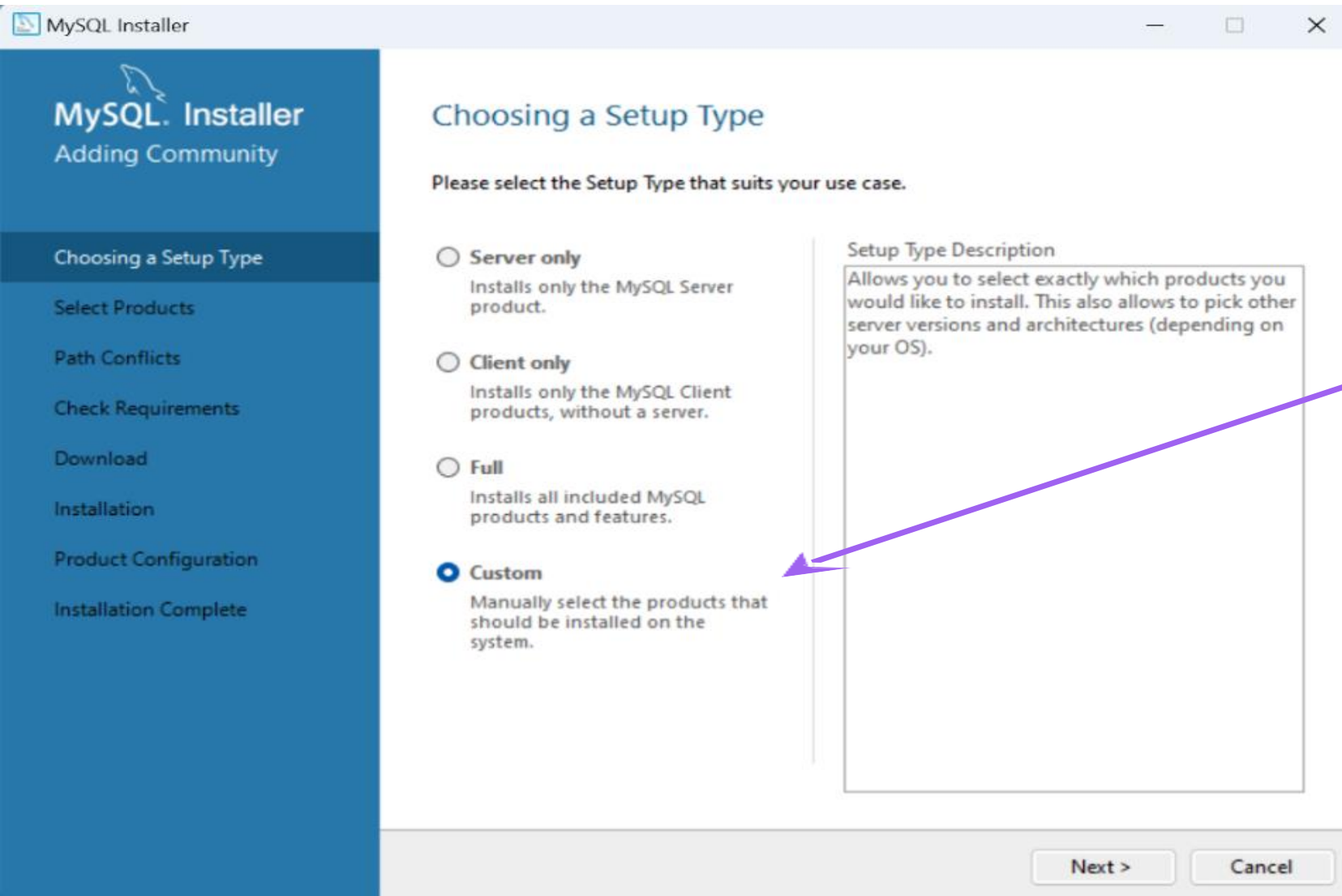
Select Version:  
8.0.34

Select Operating System:  
Microsoft Windows

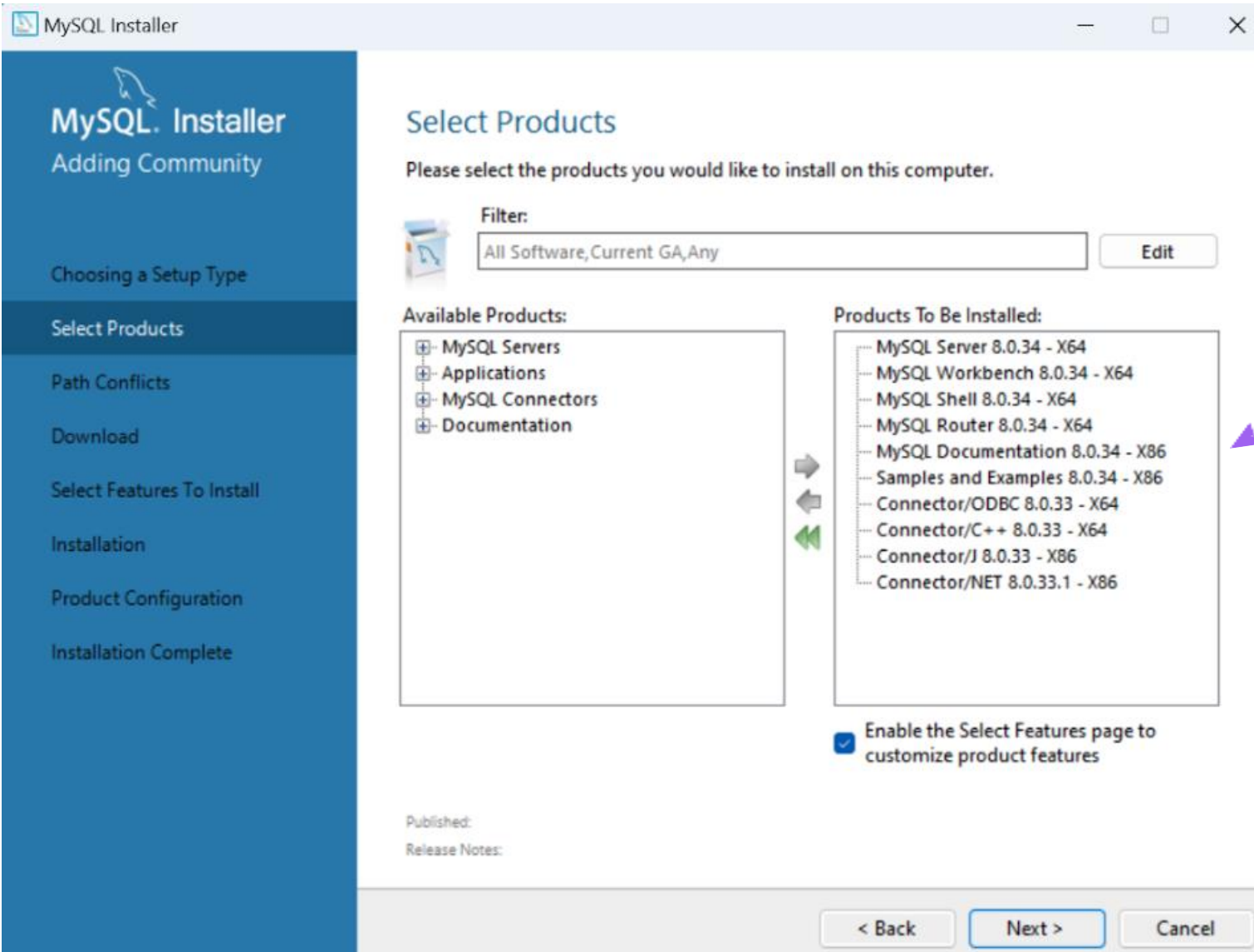
<b>Windows (x86, 32-bit), MSI Installer</b> (mysql-installer-web-community-8.0.34.0.msi)	8.0.34	2.4M	<b>Download</b>
<b>Windows (x86, 32-bit), MSI Installer</b> (mysql-installer-community-8.0.34.0.msi)	8.0.34	331.3M	<b>Download</b>

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

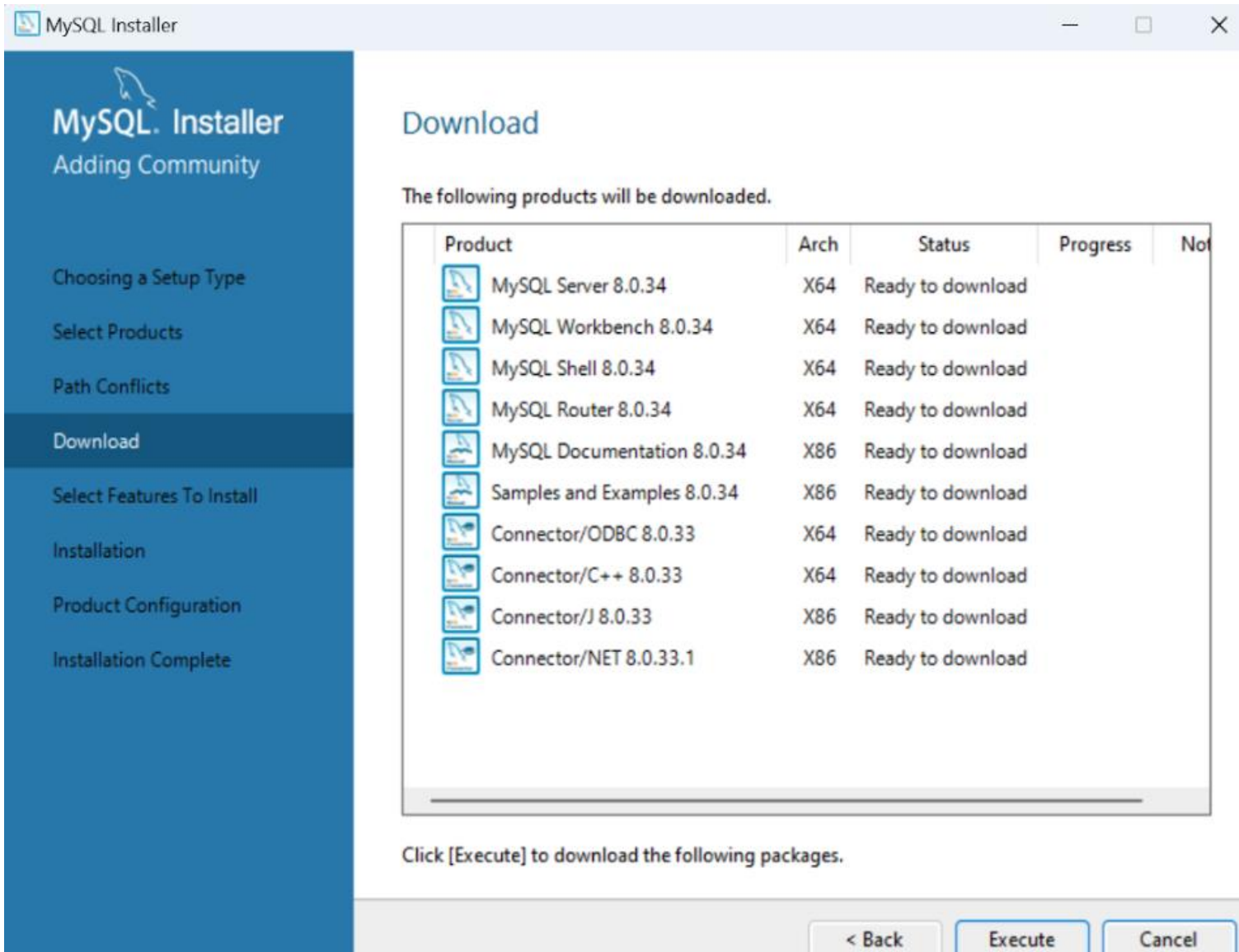
Select this file to  
Download and run it.



Select "Custom" as the setup type and click Next.

