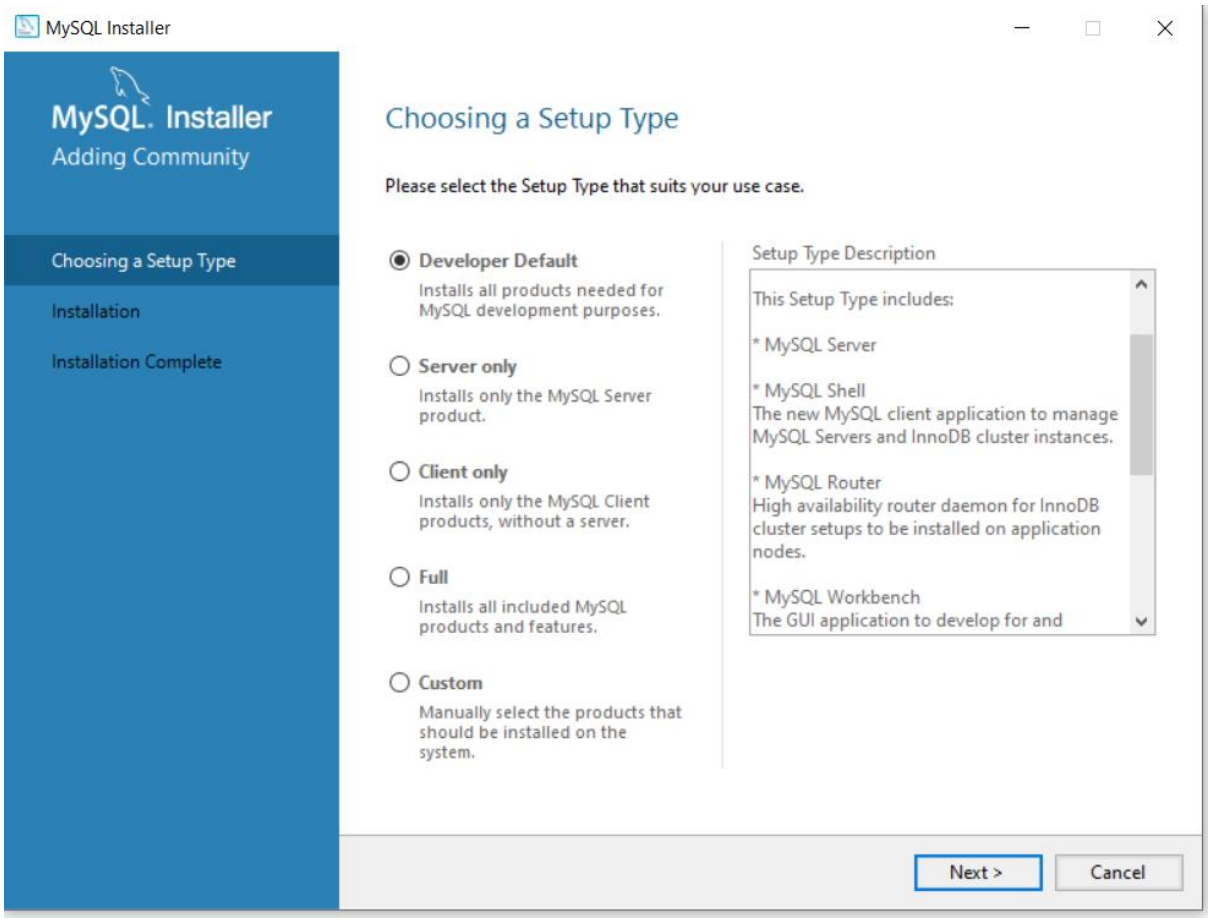
Practical -1 Introduction to MYSQL and Installation

