

# Maple

The Data Dictionary and Data Mapping Tool

System Manual

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# 1 Prerequisites

The following has been written with MacOS as its primary target. Concessions have been made to Microsoft Windows installations, but is not perfectly universal; for example, where “terminal” has been written, substitute “command prompt” if you are using such a device. GNU/Linux users are advised to read the subheadings and locate the appropriate versions of the required software for their machines themselves.

You can follow the steps outlined below to make sure your device is set up and ready to use Maple.

## 1.1 Ruby

Ruby is the primary dependency in order to run this project. First, head to the terminal and type **ruby -v**. If you don't get an error and it shows a version number at or above 2.2.2 then type **gem --version**. If you don't get an error here then you can skip this section and head to section 1.3.

If you do not have Ruby installed then you can download the installation package from <https://www.ruby-lang.org/en/> and clicking the download button.

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**Ruby is...**  
A dynamic, open source programming language with a focus on simplicity and productivity. It has an elegant syntax that is natural to read and easy to write.

[Download Ruby](#) or [Read More...](#)

```
# The Greeter class
class Greeter
  def initialize(name)
    @name = name.capitalize
  end

  def salute
    puts "Hello #{@name}!"
  end
end

# Create a new object
g = Greeter.new("world")

# Output "Hello World!"
g.salute
```

Support of Ruby 2.1 has ended  
We announce that all support of the Ruby 2.1 series has ended.  
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Ruby 2.3.4 Released

**Get Started, it's easy!**  
[Try Ruby! \(in your browser\)](#)  
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This will take you to a downloads page where you can download the most recent stable release for your platform.

### Compiling Ruby — Source Code

Installing from the source code is a great solution for when you are comfortable enough with your platform and perhaps need specific settings for your environment. It's also a good solution in the event that there are no other pre-made packages for your platform.

See the [Installation](#) page for details on building Ruby from source. If you have an issue compiling Ruby, consider using one of the third party tools mentioned above. They may help you.

- **Stable releases:**
  - [Ruby 2.4.1](#)  
sha256:  
a330e10d5cb5e53b3a0078326c5731888bb55e32c4abfeb27d9e7f8e5d000250
  - [Ruby 2.3.4](#)  
sha256:  
98e18f17c933318d0e32fed3aea67e304f174d03170a38fd920c4fbe49fec0c3
- **In security maintenance phase (will EOL soon!):**
  - [Ruby 2.2.7](#)  
sha256:  
374184c6c5bbc88fb7bad422368d4053a236fb6587f0eff76146dcba5793da5
- **Not maintained anymore (EOL):**
  - [Ruby 2.1.10](#)  
sha256:  
fb2e454d7a5e5a39eb54db0ec666f53eeb6edc593d1d2b970ae4d150b831dd20

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[Ruby Core](#): Help polish the rough edges of the latest Ruby.

[Issue Tracking](#): Report or help solve issues in Ruby.

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## 1.2 Rails

You should now have Ruby installed along with Gem, a sort of package manager bundled alongside it which provides libraries to extend the framework's functionality. You can now install Rails by typing in `gem install rails` in your terminal. This will install Rails for you and everything you need to run a basic Rails application.

You can check that you installed Rails correctly by typing in `rails -v` in the terminal. If you see a version number in the output, congratulations! You're halfway there.