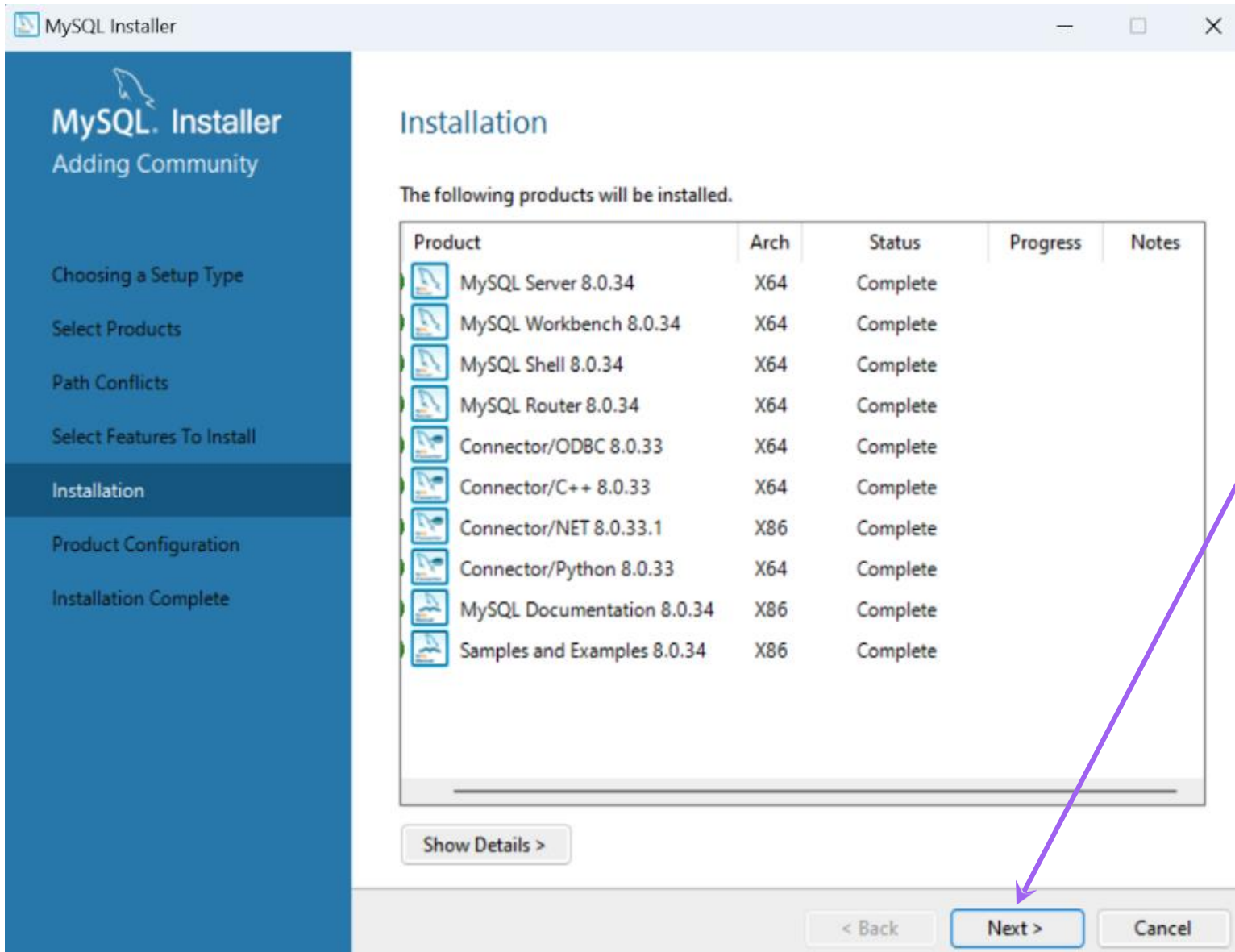


Select the products to be installed and click Next.



If you get a “Try Again” option here instead, then click on the try again option to download the products.





Once all the products are installed and the status is shown as "complete" proceed with the next option

# MySQL. Installer

MySQL Server 8.0.34

## Type and Networking

Authentication Method

Accounts and Roles

Windows Service

Apply Configuration

## Type and Networking

### Server Configuration Type

Choose the correct server configuration type for this MySQL Server installation. This setting will define how much system resources are assigned to the MySQL Server instance.

Config Type:

### Connectivity

Use the following controls to select how you would like to connect to this server.

☒ TCP/IP

Port:

X Protocol Port:

☒ Open Windows Firewall ports for network access

☐ Named Pipe

Pipe Name:

☐ Shared Memory

Memory Name:

### Advanced Configuration

Select the check box below to get additional configuration pages where you can set advanced and logging options for this server instance.

☐ Show Advanced and Logging Options

Next >

Cancel

Port to  
connect to  
MYSQL

MySQL Installer

MySQL Server 5.7.12

Type and Networking

Accounts and Roles

Windows Service

Plugins and Extensions

Apply Server Configuration

### Accounts and Roles

**Root Account Password**  
Enter the password for the root account. Please remember to store this password in a secure place.

MySQL Root Password:

Repeat Password:

Password Strength: **Weak**

**MySQL User Accounts**  
Create MySQL user accounts for your users and applications. Assign a role to the user that consists of a set of privileges.

MySQL Username	Host	User Role
----------------	------	-----------

Add User

Edit User

Delete

< Back

Next >

Cancel

Enter the password as root. You will need to store these credentials as you need them to access MySQL.

# MySQL Installer

MySQL Server 8.0.34

Type and Networking

Authentication Method

Accounts and Roles

Windows Service

Apply Configuration

## Windows Service

☒ Configure MySQL Server as a Windows Service

### Windows Service Details

Please specify a Windows Service name to be used for this MySQL Server instance.  
A unique name is required for each instance.

Windows Service Name:

☒ Start the MySQL Server at System Startup

### Run Windows Service as ...

The MySQL Server needs to run under a given user account. Based on the security requirements of your system you need to pick one of the options below.

☒ Standard System Account

Recommended for most scenarios.

☐ Custom User

An existing user account can be selected for advanced scenarios.

< Back

Next >

Cancel

Windows Service  
name is MYSQL80,  
click next

# MySQL<sup>®</sup> Installer

MySQL Server 8.0.34

Type and Networking

Authentication Method

Accounts and Roles

Windows Service

Apply Configuration

## Apply Configuration

The following configuration steps are being executed.

Configuration Steps Log

- ☒ Writing configuration file
- ☒ Updating Windows Firewall rules
- ☒ Adjusting Windows service
- ☒ Starting the server .
- ☐ Updating the Start menu link

Execute

Cancel

# MySQL<sup>®</sup> Installer

Adding Community

Select Products

Path Conflicts

Select Features To Install

Installation

Product Configuration

Installation Complete

## Product Configuration

We'll now walk through a configuration wizard for each of the following products.

You can cancel at any point if you wish to leave this wizard without configuring all the products.

Product	Status
MySQL Server 8.0.34	Configuration complete.

Next >

Cancel

# MySQL Installer

## Samples and Examples

[Connect To Server](#)[Apply Configuration](#)

### Connect To Server

Select the MySQL server instances from the list to receive sample schemas and data.

Server	Port	Arch...	Type	Status
<input checked="" type="checkbox"/> MySQL Server 8.0.34	3306	X64	Stand-alone Server	Connection succeeded.

Provide the credentials that should be used (requires root privileges).  
Click "Check" to ensure they work.

User name:

Credentials provided in Server configuration

Password:

Check



Next >

Cancel

Enter the password you have set in previous step and click check to connect with MySQL server.

# MySQL Installer

Adding Community

Choosing a Setup Type

Installation

Product Configuration

Installation Complete

## Installation Complete

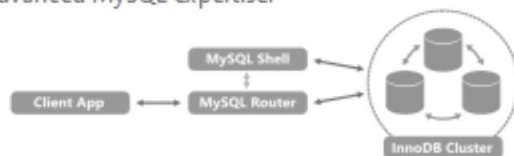
The installation procedure has been completed.

Copy Log to Clipboard

☒ Start MySQL Workbench after setup

☒ Start MySQL Shell after setup

The MySQL Shell is an advanced MySQL client application that can be used to work with single MySQL Server instances. Further, it can be used to create and manage an InnoDB cluster, an integrated solution for high availability and scalability of MySQL databases, without requiring advanced MySQL expertise.



Refer to the following links for documentation, tutorials and examples on MySQL Shell:

[MySQL Shell Documentation](#)

[Setting up a Real World Cluster Blog](#)

[The All New MySQL InnoDB ReplicaSet Blog](#)

[Changing Cluster Options Live Blog](#)

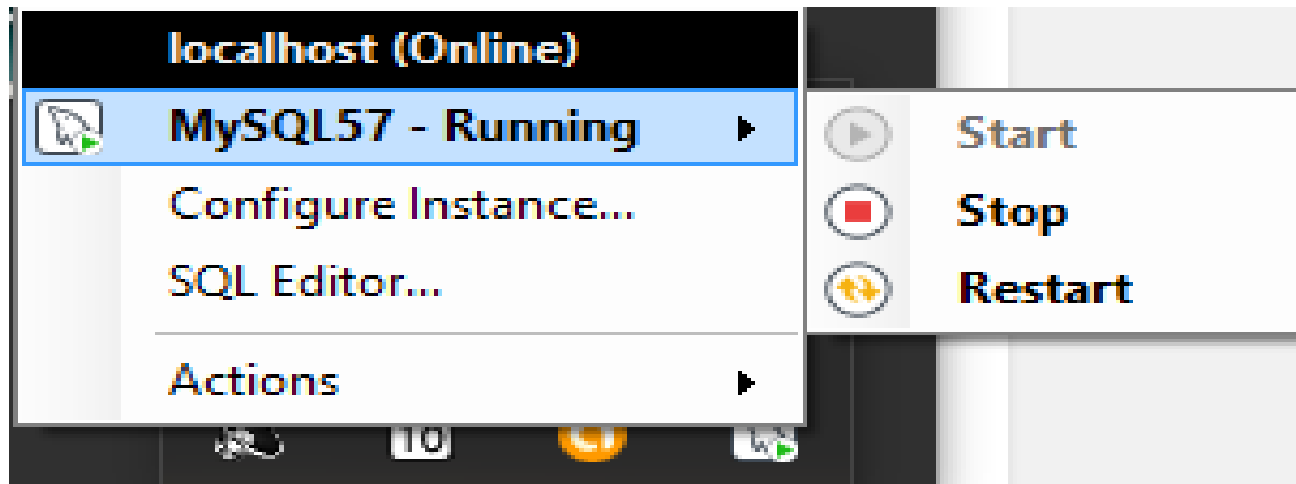
Finish

Now, the  
installation is  
completed.



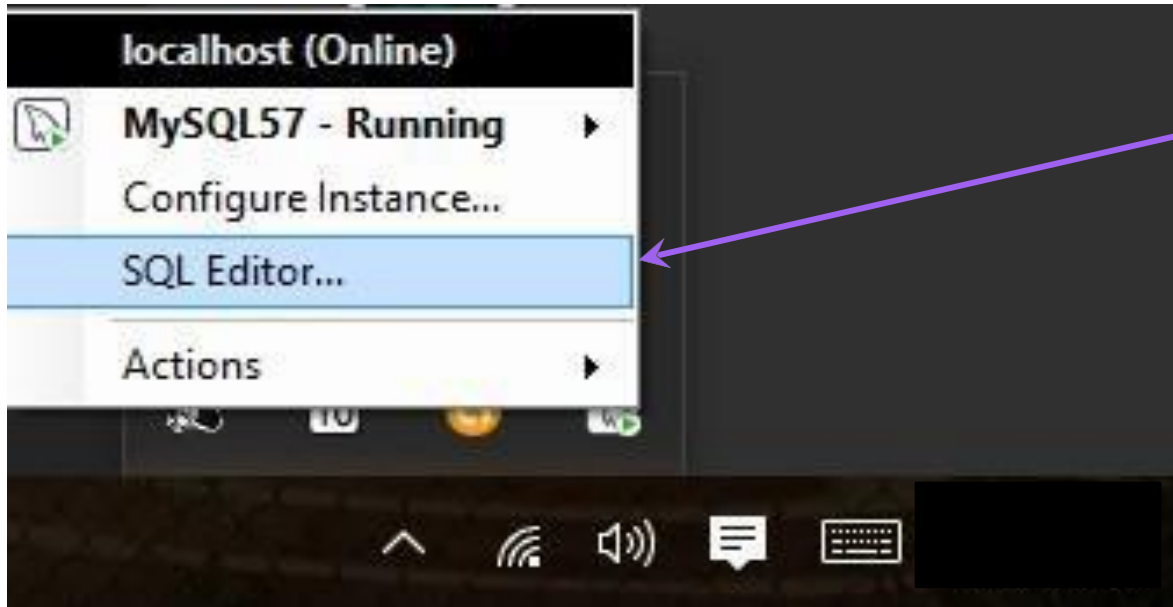
## Post Installation...