• Installation of MySQL

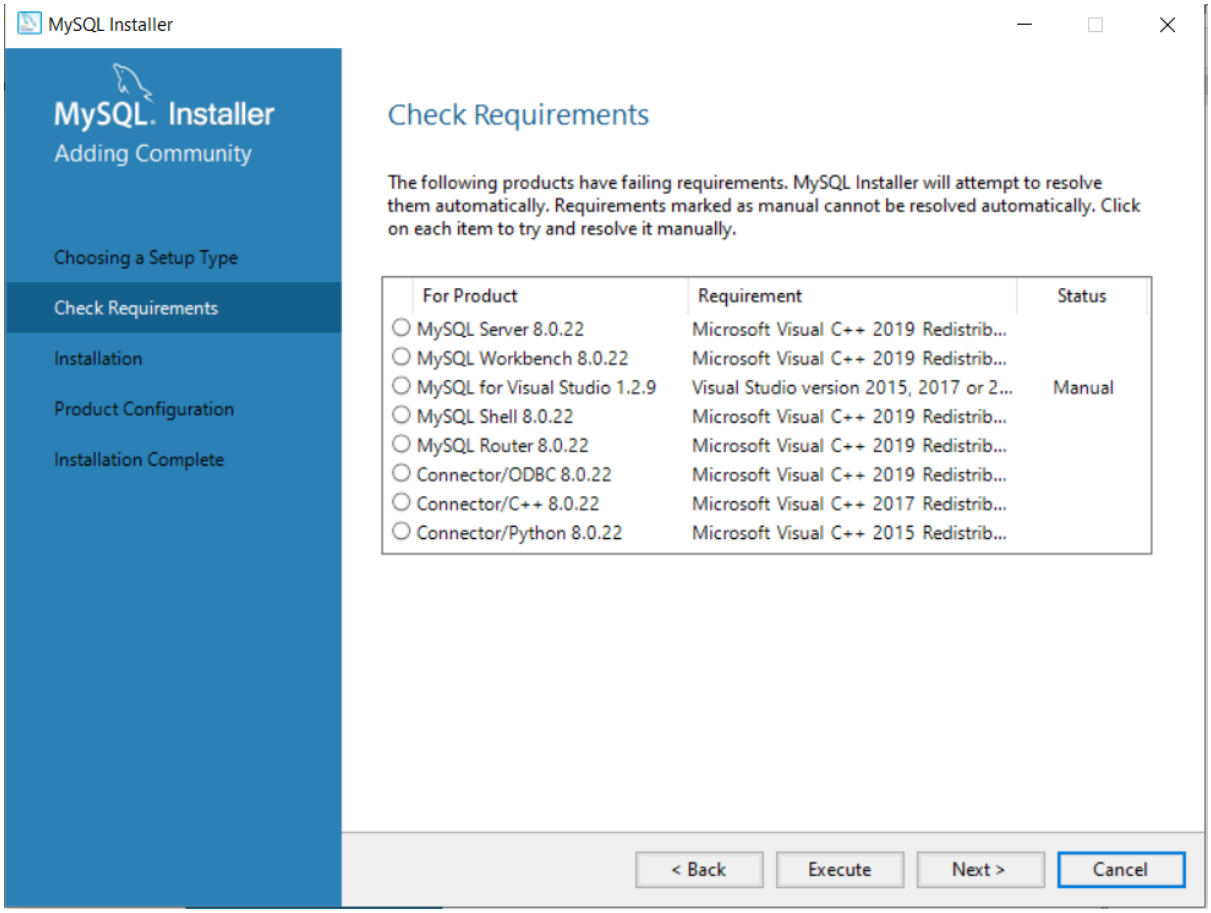
- Minimum Requirements for Windows
    - Microsoft .NET Framework 4.5.2
    - Microsoft Visual C++ Redistributable for Visual Studio 2019
    - Microsoft Windows 10 or Windows Server 2019

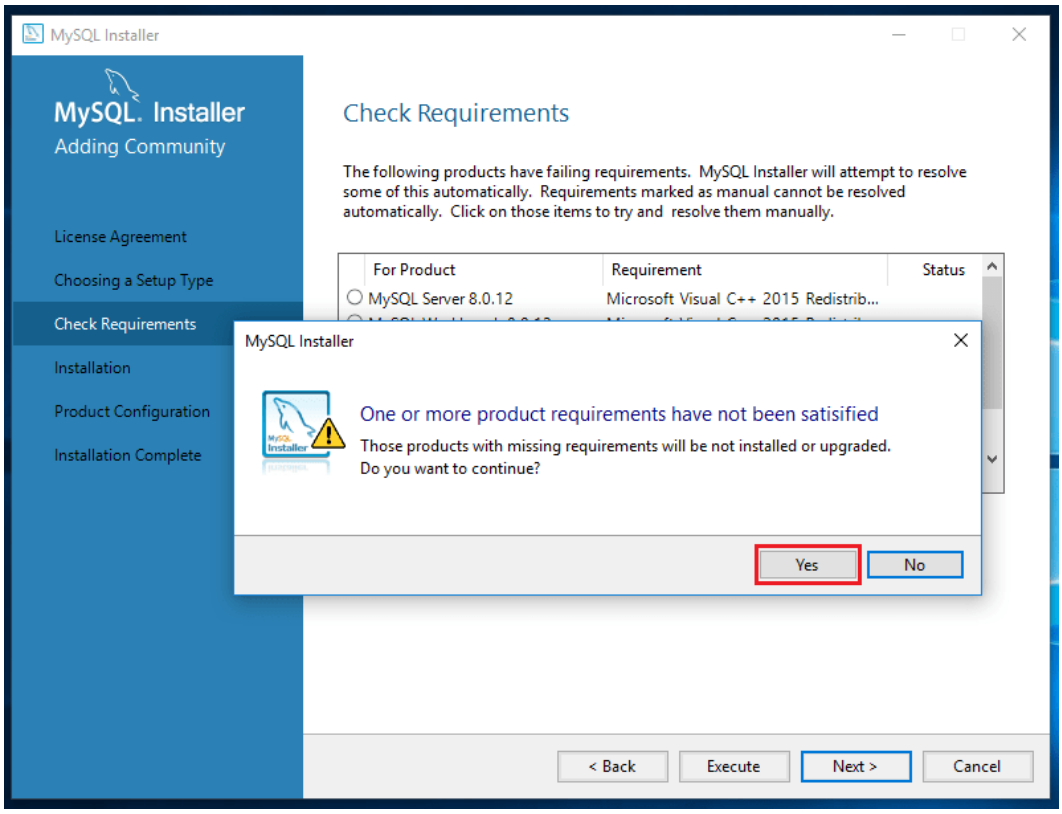
  Available at Microsoft download center
- Download the installer for the MySQL
    - The general MySQL Installer download is available at https://dev.mysql.com/downloads/windows/installer/
    - Select the Mysql-installer-community.msi, click on download
    - It will install MySQL workbench
- Installation Wizard

