Local Environment Setup

# Overview

This worksheet explains how to set up a local development environment. This will allow you to work much more efficiently and give you the freedom to experiment. It is also a much more usual way of working on web development. Developers never code on a live server! They will develop locally, test locally, then deploy to a server using FTP:

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# Installing the software on your own computer

We will use **Visual Studio Code** as our code editor (instead of vi or nano). You could choose another editor if you have a favourite. We will also use **Filezilla** to transfer files to the virtual server. You will also need to install **node** locally. And you can install the **MySql Server** and the handy **MySql Workbench**. Let’s install them.

1. Download and install node.js from here: <https://nodejs.org/en/>
2. Download and install Visual Studio code from here: [https://code.visualstudio.com](https://code.visualstudio.com/)
3. Download and install Filezilla from here: <https://filezilla-project.org/>
4. Download and install MySQL Community Server from here: <https://dev.mysql.com/downloads/mysql/>

Currently on Windows you have this option that also installs the Workbench:

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On the Mac install the appropriate one for your hardware:

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For the most part you can choose the default options, but for the Authentication method choose “Legacy Authentication”. On Windows it looks like this:

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On Mac it looks like this:

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You will be asked to enter your root password. Make sure you remember it!

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1. If MySql Workbench did not install as part of the main MySql install you can install it separately from here: <https://dev.mysql.com/downloads/workbench/>

Once installed you should be able to run it:

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# Create your web app

Now that you have everything installed, you can edit your code, run it and test it on your local computer instead of on the virtual server.  Let’s go through that process with a simple “hello world” app:

1. On your local computer, start up a terminal session. On Windows search for Command Prompt:

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On a Mac search for Terminal:

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1. Enter the following to create an initialise the new web app:

*local terminal*

mkdir hello-local

cd hello-local

npm init

1. Start up Visual Studio Code and open the folder hello-local (File🡪Open Folder). You should see the folder and the package.json file:

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1. Create a new file:

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Call it index.js. Enter the code we used last week:

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Save the file.

### Test your web app locally

1. Now run it from the Run Without Debugging menu:

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You should see a debug console appear confirming that you node app is running:

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1. Go to your browser to see your app running (by entering localhost:8000):

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Note that the web app is running locally, on your own computer. It’s not on the virtual server.

### Deploy your web app to the virtual server

Once you have finished testing it you can copy it to the virtual server using Filezilla.

1. Set up an SSH tunnel from your computer to the virtual server. From a terminal session:

ssh -N -L 9999:myserver:2123 jbond007@doc.gold.ac.uk

Replace 123 with your virtual server is and jbond007 with your username.

1. Start up Filezilla.

Connect to your virtual server through the SSH tunnel:

Enter "sftp://localhost" in the "Host" box and 9999 in the "Port" box. Then enter your username and server password in the relevant boxes.  Then click "Quickconnect".



You should see your local folders on the left and the virtual server folders on the right:

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1. You can then drag-and-drop your code to the server.

### Run your web app on the virtual server

1. You can now run the web app on the virtual server as you have done previously, by browsing to https://www.doc.gold.ac.uk/usr/ID/

# Using MySql Locally

1. Start up MySql Workbench

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1. Click on the box that says “Local instance MySQL80”. This will connect to the MySql Server running on your local computer. You should see a window like this:

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1. Enter a command in the query window:

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1. Hit the lightning bolt to run all the commands in the query window. You should see a confirmation at the bottom of the screen, showing the results of the command.
2. When you enter another command, select the command and hit lightning bolt to run just that command:

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1. If you need a new query tab press this icon:

Text

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