- After the installation, we can monitor MySQL server by accessing MySQL notifier from the task bar.
- If MySQL notifier is not installed, download it by clicking on the link <https://downloads.mysql.com/archives/notifier/>



- Through the MySQL notifier, we could start, stop or restart MySQL components.

- To open the Workbench, where we write and execute several queries, we should click on “SQL Editor”.



Now, the  
installation is  
completed.

- Once the workbench is opened, we need to enter the credentials ( used during installation) to access workbench. Following screenshot exhibits the same.

# Welcome to MySQL Workbench

MySQL Workbench is the official graphical user interface (GUI) tool for MySQL. It allows you to design, create and browse your database schemas, work with database objects and insert data as well as design and run SQL queries and data from other

[Browse Documentation >](#)[Discuss on the Forums >](#)[Filter connections](#)

## MySQL Connections + -

Local instance MySQL80

root  
localhost:3306

Connect to MySQL Server

Please enter password for the following service:

Service: Mysql@localhost:3306

User: root

Password:

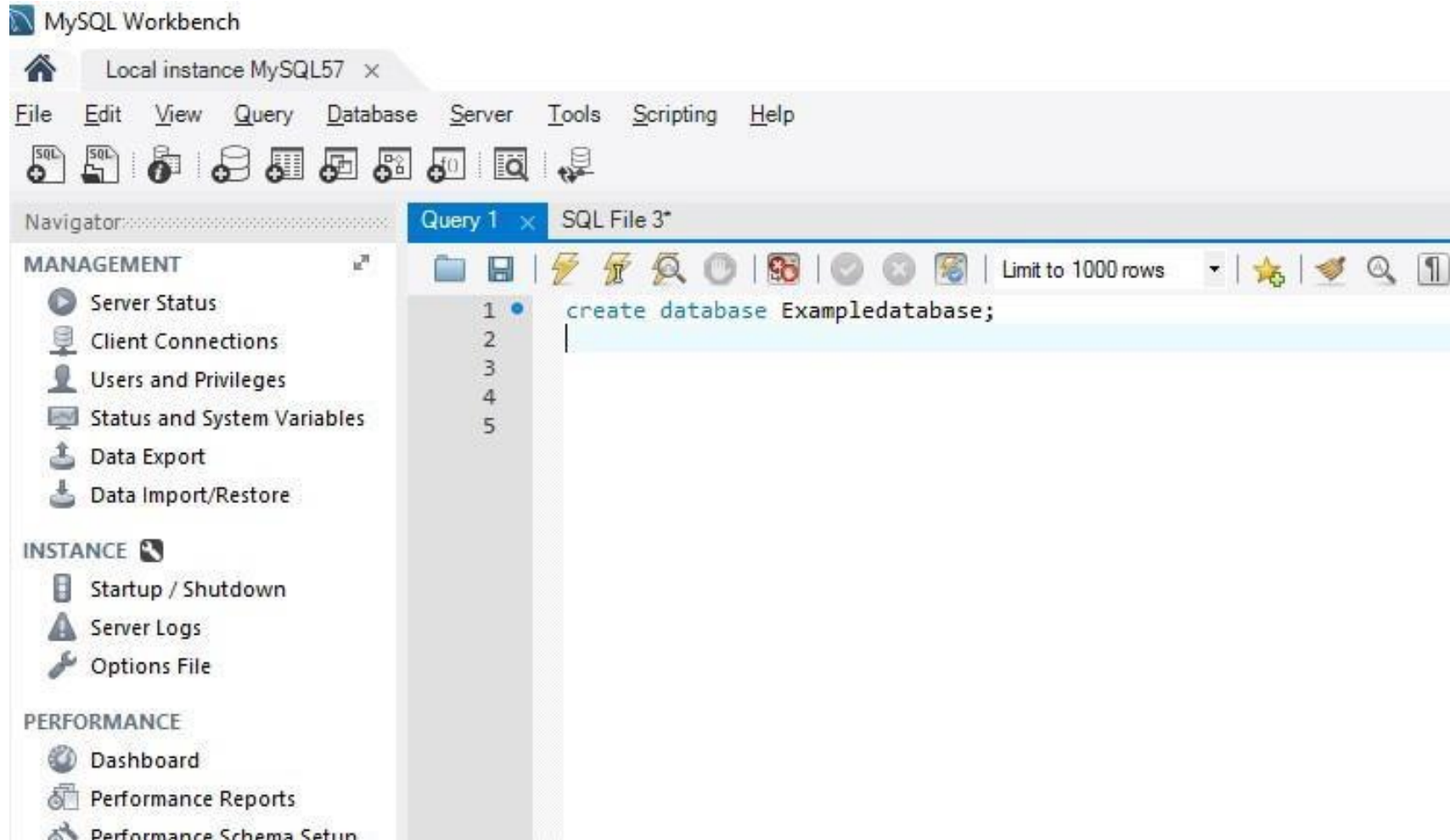
☒ Save password in vault

OK Cancel

Enter the password used while installation.

# Executing queries in MySQL Workbench

Goto File and select “New Query Tab “ to write and execute the queries.

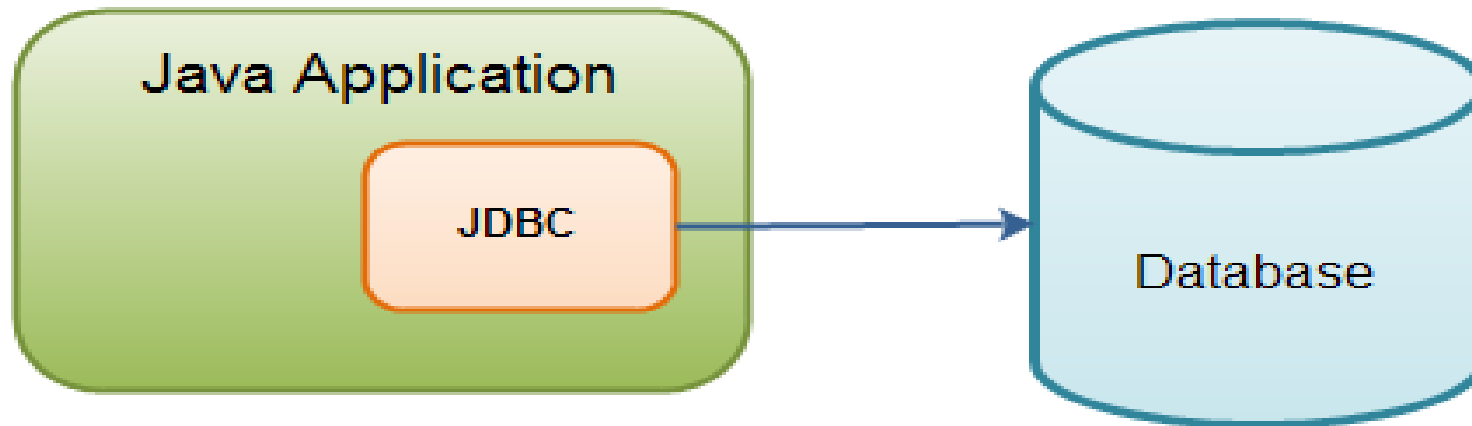


# Executing queries using a Java Application

Now let us write and execute the SQL queries using a Java Application.

How do we do it?

-> By using a JDBC Driver. JDBC stands for Java Database Connectivity.



# JDBC Driver Types

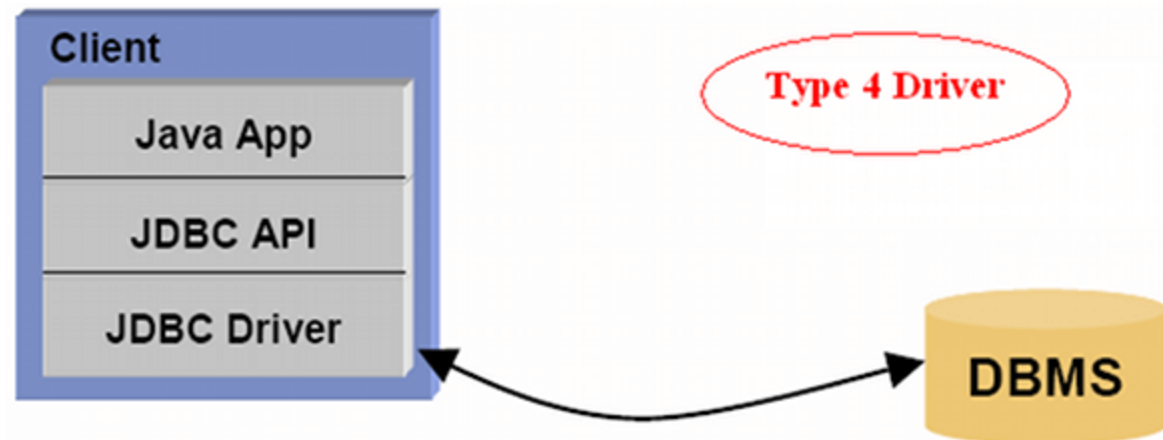
**Type 1:** JDBC-ODBC Bridge driver (Bridge)

**Type 2:** Native-API/partly Java driver (Native)

**Type 3:** All Java/Net-protocol driver (Middleware)

**Type 4:** All Java/Native-protocol driver (Pure).

We will be using the Type 4 driver , as we use libraries to communicate directly with the database server.




# Download the Jar file:

We need a jar file `mysql-connector-java-8.0.26.jar` to compile and execute a application. If you want to compile the examples from the command line, go to the site <https://downloads.mysql.com/archives/c-j/> and download the MySQL connector.

## MySQL Product Archives

MySQL Connector/J (Archived Versions)

 **Please note that these are old versions. New releases will have recent bug fixes and features!**  
To download the latest release of MySQL Connector/J, please visit [MySQL Downloads](#).

Product Version:

Operating System:

**Platform Independent (Architecture Independent), Compressed TAR Archive**

(mysql-connector-java-8.0.26.tar.gz)

Jun 8, 2021

4.0M

[Download](#)

MD5: 29df9c3a386684c27b9585d178fd1a46 | [Signature](#)

**Platform Independent (Architecture Independent), ZIP Archive**

(mysql-connector-java-8.0.26.zip)

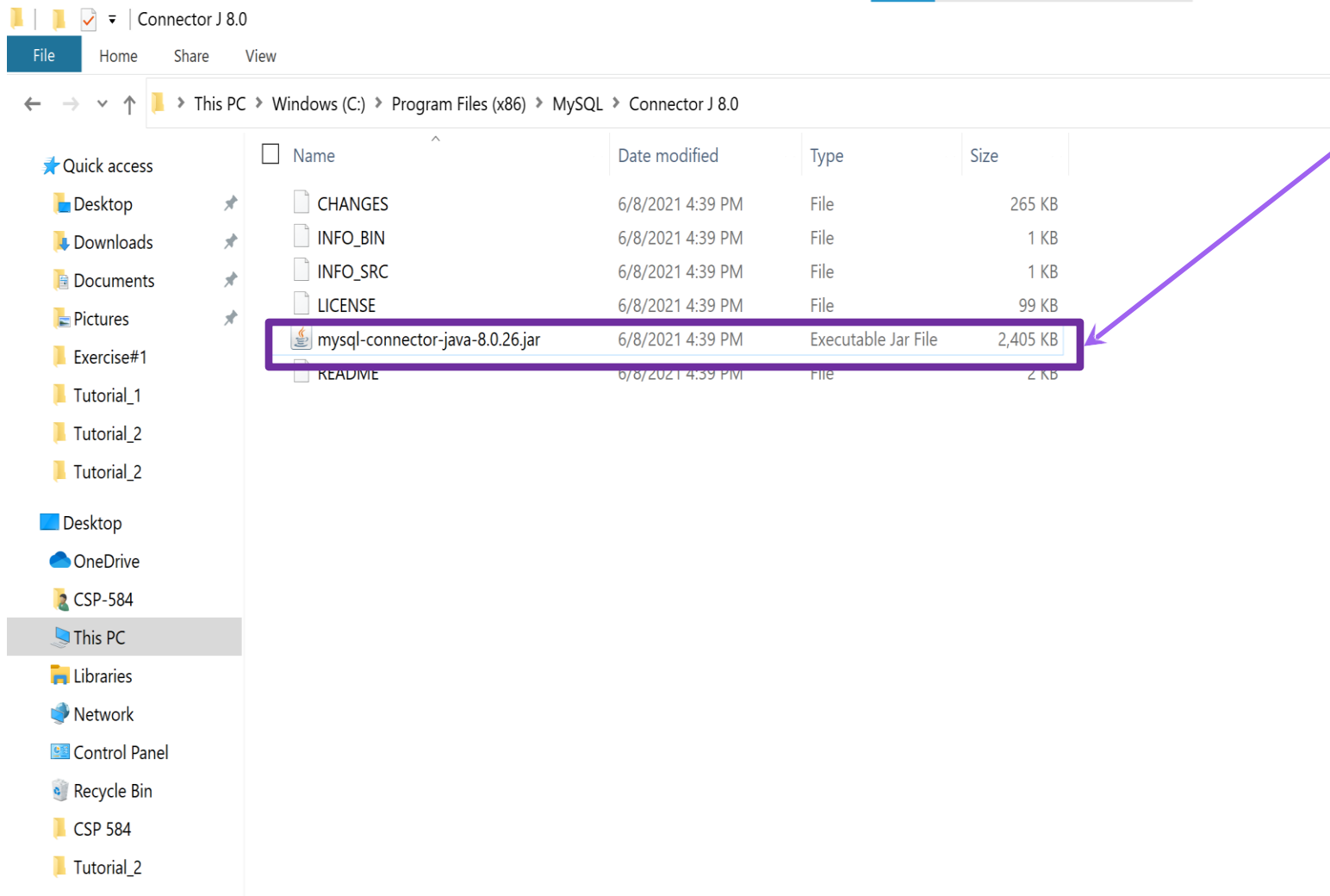
Jun 8, 2021

4.7M

[Download](#)