  Step 1 : select the setuptype



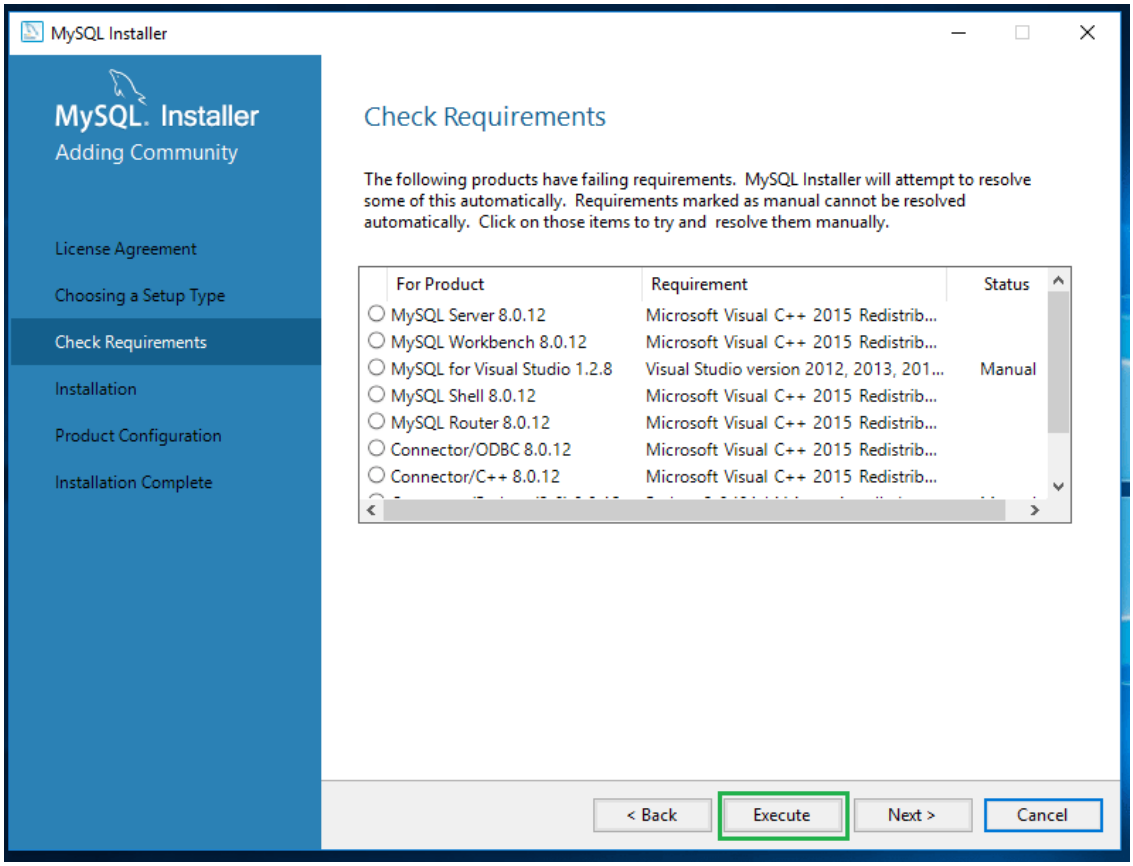
Step 2 : Checking for the requirement


MySQL Installer
MySQL. Installer
Adding Community
Choosing a Setup Type
Check Requirements
Installation
Product Configuration
Installation Complete
Check Requirements
The following products have failing requirements. MySQL Installer will attempt to resolve them automatically. Requirements marked as manual cannot be resolved automatically. Click on each item to try and resolve it manually.
For Product
Requirement
Status
MySQL Server 8.0.22
Microsoft Visual C++ 2019 Redistrib...
MySQL Workbench 8.0.22
Microsoft Visual C++ 2019 Redistrib...
MySQL for Visual Studio 1.2.9
Visual Studio version 2015, 2017 or 2...
Manual
MySQL Shell 8.0.22
Microsoft Visual C++ 2019 Redistrib...
MySQL Router 8.0.22
Microsoft Visual C++ 2019 Redistrib...
Connector/ODBC 8.0.22
Microsoft Visual C++ 2019 Redistrib...
Connector/C++ 8.0.22
Microsoft Visual C++ 2017 Redistrib...
Connector/Python 8.0.22
Microsoft Visual C++ 2015 Redistrib...
< Back
Execute
Next >
Cancel


MySQL Installer
MySQL. Installer
Adding Community
License Agreement
Choosing a Setup Type
Check Requirements
Installation
Product Configuration
Installation Complete
Check Requirements
The following products have failing requirements. MySQL Installer will attempt to resolve some of this automatically. Requirements marked as manual cannot be resolved automatically. Click on those items to try and resolve them manually.
For Product
Requirement
Status
MySQL Server 8.0.12
Microsoft Visual C++ 2015 Redistrib...
MySQL Installer
One or more product requirements have not been satisified
Those products with missing requirements will be not installed or upgraded.
Do you want to continue?
Yes
No
< Back
Execute
Next >
Cancel