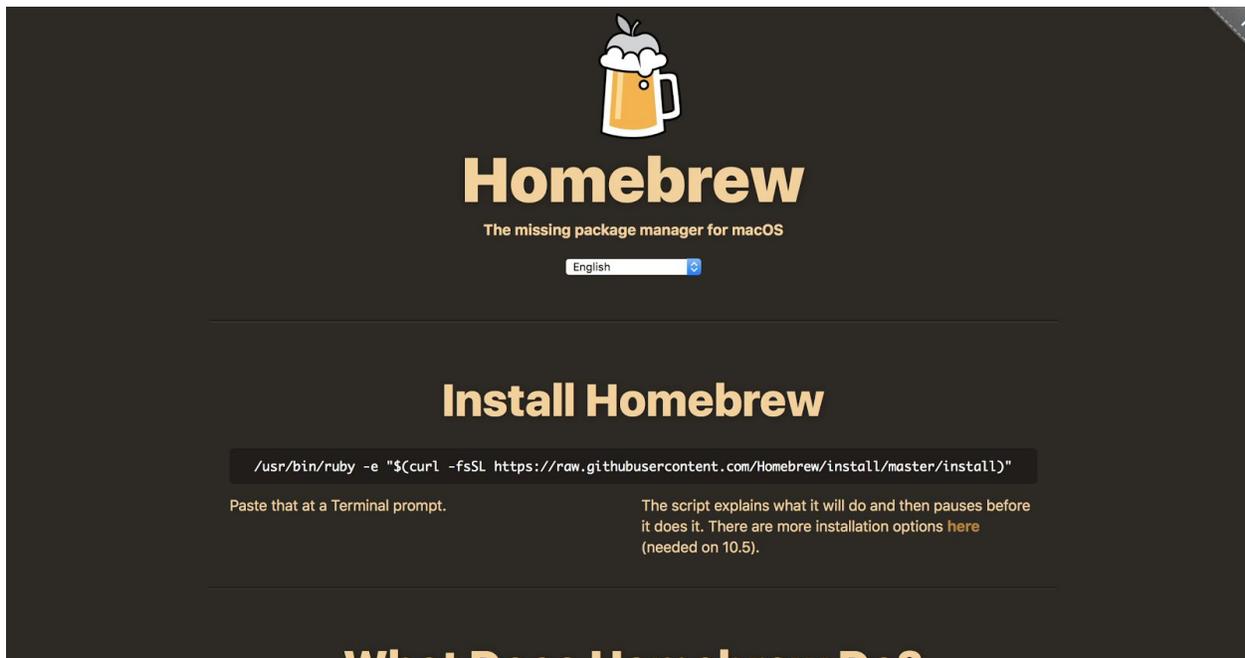
## 1.3 MySQL

You now need to make sure you have MySQL installed as the application requires this. To do this type - `mysql --version` in your terminal and if you have MySQL installed you will get a version number shown. If you don't then you need to follow the following steps to install MySQL.

### 1.3.1 Homebrew package manager (MacOS)

Check if you have it installed by typing in `brew update` within your terminal. If you don't get any errors, you already have brew installed and so you can move straight to the installation of MySQL further down.

If you get an error when typing `brew update` then it means you don't have brew installed. Go to <https://brew.sh> and you should see a screen that looks like the one below.



Copy the terminal command and paste it into your terminal. This will install brew on your machine.

Now that brew is installed, type `brew install mysql` into your terminal. This will install MySQL and all its packages using homebrew that we installed earlier.

Now type `brew services start mysql`. This will make sure that MySQL is always running in the background of your computer so that your application will work and you don't have to manually enable it everytime.

You now need to secure your MySQL by typing `mysql_secure_installation` and following the on screen prompts. Once you have this complete, MySQL is installed and ready for use.

### 1.3.2 Official installer (Microsoft Windows)

Typical to Windows users, the best option for this platform is to navigate straight to <https://mysql.com> and locate the Downloads page.

The screenshot shows the MySQL website homepage. At the top, there is a navigation bar with the MySQL logo and the tagline "The world's most popular open source database". Below the logo are several navigation tabs: "MySQL.com", "Downloads", "Documentation", and "Developer Zone". A secondary navigation bar includes "Products", "Cloud", "Services", "Partners", "Customers", "Why MySQL?", "News & Events", and "How to Buy". The main content area features a large banner for "MySQL InnoDB Cluster" with three key features: "Native High Availability", "Easy to Use", and "Integrated Solution". Below the banner are three product cards: "MySQL Enterprise Edition", "MySQL for OEM/ISVs", and "Oracle MySQL Cloud Service". At the bottom, there are three columns of links: "Free Webinars", "White Papers", and "MySQL Engineering Blogs".

We have used MySQL Community Edition in order to develop Maple whilst avoiding licensing fees, as this project has been undertaken as part of our education. It is up to you whether this is an appropriate choice for your usage of Maple; other editions should behave identically for the purposes of installation and day-to-day usage, but we are unable to offer any advice should functionality or legality differ.

Follow the user interface's recommendations for installation; the only default setting that has been changed on the developer's Windows machines is the password.

## 1.4 - Creating the database

In order to allow Ruby and MySQL to communicate, it is necessary to install the MySQL Gem by typing `gem install mysql2` into the terminal.

You now need to create a MySQL database that is used by our application. This can be done by logging into MySQL within your terminal console with `mysql -u -root` and when prompted typing the root password you created.

Once logged in, you can create the database needed by typing in **CREATE DATABASE maple\_project\_development**

This will create the database which we now need to give access rights to Ruby. This can be done by typing

```
GRANT ALL PRIVILEGES ON maple_project_development.* TO
'rails_user'@'localhost' IDENTIFIED BY 'maple';
```

You should now have all the prerequisites installed in order to actually use Maple.

## 2 Maple

You are now ready to use Maple!

Clone the repo at <https://github.com/SystemsEngineering2016/Maple> into a location of your choosing. Once the repo is cloned, navigate to the **maple\_project** directory within the terminal.

Within this directory, there are two things you should type in the terminal, one after the other.

First, type `rails db:migrate`. This will ensure that the Maple data model is imparted onto the MySQL server, allowing for the system to perform operations on the database without error. The second thing is to type `rails s`, which will start up the Rails web server.

You can now locate to your web browser and type in <http://localhost:3000> where you should be able to view Maple as shown below.