MD5: 37377584bf16245d6401faedace08067 | [Signature](#)

Select this  
Driver



By default the mysql connector jar file is downloaded along with Mysql Server, Workbench etc. It is located in the following directory:

C:\Program Files  
(x86)\MySQL\Connector J 8.0



File Home Share View

← → ↕ ⬆ ⬇

📁 This PC > Windows (C:) > apache-tomcat-9.0.52 > lib

★ Quick access

- 📁 Desktop
- 📁 Downloads
- 📁 Documents
- 📁 Pictures
- 📁 Exercise#1
- 📁 Tutorial\_1
- 📁 Tutorial\_2
- 📁 Tutorial\_2

📁 Desktop

📁 OneDrive

👤 CSP-584

💻 This PC

📁 Libraries

🌐 Network

🖨 Control Panel

🗑 Recycle Bin

📁 CSP 584

📁 Tutorial\_2

<input type="checkbox"/>	Name	Date modified	Type	Size
	annotations-api.jar	7/31/2021 6:12 AM	Executable Jar File	13 KB
	catalina.jar	7/31/2021 6:12 AM	Executable Jar File	1,675 KB
	catalina-ant.jar	7/31/2021 6:12 AM	Executable Jar File	54 KB
	catalina-ha.jar	7/31/2021 6:12 AM	Executable Jar File	122 KB
	catalina-ssi.jar	7/31/2021 6:12 AM	Executable Jar File	62 KB
	catalina-storeconfig.jar	7/31/2021 6:12 AM	Executable Jar File	77 KB
	catalina-tribes.jar	7/31/2021 6:12 AM	Executable Jar File	331 KB
	ecj-4.20.jar	7/31/2021 6:12 AM	Executable Jar File	3,061 KB
	el-api.jar	7/31/2021 6:12 AM	Executable Jar File	88 KB
	jasper.jar	7/31/2021 6:12 AM	Executable Jar File	558 KB
	jasper-el.jar	7/31/2021 6:12 AM	Executable Jar File	167 KB
	jaspic-api.jar	7/31/2021 6:12 AM	Executable Jar File	27 KB
	jsp-api.jar	7/31/2021 6:12 AM	Executable Jar File	63 KB
	mysql-connector-java-8.0.26.jar	6/8/2021 4:39 PM	Executable Jar File	2,405 KB
	servlet-api.jar	7/31/2021 6:12 AM	Executable Jar File	278 KB
	tomcat-api.jar	7/31/2021 6:12 AM	Executable Jar File	12 KB
	tomcat-coyote.jar	7/31/2021 6:12 AM	Executable Jar File	895 KB
	tomcat-dbcp.jar	7/31/2021 6:12 AM	Executable Jar File	317 KB
	tomcat-i18n-cs.jar	7/31/2021 6:12 AM	Executable Jar File	68 KB
	tomcat-i18n-de.jar	7/31/2021 6:12 AM	Executable Jar File	73 KB
	tomcat-i18n-es.jar	7/31/2021 6:12 AM	Executable Jar File	103 KB
	tomcat-i18n-fr.jar	7/31/2021 6:12 AM	Executable Jar File	163 KB
	tomcat-i18n-ja.jar	7/31/2021 6:12 AM	Executable Jar File	186 KB
	tomcat-i18n-ko.jar	7/31/2021 6:12 AM	Executable Jar File	186 KB
	tomcat-i18n-pt-BR.jar	7/31/2021 6:12 AM	Executable Jar File	52 KB
	tomcat-i18n-ru.jar	7/31/2021 6:12 AM	Executable Jar File	48 KB
	tomcat-i18n-zh-CN.jar	7/31/2021 6:12 AM	Executable Jar File	170 KB
	tomcat-jdbc.jar	7/31/2021 6:12 AM	Executable Jar File	147 KB
	tomcat-jni.jar	7/31/2021 6:12 AM	Executable Jar File	36 KB
	tomcat-util.jar	7/31/2021 6:12 AM	Executable Jar File	207 KB
	tomcat-util-scan.jar	7/31/2021 6:12 AM	Executable Jar File	219 KB
	tomcat-websocket.jar	7/31/2021 6:12 AM	Executable Jar File	237 KB

Copy this mysql connector jar  
file and paste it inside  
C:\apache-tomcat-9.0.52\lib

# Steps to Execute the application

## Option 1: Executing the Program by adding the jar file path in a bat file .

Add the whole path for jar file in CLASSPATH inside your env-setup.bat file

The location of the JAR files highlighted will differ based on where they are present on your computer  
Please make sure you do the changes accordingly

```
env-setup-for-tomcat.bat - Notepad
File Edit Format View Help
set JAVA_HOME=C:\Program Files\Java\jdk-14.0.2

set PATH="C:\Program Files\Java\jdk-14.0.2\bin";%PATH%

set CLASSPATH=.;C:\apache-tomcat-9.0.52\lib\servlet-api.jar;
                C:\apache-tomcat-9.0.52\lib\jsp-api.jar;
                C:\apache-tomcat-9.0.52\lib\el-api.jar;
                C:\apache-tomcat-9.0.52\lib\commons-beanutils-1.8.3.jar;
                C:\apache-tomcat-9.0.52\lib\mysql-connector-java-8.0.26.jar;

set ANT_HOME=C:\apache-tomcat-9.0.52

set TOMCAT_HOME=C:\apache-tomcat-9.0.52

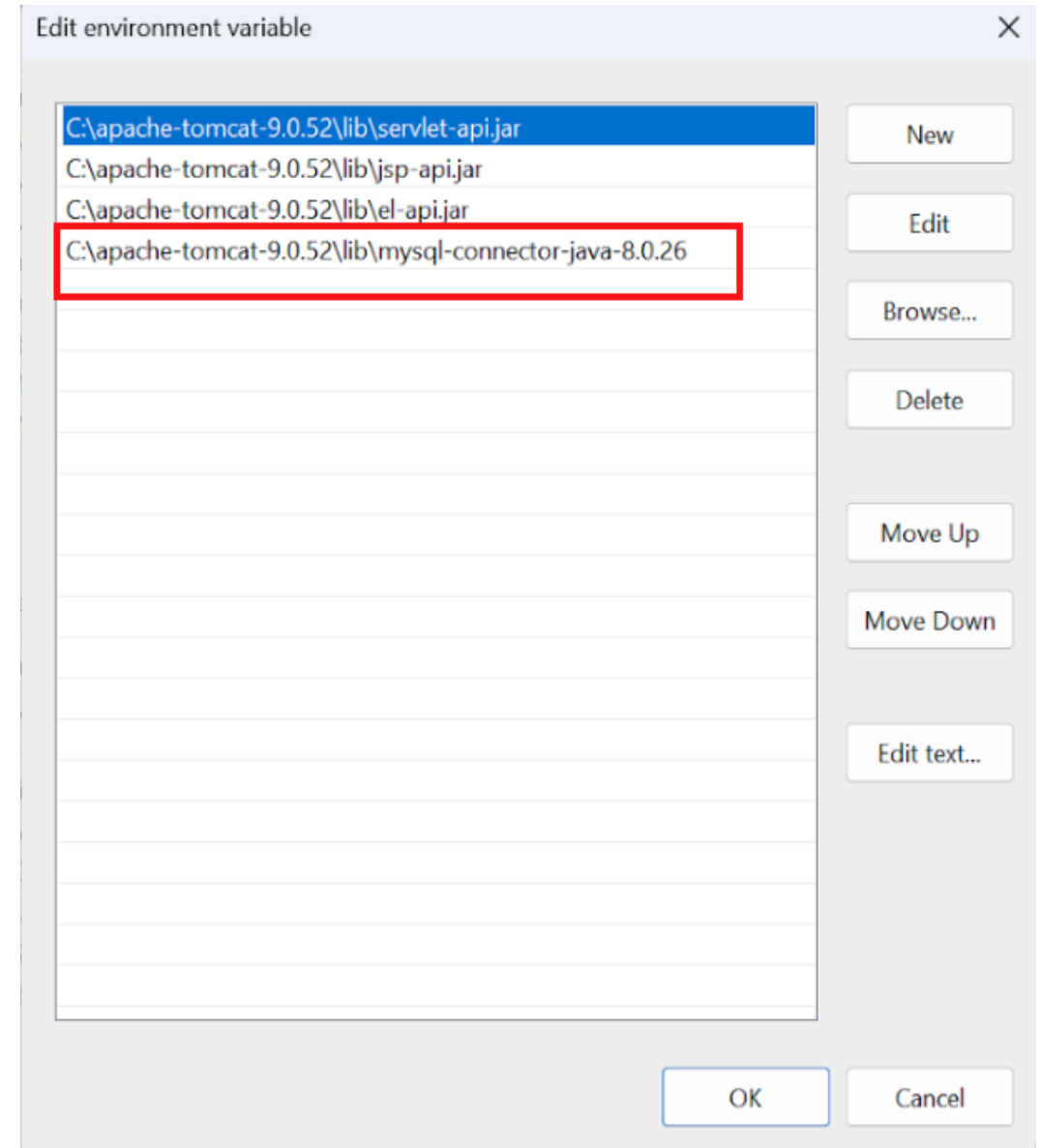
set CATALINA_HOME=C:\apache-tomcat-9.0.52
```

Executing by  
adding jar file in  
class path in  
env-setup.bat file

## Option 2 : By setting a classpath variable.

### Steps:

- Goto Control Panel -> system -> Advanced system settings -> Environment Variables.
- Under User variables, choose new, and create a new variable called Classpath = "The full pathname where jar file is present in the system"
- Click on save.
- Then OK.