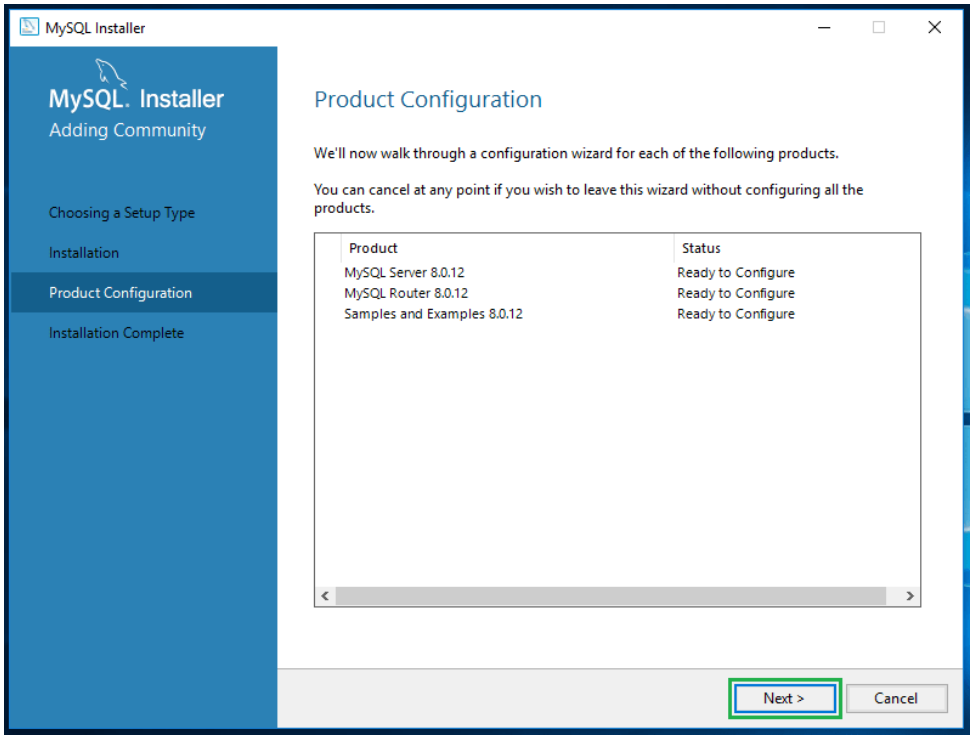
Based on your Windows configuration, it may prompt you like “One or more product requirements have not been satisfied”. You can just click on **YES**

Step 3 : click on the execute button , It will install all required packages.

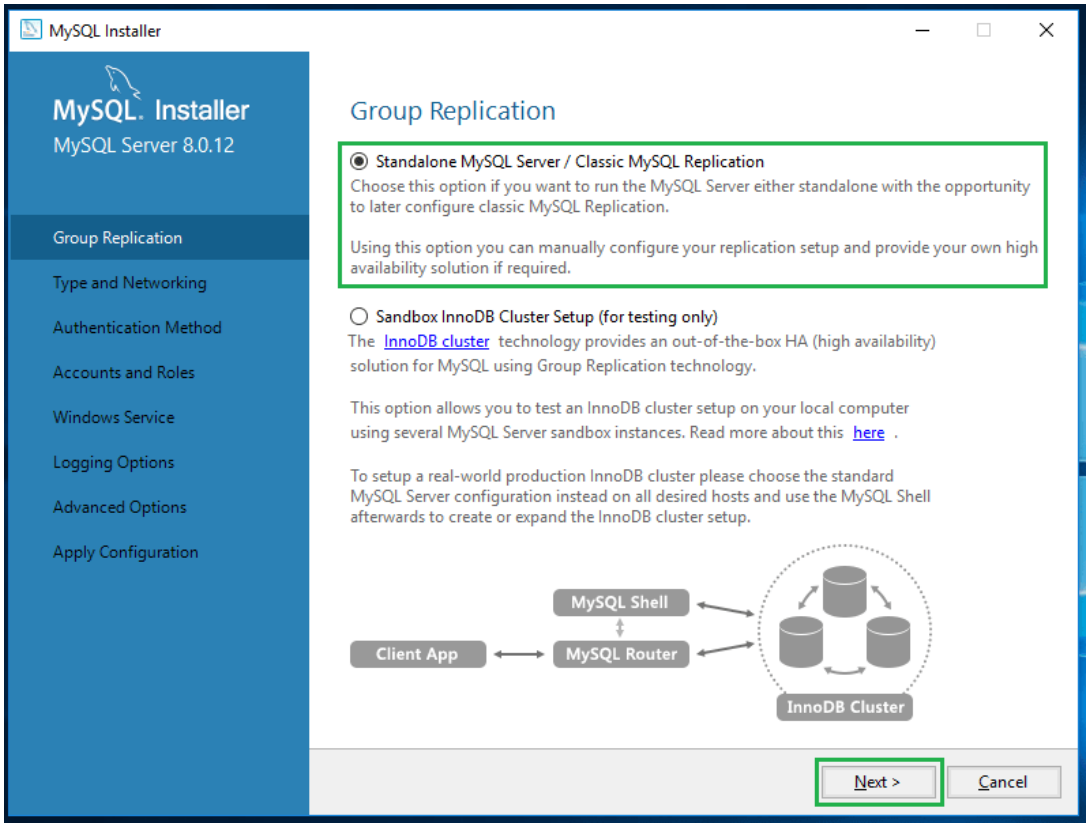


: It will install all the require packages

Step 4 : Upon successful execution of all required products, now the MySQL allows us to configure the server settings. Click on **Next** to configure the server.