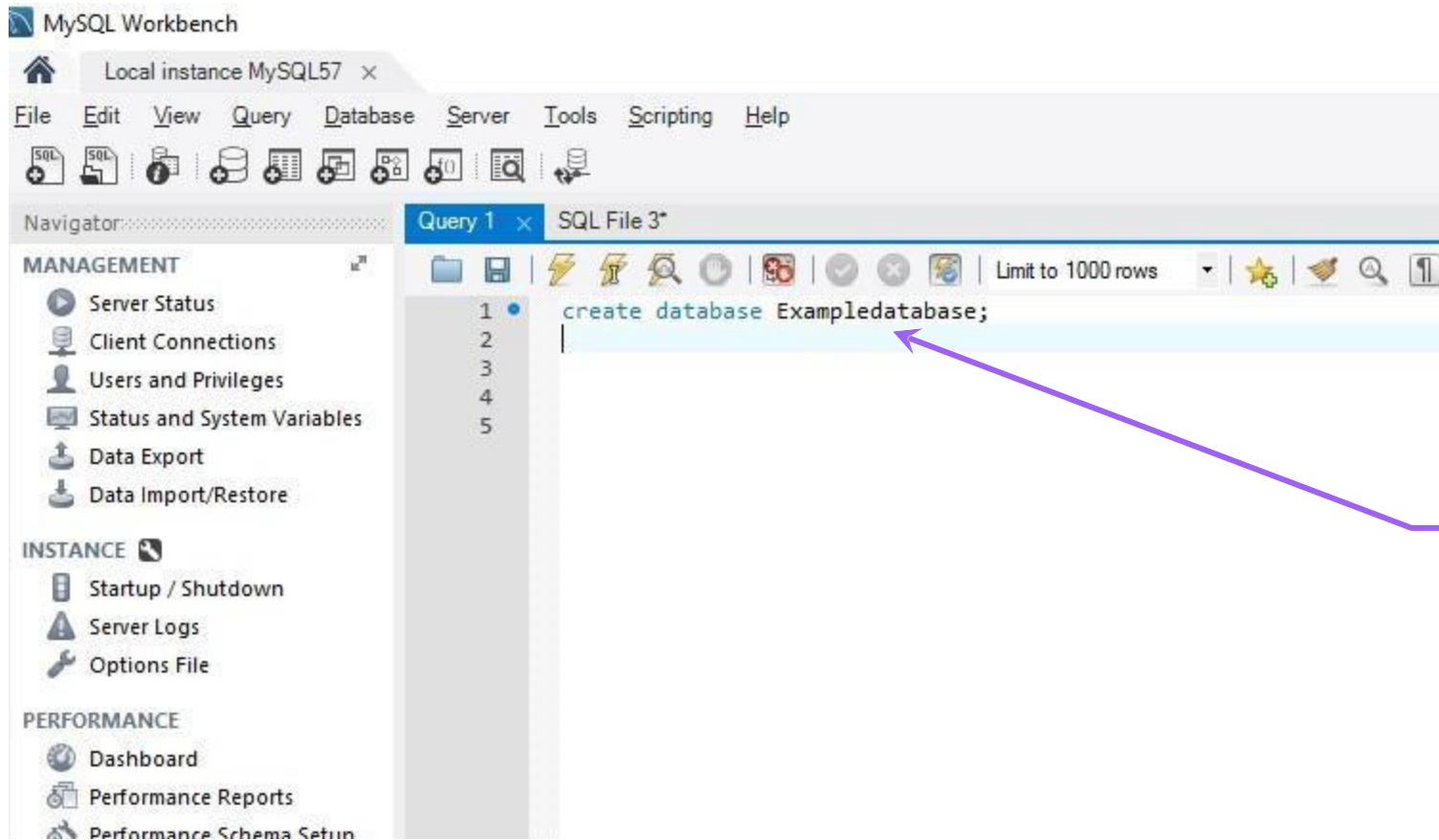
# A walkthrough example

In this example,

- First, we will create a database called “`exampledatabase`” using MySQL workbench.
- Secondly, we will create a table “`Registration`” within the `exampledatabase` and store customer login details
- Third, we will create a table “`CustomerOrders`” within the `exampledatabase` and store order details for game speed application.

# A walkthrough example

- **Step 1:** Create a database called “exempldatabase” in the workbench space, and execute the SQL command.

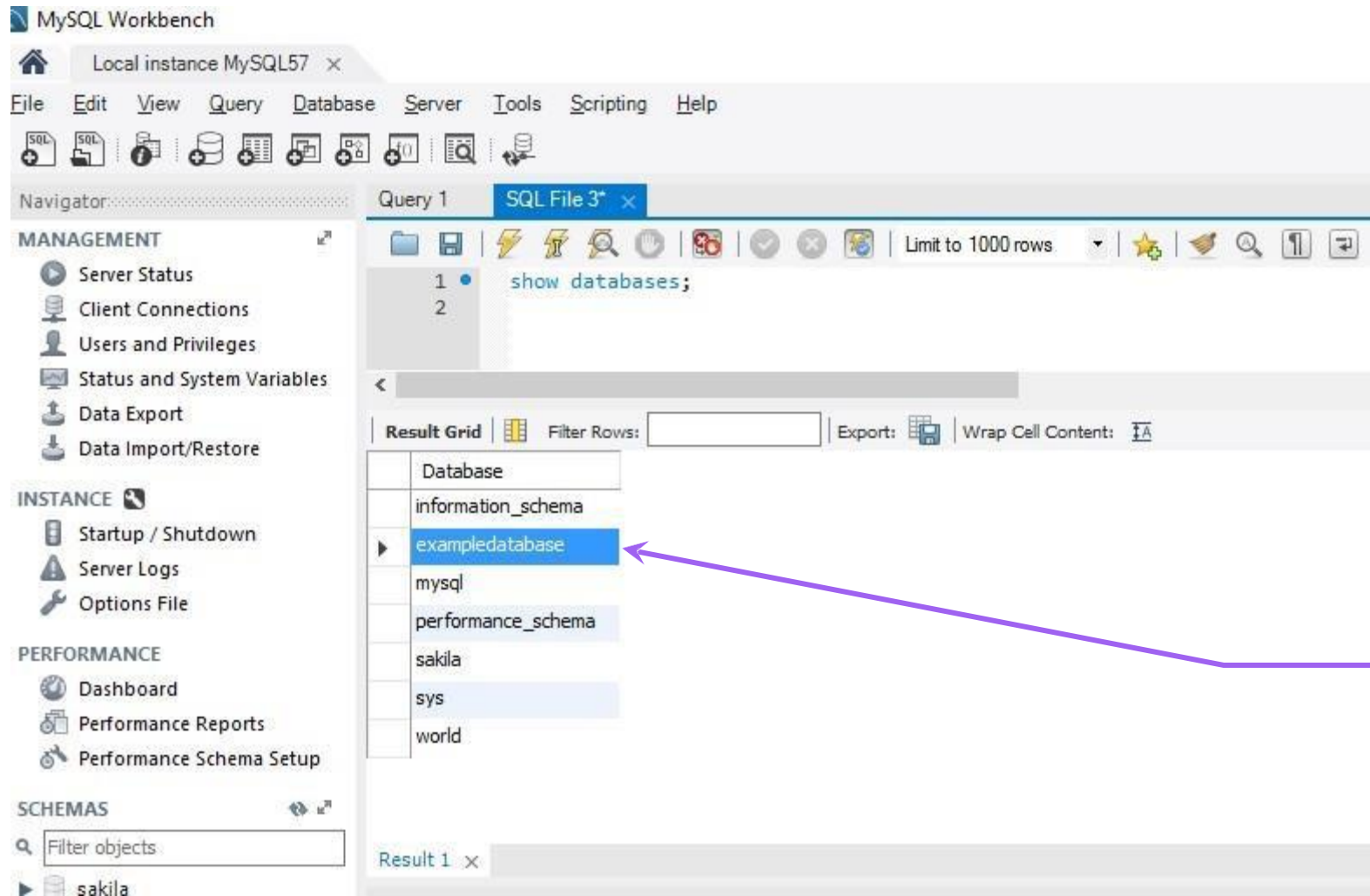


Query to create a  
new database

# A walkthrough example

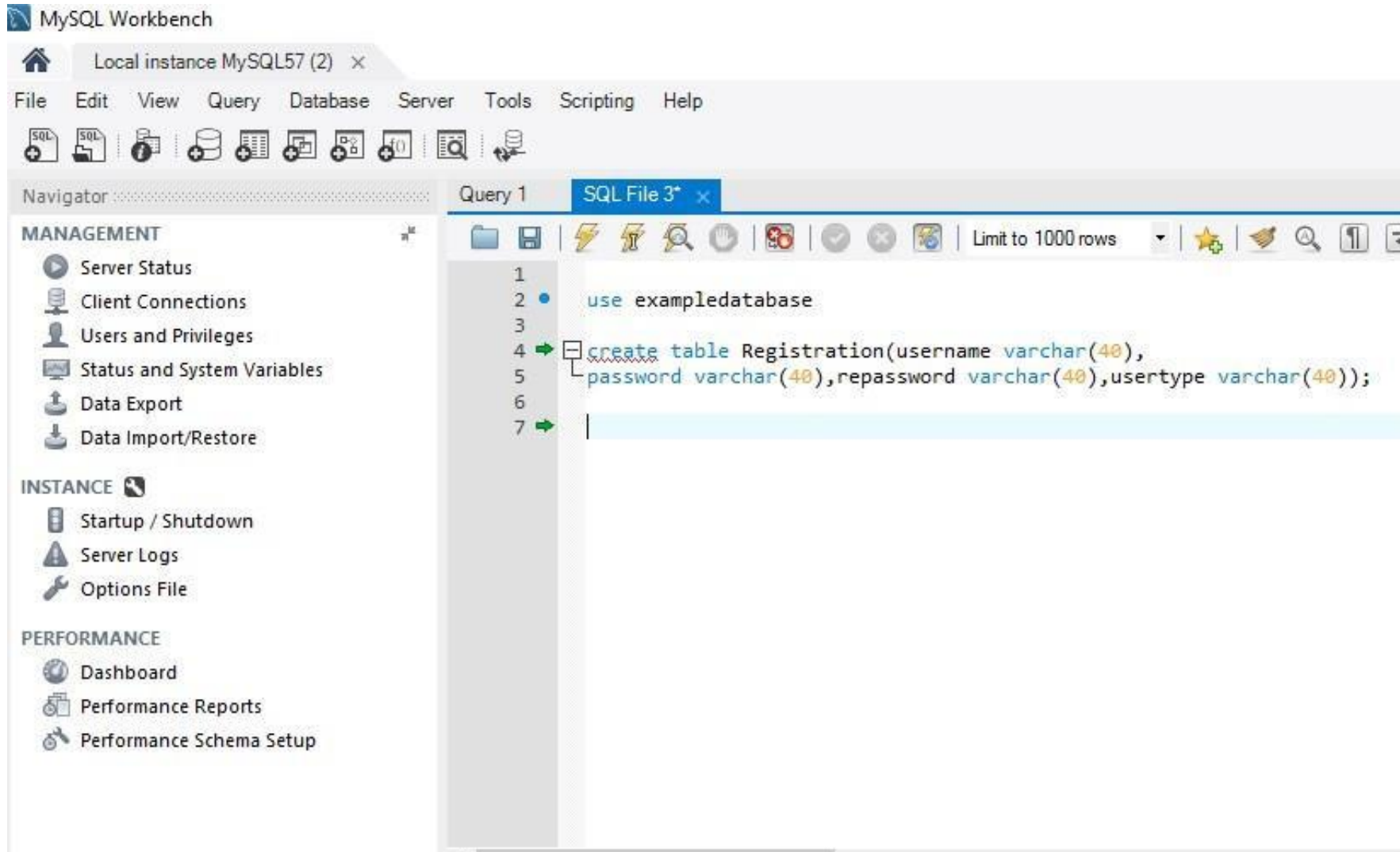
Write and execute the following commands to check if the database is created.

-> show databases;



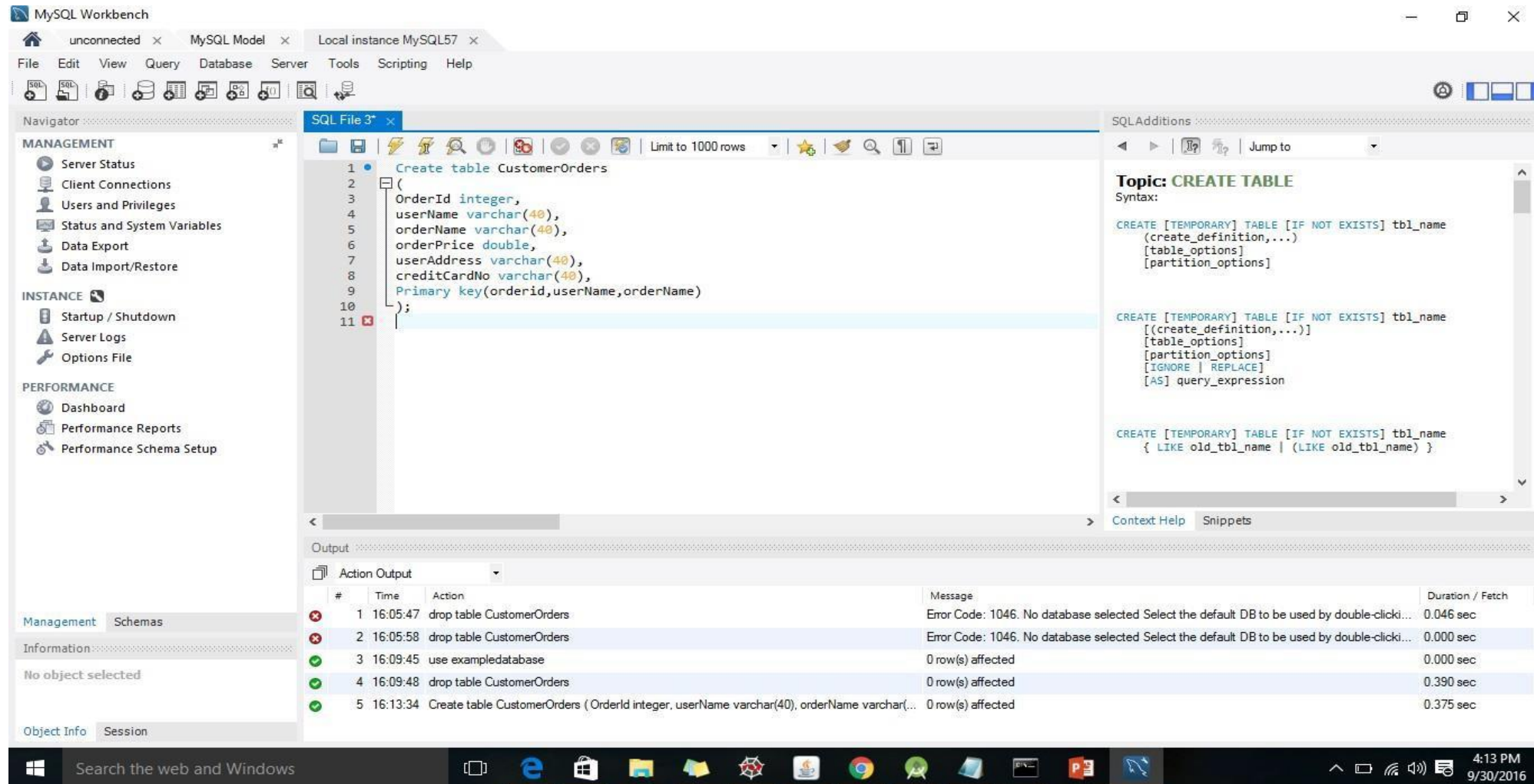
Our  
Exampledatabase is  
created

**Step 2:** Create a table “Registration” in the workbench space, and execute the SQL command.





**Step 3:** Create a table called “CustomerOrder” in the workbench space, and execute the SQL command.  
Specify the id as primary key for table



The screenshot displays the MySQL Workbench interface. The SQL editor shows the following SQL command:

```
1 Create table CustomerOrders
2 (
3   OrderId integer,
4   userName varchar(40),
5   orderName varchar(40),
6   orderPrice double,
7   userAddress varchar(40),
8   creditCardNo varchar(40),
9   Primary key(orderId,userName,orderName)
10 );
11
```

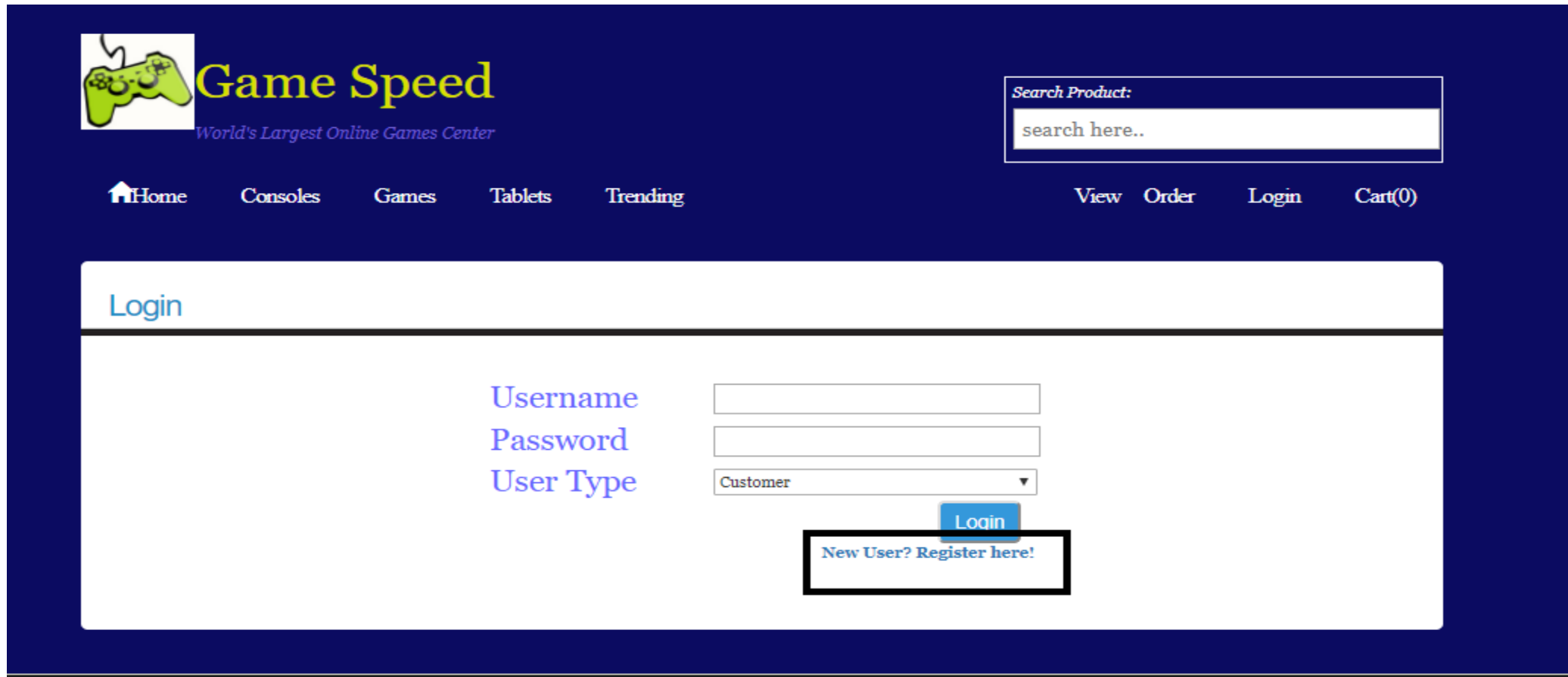
The Output window shows the execution results:

#	Time	Action	Message	Duration / Fetch
1	16:05:47	drop table CustomerOrders	Error Code: 1046. No database selected Select the default DB to be used by double-clicki...	0.046 sec
2	16:05:58	drop table CustomerOrders	Error Code: 1046. No database selected Select the default DB to be used by double-clicki...	0.000 sec
3	16:09:45	use exempladb	0 row(s) affected	0.000 sec
4	16:09:48	drop table CustomerOrders	0 row(s) affected	0.390 sec
5	16:13:34	Create table CustomerOrders ( OrderId integer, userName varchar(40), orderName varchar(...	0 row(s) affected	0.375 sec



# Example –Registration

- New User can Register into Website by Clicking on the Register here link On clicking the button user is directed to Registration page



The screenshot shows the 'Game Speed' website with a dark blue header. The logo features a green game controller and the text 'Game Speed' in yellow, with the tagline 'World's Largest Online Games Center' in purple. A search bar is located in the top right. The navigation menu includes 'Home', 'Consoles', 'Games', 'Tablets', 'Trending', 'View', 'Order', 'Login', and 'Cart(0)'. The main content area is white and contains a 'Login' section. It has input fields for 'Username', 'Password', and a 'User Type' dropdown menu set to 'Customer'. A blue 'Login' button is positioned below these fields. A black-bordered box highlights the text 'New User? Register here!' in blue, which is a link to the registration page.

**Game Speed**  
*World's Largest Online Games Center*

Search Product:  
search here..

Home Consoles Games Tablets Trending View Order Login Cart(0)

Login

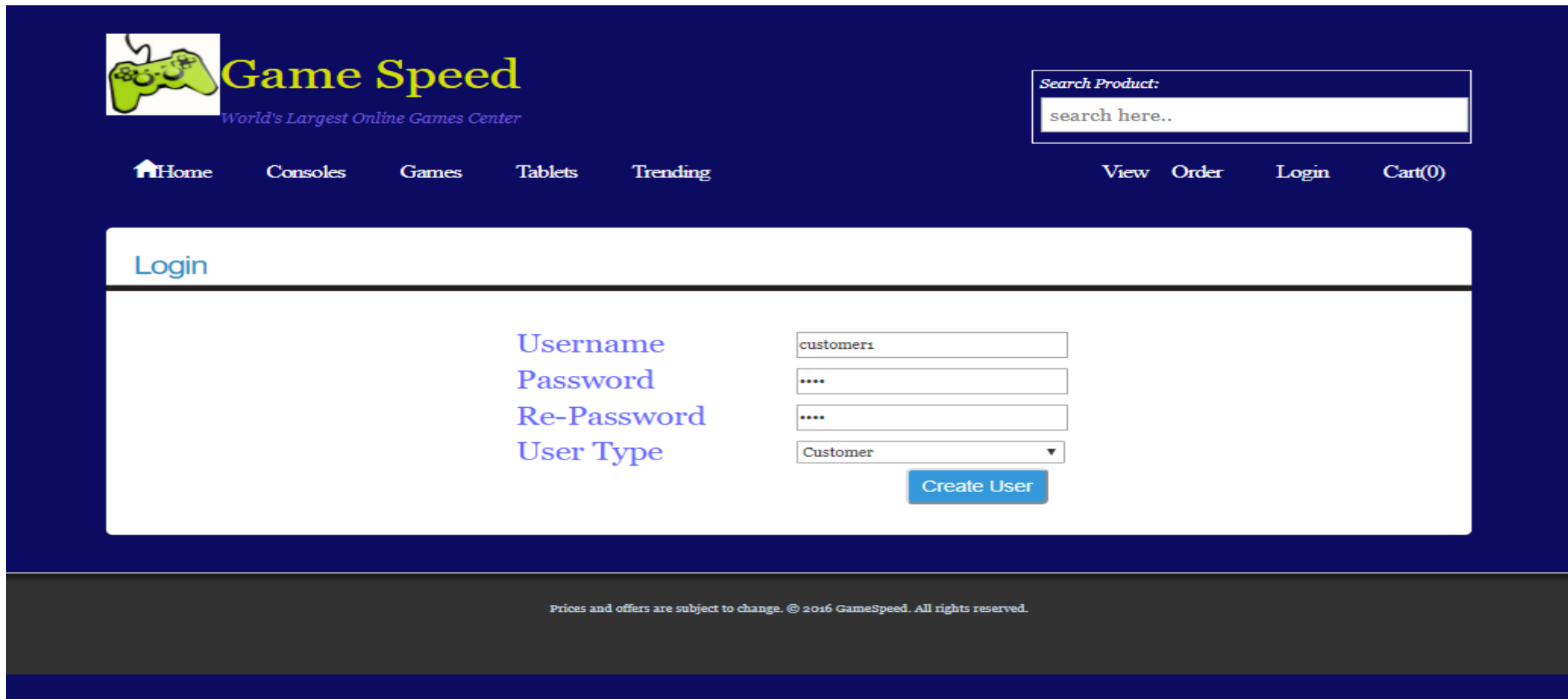
Username  
Password  
User Type

Customer

Login

New User? Register here!

- User provides the login information
- On clicking create user button data is stored in Registration Table of MySQL




The screenshot displays the 'Game Speed' website interface. At the top left is the logo featuring a green game controller and the text 'Game Speed' in yellow, with the tagline 'World's Largest Online Games Center' in purple below it. To the right of the logo is a search bar with the placeholder text 'Search Product:' and 'search here..'. Below the logo, a navigation menu includes links for 'Home', 'Consoles', 'Games', 'Tablets', and 'Trending'. On the right side of the navigation bar are links for 'View', 'Order', 'Login', and 'Cart(0)'. The main content area is titled 'Login' in blue. It contains a registration form with the following fields: 'Username' (with the value 'customer1'), 'Password' (masked with four dots), 'Re-Password' (masked with four dots), and 'User Type' (a dropdown menu currently showing 'Customer'). A blue 'Create User' button is positioned below the 'User Type' field. At the bottom of the page, a dark grey footer contains the text: 'Prices and offers are subject to change. © 2016 GameSpeed. All rights reserved.'