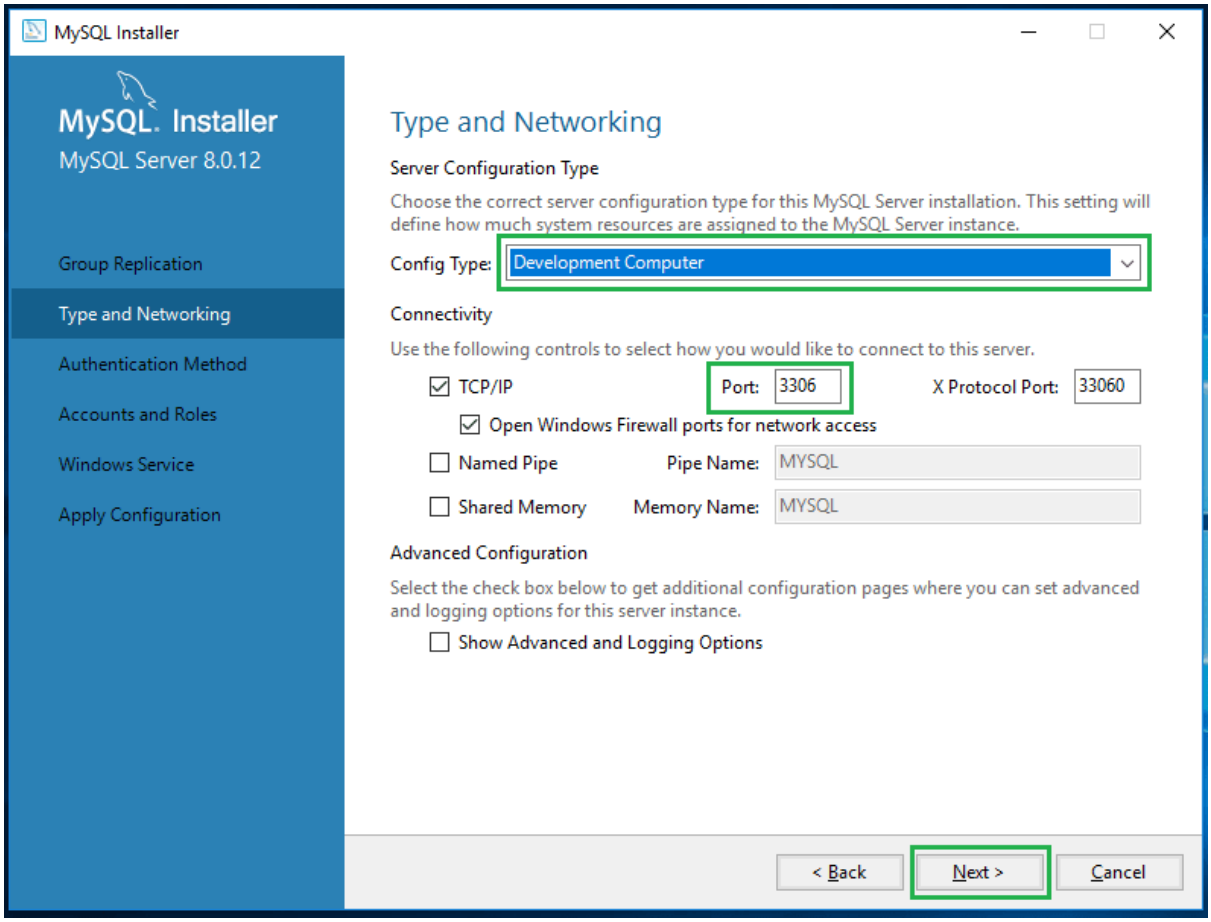


Step 5 : click on next to configure the server.

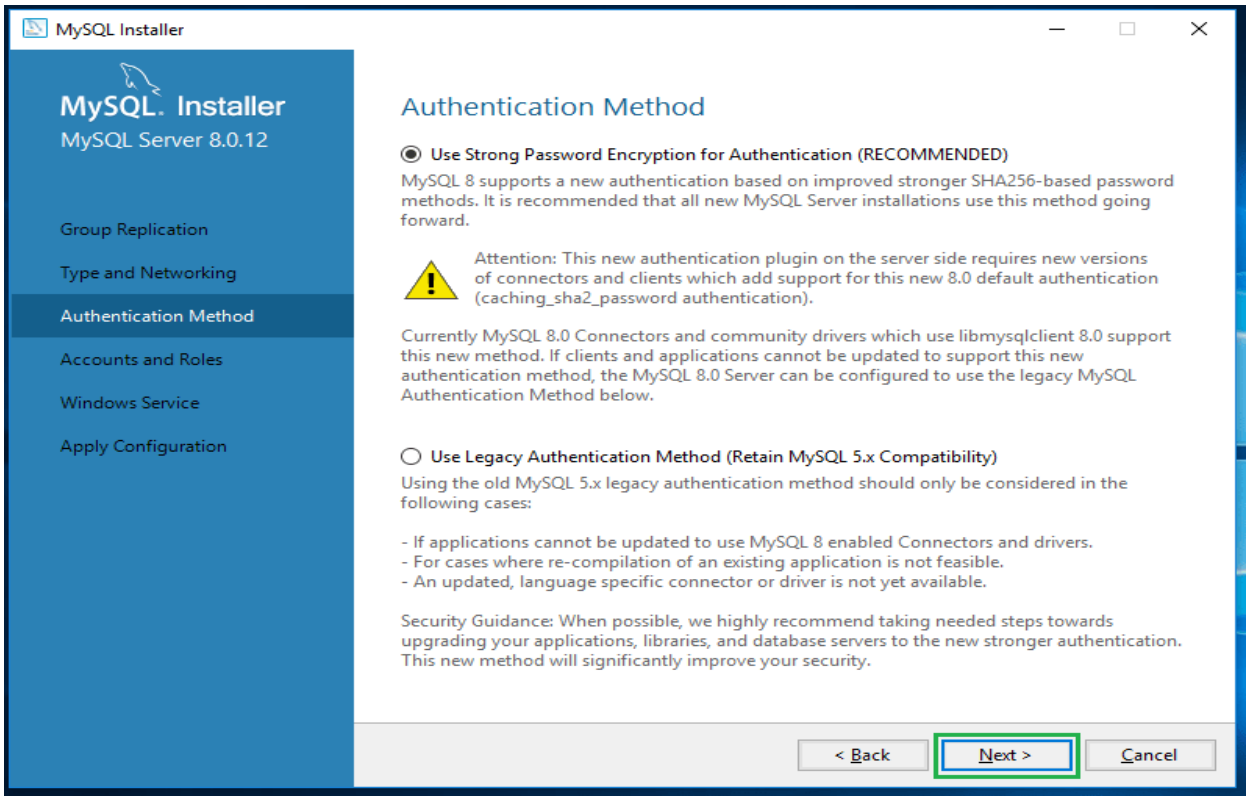


Select the standalone MySQL server option

Steps 6 : Click on Next for network and port configure.