- User data is stored in Registration table you can check using the select query in workbench to check if all the column values are stored properly

The screenshot shows the MySQL Workbench interface. On the left is the Navigator pane with sections for MANAGEMENT, INSTANCE, and PERFORMANCE. The main area is titled 'SQL File 2\*' and contains a query: `select * from Registration`. Below the query editor is the 'Result Grid' tab, which displays the results of the query. The results are shown in a table with four columns: username, password, repassword, and usertype. The first row of data is 'customer1', 'customer1', 'customer1', and 'customer'. The query editor and the result grid are highlighted with red boxes.

username	password	repassword	usertype
customer1	customer1	customer1	customer

- After an Account is created for user in Registration table user can login into website with the credentials



# Game Speed

World's Largest Online Games Center

[Home](#) [Consoles](#) [Games](#) [Tablets](#) [Trending](#) [View](#) [Order](#) [Login](#) [Cart\(0\)](#)

## Login

Your customer account has been created. Please login

Username

customer1

Password

....

User Type

Customer ▼

Login

[New User? Register here!](#)

Prices and offers are subject to change. © 2016 GameSpeed. All rights reserved.

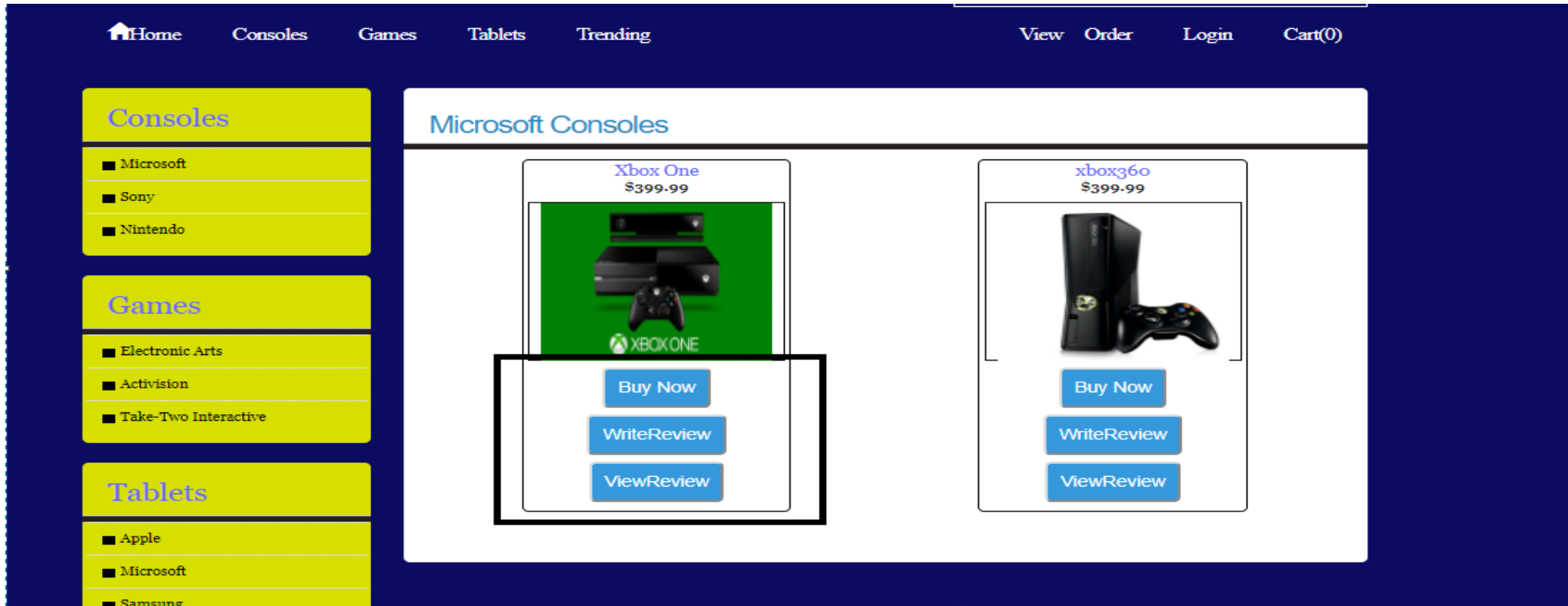
# Example –Place Order

- Click on the products available in the navigation bar
- You can also select the products from the left navigation bar



# Example – Place Order:

- Clicking on a product type will take you to the product page
- You have different options available such as buy a product , write reviews.



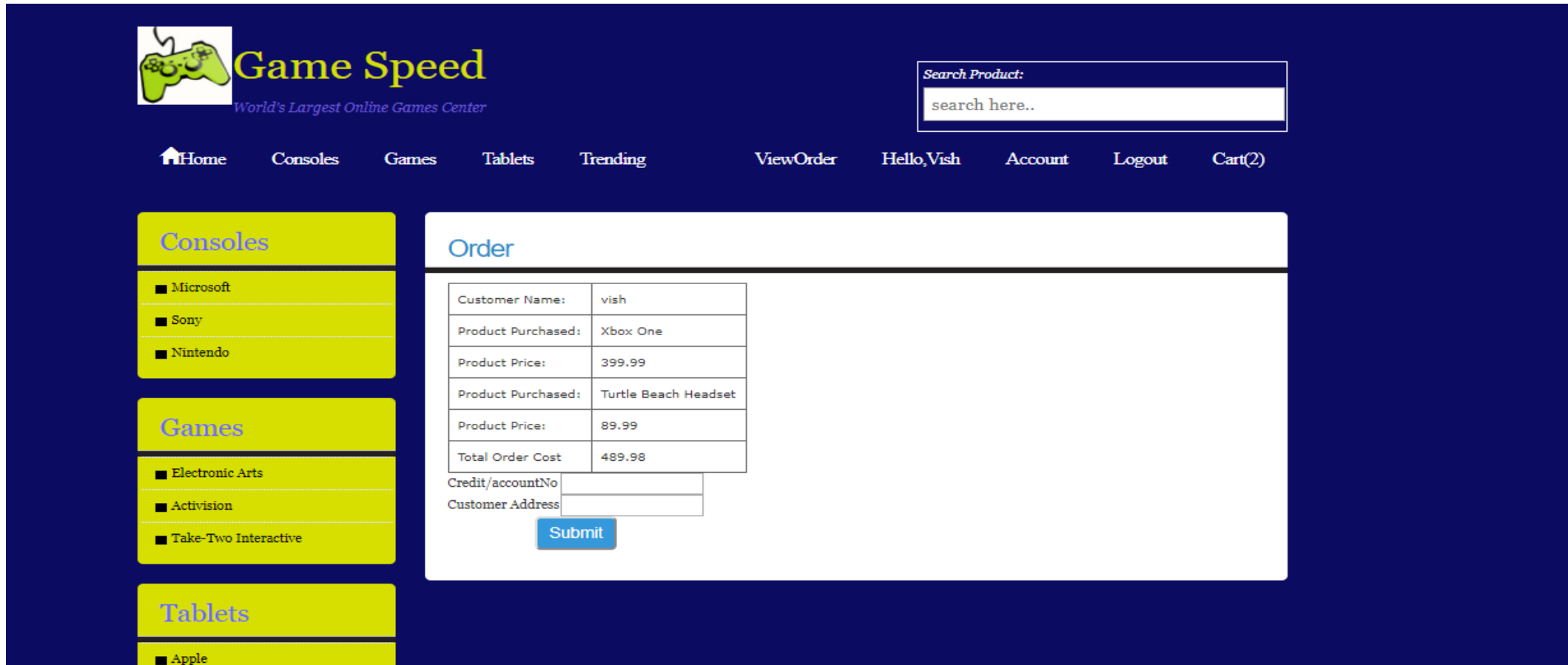
## Example – Place Order:

- Click on 'Buy' button on the products page to purchase the product
- This should take you to a new page (Cart Servlet) where you can purchase the product
- Click on 'Check Out' to place the order for the selected product.



# Example – Place Order:

- Clicking on CheckOut Button will take you to the CheckOut webpage where you have to provide your credit card no and address information.



The screenshot shows the 'Game Speed' website with a dark blue background. The header includes a logo with a green game controller and the text 'Game Speed' and 'World's Largest Online Games Center'. A search bar is located in the top right. The navigation menu includes links for Home, Consoles, Games, Tablets, Trending, ViewOrder, Hello,Vish, Account, Logout, and Cart(2). The left sidebar has categories for Consoles (Microsoft, Sony, Nintendo), Games (Electronic Arts, Activision, Take-Two Interactive), and Tablets (Apple). The main content area is titled 'Order' and contains a table with order details and input fields for customer information.

**Game Speed**  
World's Largest Online Games Center

Search Product:  
search here..

Home Consoles Games Tablets Trending ViewOrder Hello,Vish Account Logout Cart(2)

**Consoles**

- Microsoft
- Sony
- Nintendo

**Games**

- Electronic Arts
- Activision
- Take-Two Interactive

**Tablets**

- Apple

**Order**

Customer Name:	vish
Product Purchased:	Xbox One
Product Price:	399.99
Product Purchased:	Turtle Beach Headset
Product Price:	89.99
Total Order Cost	489.98