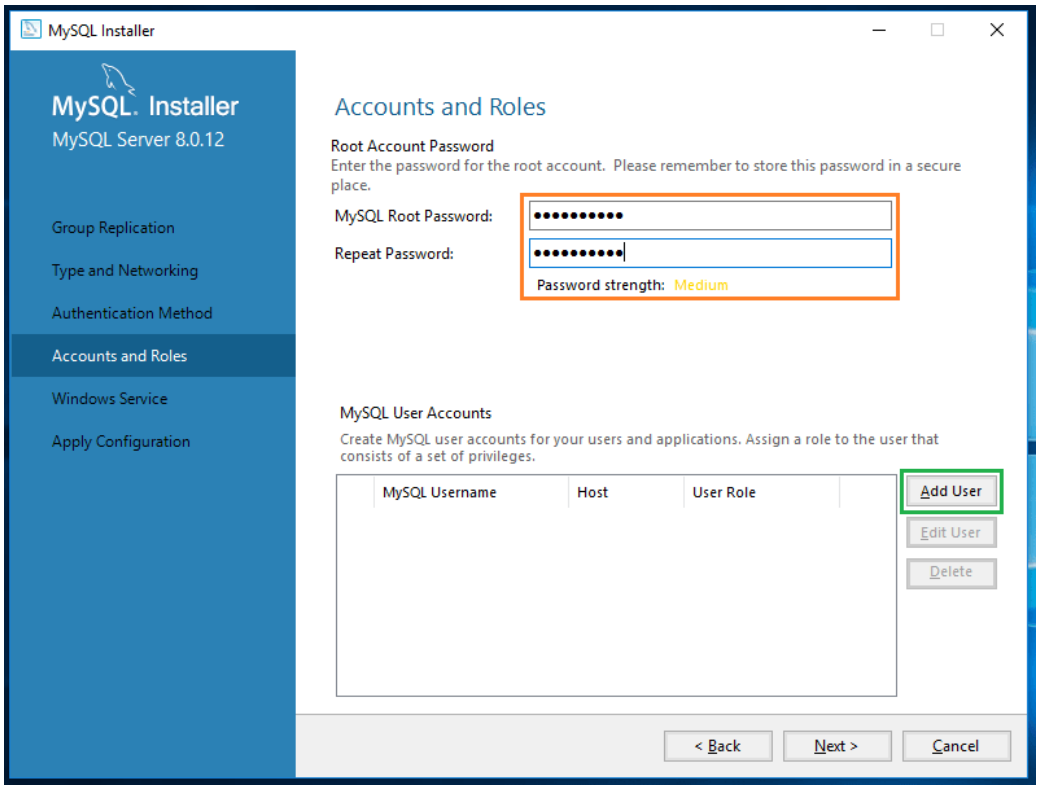


Step 7 : Click on Next for select authentication method

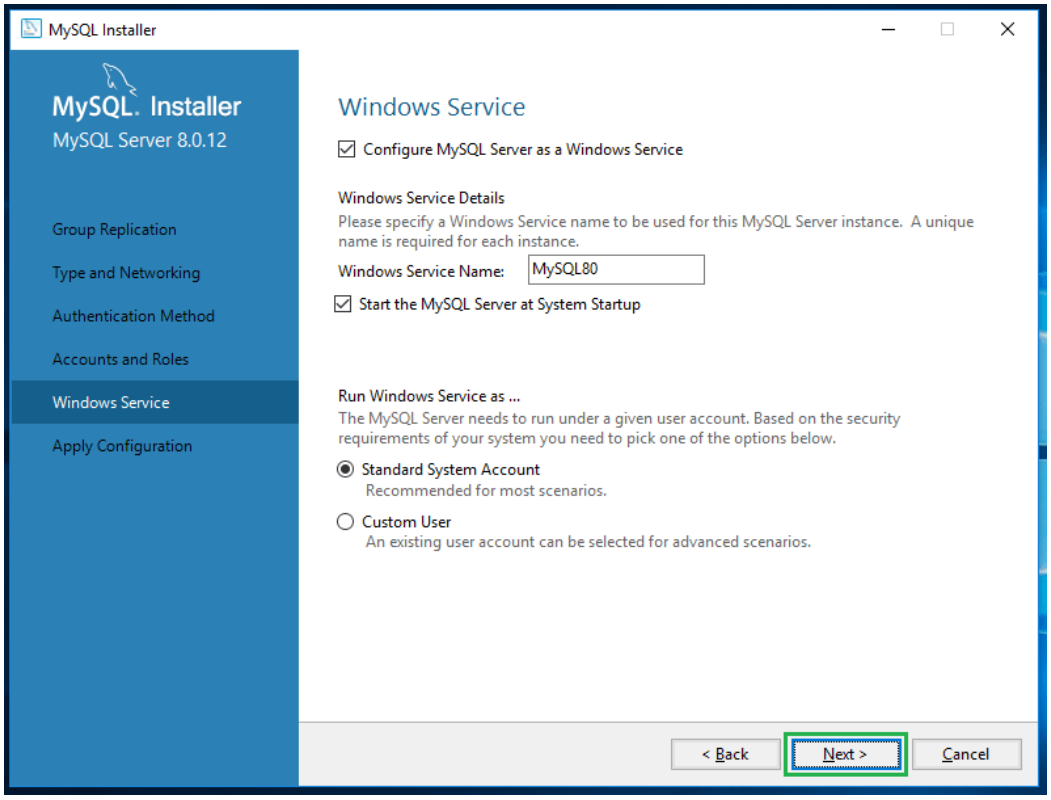


Select strong password encryption option

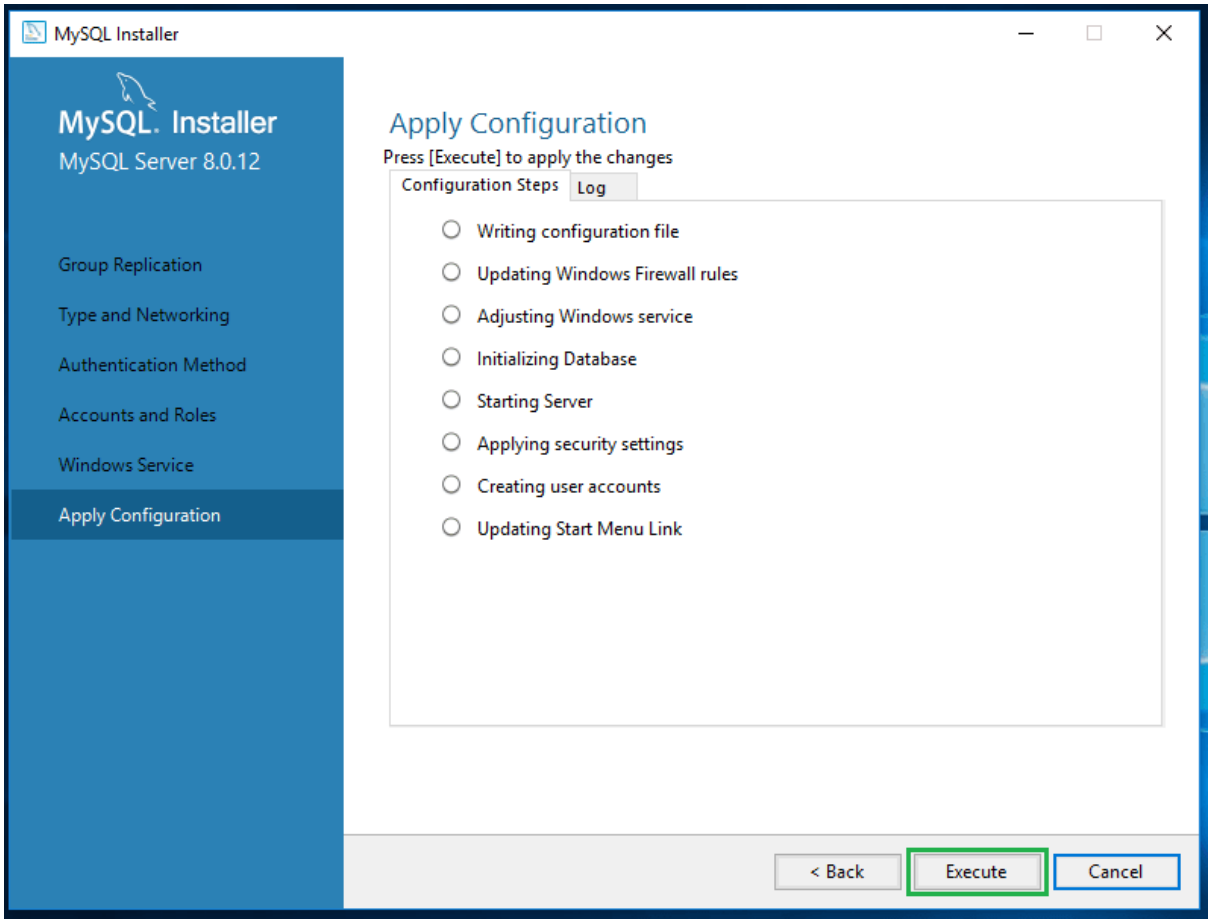
Step 8 : give a password for the user. You can create a new user for the database



Step 9 : Leave the service details as default and click on **Next**.