Credit/accountNo

Customer Address

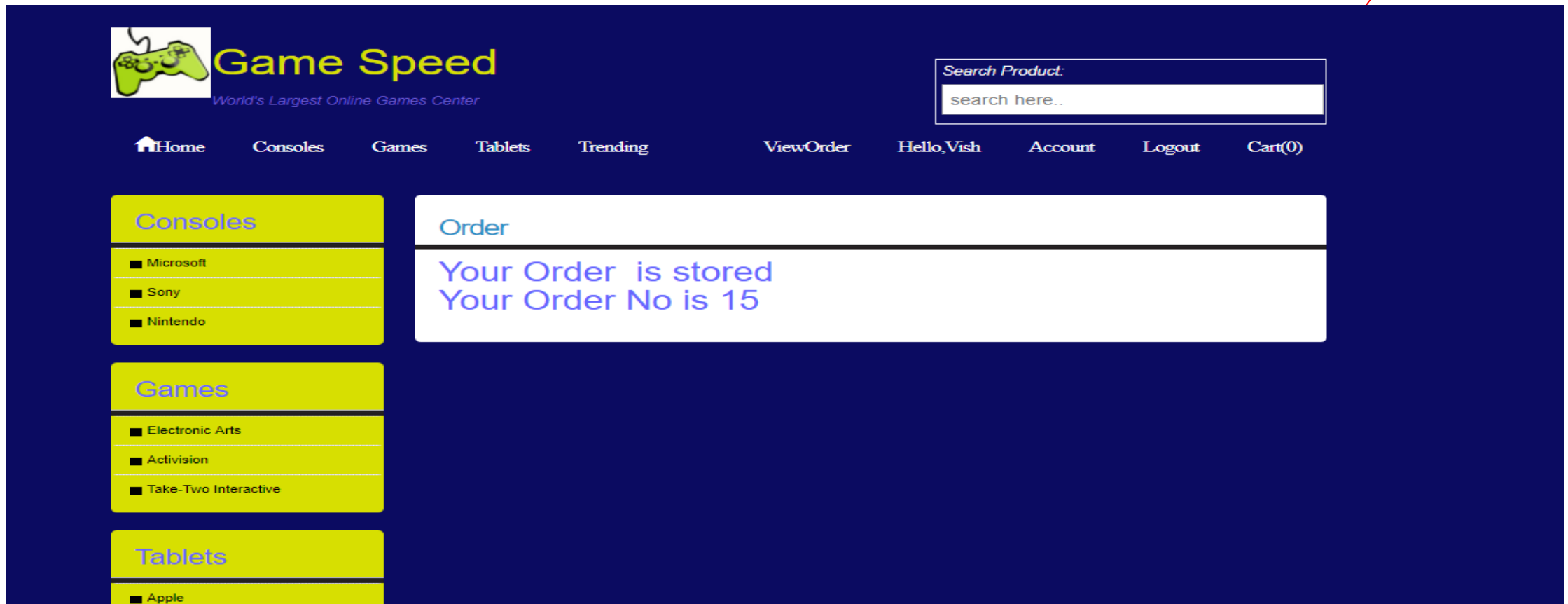
Submit



## Example – Place Order:

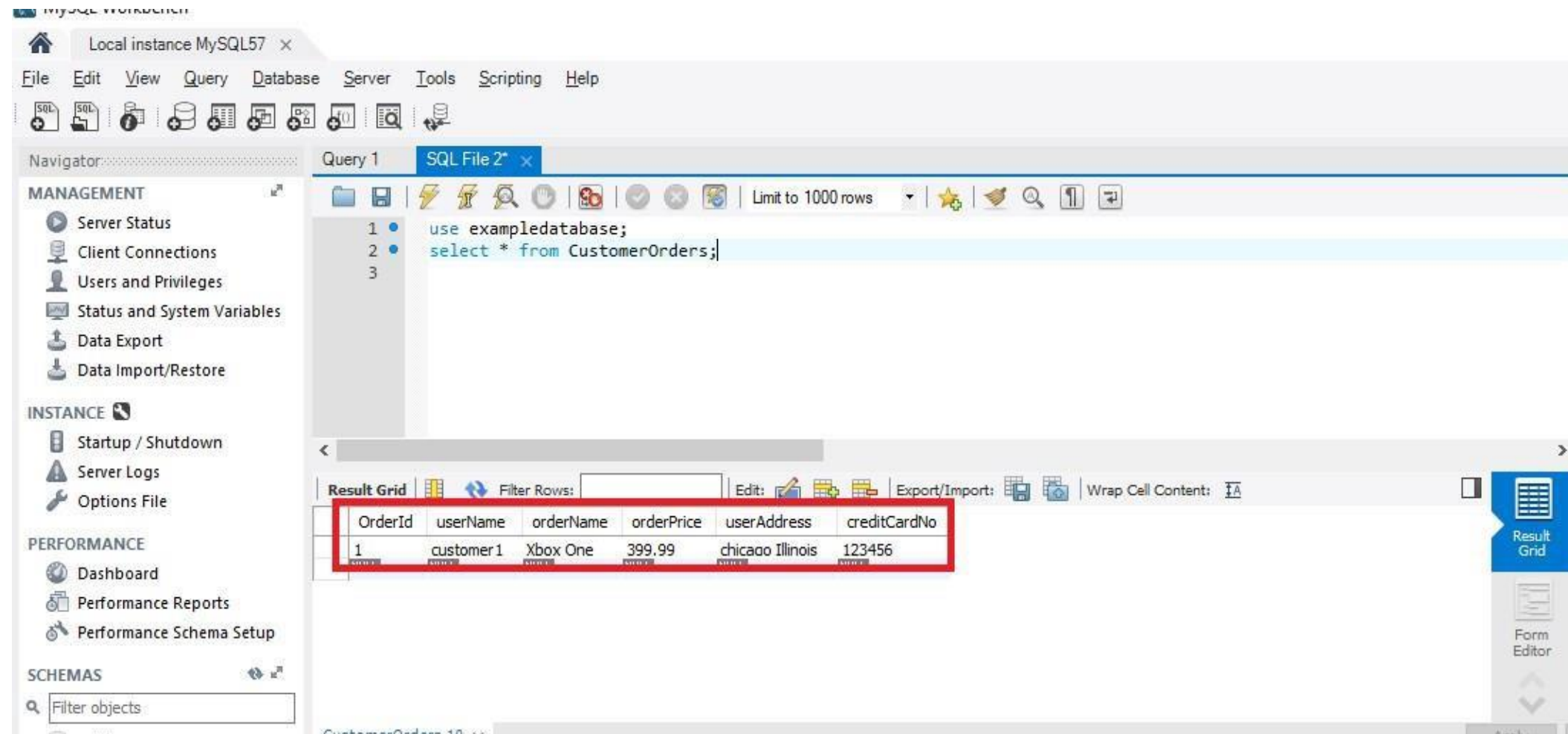
- On clicking the submit button from check out page order will be stored in My Sql database and order no will be generated

Order is Deleted  
from the cart



# Example – Place Order:

You can Check if the order Stored by executing select Query in database using sql workbench



The screenshot displays the MySQL Workbench interface. The left sidebar contains navigation panels for MANAGEMENT, INSTANCE, PERFORMANCE, and SCHEMAS. The central editor shows a SQL query in 'Query 1':

```
1 use exempladb;
2 select * from CustomerOrders;
3
```

Below the query editor, the 'Result Grid' is visible, showing a single row of data. The columns are: OrderId, userName, orderName, orderPrice, userAddress, and creditCardNo. The data row contains: 1, customer 1, Xbox One, 399.99, chicago Illinois, and 123456. A red rectangle highlights the first row of the result grid.

OrderId	userName	orderName	orderPrice	userAddress	creditCardNo
1	customer 1	Xbox One	399.99	chicago Illinois	123456

# Servlets MySql Connection

- We will be using com.mysql.jdbc.Driver for connecting mysql from servlets

Syntax:

Connection `conn=`

`Class.forName("com.mysql.jdbc.Driver").newInstance();`

*DriverManager.getConnection() method is used to connect to my sql database*

Specify the database url , user name and password as parameter to the getConnection() method

```
conn=DriverManager.getConnection("jdbc:mysql://localhost:3306/exampledatabase","root","root");
```

# Prepared Statement Execution

- Prepared Statement are used to generate Sql statement for a Query String in java
- Syntax:  

```
Prepared Statement ps=conn.prepareStatement("select * from  
Registration where username=? And usertype=?")
```
- Specify the Query String as parameter inside `conn.prepareStatement()` to perform insert or select into database from java
- ? Are place holder where we need to provide the value for a particular query
- In the next line ? We will replace with actual parameter value As  

```
ps.setString(1,"customer1")
```

 –1 denotes the first ? Place  

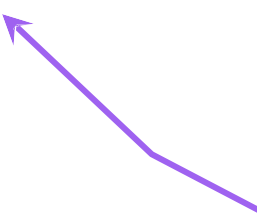
```
ps.setString(2,"customer")
```

 – 2 denotes the second ? Place

Walkthrough to get connect  
to Database from Servlet

# MySQLDataStoreUtilities class to connect Database from Servlet

```
public class MySQLDataStoreUtilities
{
    Connection conn = null;
    public void getConnection()
    {
        try
        {
            Class.forName("com.mysql.jdbc.Driver").newInstance();
            conn=
            DriverManager.getConnection("jdbc:mysql://localhost:3306/exampledatabase"
                                       , "root", "root");
        }
        catch (Exception e)
        {}
    }
}
```

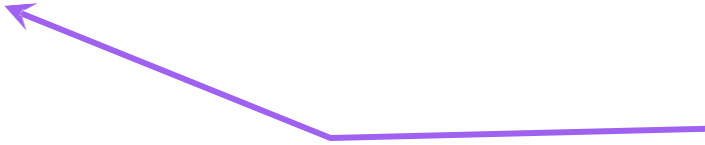


Connecting to  
example  
database

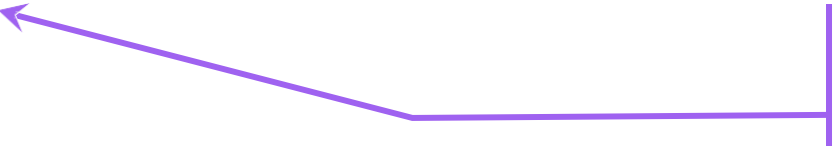
# Walkthrough for User Registration Code Snippet

# User Registration Sample Code

```
HashMap<String, User> hm=new HashMap<String, User>();  
    try  
    {  
        hm=MySQLDataStoreUtilities.selectUser();  
    }  
    catch (Exception e) {}  
    if(hm.containsKey(username))  
        error_msg = "Username already exist as " + usertype;  
    else  
    {  
        User user = new User(username,password,usertype);  
        hm.put(username, user);  
        MySQLDataStoreUtilities.insertUser(...);  
    }
```



Calling utility function  
to select data from  
database and storing  
orders in hashmap



Calling utility function  
to insert user details in  
database



# Utility Function For Registration

```
public static void insertUser(String username,String password,String usertype){
try{
    Class.forName("com.mysql.jdbc.Driver").newInstance();
    conn = DriverManager.getConnection("jdbc:mysql://localhost:3306/exampleda
        tabase","root","root")

    //getConnection();
    String insertIntoCustomerRegisterQuery = "INSERT INTO
        Registration(username,password,usertype) "
        + "VALUES (?, ?, ?);";
    PreparedStatement pst =
        conn.prepareStatement(insertIntoCustomerRegisterQuery);
        pst.setString(1,username);
        pst.setString(2,password);
        pst.setString(3,usertype);
        pst.execute();
    }
    catch (Exception e) {}
}
```

Connecting to  
example  
database

Query to insert  
data to table


Setting Value for Each  
Parameter

Execute method will  
insert data into  
database

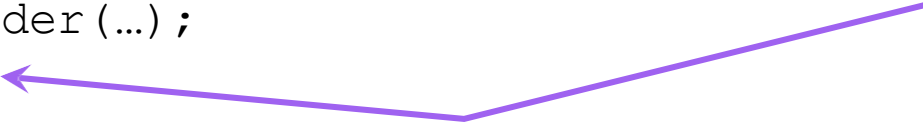
# Walkthrough for Inserting Order Code Snippet

# Storing Order Payments

```
public void storePayment(int orderId,String orderName,double orderPrice,String
userAddress,String creditCardNo){
    HashMap<Integer, ArrayList<OrderPayment>> orderPayments= new HashMap<Integer,
    ArrayList<OrderPayment>>(); try
    {orderPayments= MySqlDataStoreUtilities.selectOrder();
    }
    catch(Exception e){}
    if(!orderPayments.containsKey(orderId)){
    ArrayList<OrderPayment> arr = new ArrayList<OrderPayment>();
    orderPayments.put(orderId, arr);
    }
    ArrayList<OrderPayment> listOrderPayment = orderPayments.get(orderId)
    OrderPayment orderpayment = new OrderPayment (...);
    listOrderPayment.add(orderpayment);
    try
    {MySqlDataStoreUtilities.insertOrder(...);
    }
    }
```



Calling utility function  
to select data from  
database and storing  
orders in hashmap



Calling utility function  
to inserting orders in  
database

# Utility Function for Select Order into hashmap

```
public static HashMap<Integer, ArrayList<OrderPayment>> selectOrder()
{
    HashMap<Integer, ArrayList<OrderPayment>> orderPayments=new HashMap<Integer, ArrayList<OrderPayment>> ();
    try{
        getConnection();
        String selectOrderQuery ="select * from customerorders";
        PreparedStatement pst = conn.prepareStatement(selectOrderQuery);
        ResultSet rs = pst.executeQuery();
        ArrayList<OrderPayment> orderList=new ArrayList<OrderPayment>();
        while(rs.next())
        {
            if(!orderPayments.containsKey(rs.getInt("OrderId")))
            {
                ArrayList<OrderPayment> arr = new ArrayList<OrderPayment>();
                orderPayments.put(rs.getInt("orderId"), arr);
            }
            ArrayList<OrderPayment> listOrderPayment =orderPayments.get(rs.getInt("OrderId"));
            OrderPayment order= new
            OrderPayment(rs.getInt("OrderId"),rs.getString("userName"),rs.getString("orderName"));
            listOrderPayment.add(order);
        }
    }catch(...) {}
    return orderPayments;}

```

ResultSet used to store table data obtained from database in servlet

Iterate through ResultSet and Store each order into class object

# Utility Function for storing orders

```
public static void insertOrder(int orderId,String userName,String orderName)
{
    try
    {
        Class.forName("com.mysql.jdbc.Driver").newInstance();

        conn =
        DriverManager.getConnection("jdbc:mysql://localhost:3306/exampledatabase"
        ,"root","root");
        String insertIntoCustomerOrderQuery = "INSERT INTO
        customerOrders (OrderId,UserName,OrderName) " + "VALUES (?, ?, ?) ";
        PreparedStatement pst =
        conn.prepareStatement(insertIntoCustomerOrderQuery);
        pst.setInt(1,orderId);
        pst.setString(2,userName);
        pst.setString(3,orderName);
        pst.execute();
    }

    catch (Exception e) {}
}
```

Connecting to example database

Query to insert data to table

Setting Value for Each Parameter

Execute method will insert data into database

QUESTIONS?