Step 10 : Click on Next to configuration , then press on execute

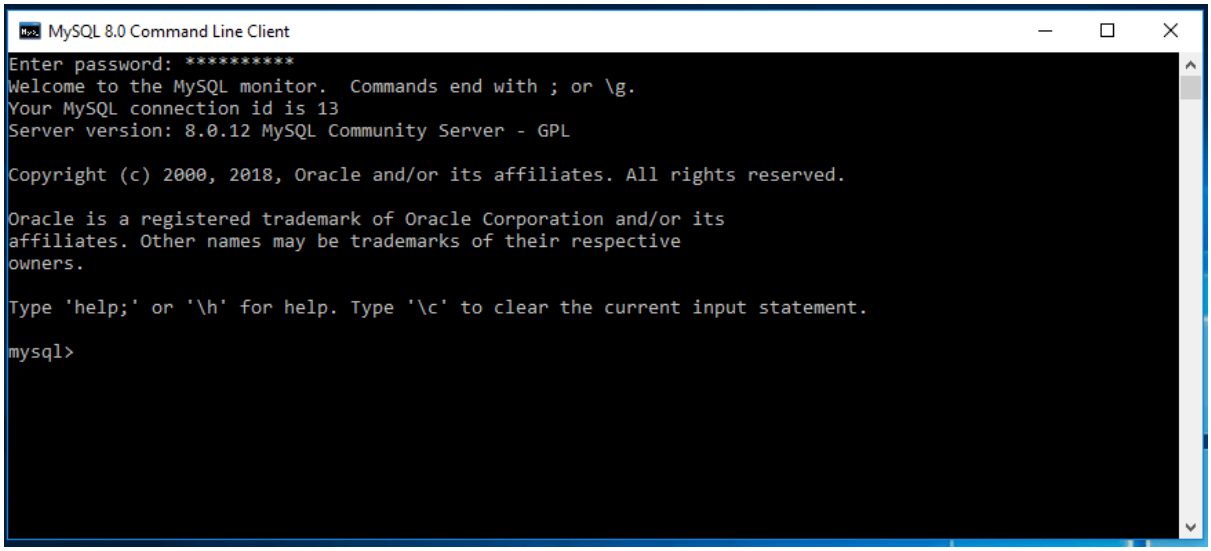


Step 11 : click on finish after configure all.

Step 12 : For test, select start button ,-> select all program -> select MySql Command Line Client

Step 13 : enter password , which set during installation

Step 14 :



- **MySQL Introduction**

MySQL was developed by Michael Widenius and David Axmark in 1994. Presently MySQL is maintained by Oracle (formerly Sun, formerly MySQL AB).

MySQL is (as of July 2013) the world's most widely used open-source relational database management system (RDBMS), enabling the cost-effective delivery of reliable, high-performance and scalable Web-based and embedded database applications.

- **Reasons of popularity**
    - MySQL is an open-source database
    - MySQL supports large databases, up to 50 million rows or more in a table, Default size limit is 4 GB and it can be extends upto 8 TB for a table.
    - MySQL uses a standard form of the well-known SQL data language.
    - MySQL is very friendly with PHP, the most popular language for web development.
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- **MySQL Features**
    - MySQL is a relational database management system.
    - Easy to use: MySQL is easy to use. You have to get only the basic knowledge of SQL.
    - It is secure: MySQL consist of a solid data security layer that protects sensitive data from intruders. Passwords are encrypted in MySQL.
    - Client/ Server Architecture: MySQL follows a client /server architecture. There is a database server (MySQL) and arbitrarily many clients (application programs), which communicate with the server; that is, they query data, save changes, etc.
    - Allows roll-back: MySQL allows transactions to be rolled back, commit and crash recovery.
    - High Performance: MySQL is faster, more reliable and cheaper because of its unique storage engine architecture.
    - High Flexibility: MySQL supports a large number of embedded applications which makes MySQL very flexible.
    - High Productivity: MySQL uses Triggers, Stored procedures and views which allows the developer to give a higher productivity

Numeric Datatype of MySQL

DATATYPE	MAX SIZE
INT	A normal-sized integer that can be signed or unsigned. If signed, the allowable range is from -2147483648 to 2147483647. If unsigned, the allowable range is from 0 to 4294967295. You can specify a width of up to 11 digits.
TINYINT	A very small integer that can be signed or unsigned. If signed, the allowable range is from -128 to 127. If unsigned, the allowable range is from 0 to 255. You can specify a width of up to 4 digits.
SMALLINT	A small integer that can be signed or unsigned. If signed, the allowable range is from -32768 to 32767. If unsigned, the allowable range is from 0 to 65535. You can specify a width of up to 5 digits.
BIGINT	A large integer that can be signed or unsigned. If signed, the allowable range is from -9223372036854775808 to 9223372036854775807. If unsigned, the allowable range is from 0 to 18446744073709551615. You can specify a width of up to 20 digits.
FLOAT(m,d)	You can define the display length (m) and the number of decimals (d). This is not required and will default to 10,2, where 2 is the number of decimals and 10 is the total number of digits (including decimals). Decimal precision can go to 24 places for a float.
DOUBLE(m,d)	(d). This is not required and will default to 16,4, where 4 is the number of decimals. Decimal precision can go to 53 places for a double.

Date & Time Datatypes

DATATYPE	MAX SIZE	EXPLATION
DATE	Values range from '1000-01-01' to '9999-12-31'.	Displayed as 'yyyy-mm-dd'
DATETIME	Values range from '1000-01-01 00:00:00' to '9999-12-31 23:59:59'.	Displayed as 'yyyy-mm-dd hh:mm:ss'.
TIME	Values range from '-838:59:59' to '838:59:59'.	Displayed as 'HH:MM:SS'

String Data Types:

DATATYPE	MAX SIZE	EXPLATION
CHAR(size)	Maximum size of 255	Where size is the number of characters to store. Fixed-length strings. Space padded

		on right to equal size characters.
VARCHAR(size)	Maximum size of 255 characters.	Where size is the number of characters to store. Variable-length string.
TEXT(size)	Maximum size of 65,535 characters	Where size is the number of characters to store
LONGTEXT(size)	Maximum size upto 4 GB characters	Where size is the number of characters to store.
VARBINARY(size)	Maximum size of 255 characters.	Where size is the number of binary characters to store. Variable-length string. (introduced in MySQL 4.1.2)

Large Object Data Types (LOB) Data Types:

DATATYPE	MAX SIZE	EXPLATION
TINYBLOB	Maximum size of 255 bytes.	
BLOB(size)	Maximum size of 65,535 bytes.	Used to store the image in database

Exercise :

1. Install MySQL
2. Type command in mysql prompt for testing

   > show databases;

3. Define the datatype and size for the following information.
   - Name of the person
   - Birthdate of the person
   - Salary of the person
   - Age of the person
   - Student percentage