**Setting up folder structure & coding environment**

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## Introduction

This Laboratory 0 discusses how you should set up your project files for your Mobile Web 3D Applications (3D App) site.

## Setting up your local and remote files

You probably already know that a web *site* generally consists of two parts:

1. A collection of files on a local computer (the local site). For example, this could be your site files on your own laptop, or your University Home Share / drive on the Lab machines
2. And, a location on a remote web server where you upload files when you're ready to make them publicly available (the remote site). The remote server could be provided by your ISP (Internet Service Provider), but in the case of this module, we will be using the University ITS (Information Tech ology Services) Web Server.

For this tutorial document as you move forward, I assume that you will use **Visual Studio Code**, which has a built-in file manager to manage the files for your site. Alternatively, you may be using some other code editor and your local file system to manage your files. Normally, you would create a website by creating and editing pages on your local drive — you should all know your local drive details provided by the School of Engineering and Informatics. You would then upload copies of those pages to a remote web server — in this case, your public\_html location on the ITS web server — for viewing on the web.

Your first step will be to set up a local site and a remote site (ITS Web Space) that you will need to keep synchronised. This effectively mean that we need to set up what is commonly referred to as a **local folder** structure and a **remote folder** structure.

## Step 1: Setup your Sussex webspace

Set up webspace by following instructions using the link below. You might have done this as a part of another module. Once you set your webspace, it creates a folder public\_html. <https://www.sussex.ac.uk/its/webspace/>

## Step 2: Setup your folder structures for the module

* **Local folder**: Set up a folder on your local drive, e.g. your lab Home Share drive or somewhere on your laptop, for example in my case I tend to use Dropbox. Call this local folder 3dapp, or whatever you like that makes sense. Locate it somewhere sensible, e.g. as I already said, your Home Share drive, or Dropbox … your PC documents folder, wherever. Another useful place for the Local Folder (if you always do your development work in the School labs) is to create a development folder off your public\_html folder for, e.g. /public\_html/3dapp/labs/lab1. A good reason for at least keeping a copy of your local folder here is that it is actually live on the ITS web server — this means you can test your work immediately online. And, that also means that I can actually see your result online and I can access this space remotely to help debug if necessary.
* **Remote folder**: In your case, eventually for your assignment, you will have to submit online to your /public\_html/ folder, i.e. your Sussex ITS personal web space. As such, it is a good idea to get used to using this ITS space. For example, you should get used to organising your files on the ITS server something like: /public\_html/3dapp/labs/lab1. You can use something similar for lab 2, lab3, and so on. Then for your assignment hand-in you would use /public\_html/3dapp/assignment
* Note that I have already specified exactly this path as the one I want you to use for your assignment because although we ask you to submit proof of your last file uploaded for your assignment we still may run a shell script that crawls this location hunting for the date and time of your last file submitted. Further, I need to know exactly your assignment URL path; **otherwise, I can’t mark your work!**

## Step 3: Set up your local development environment

During the course of this module you will be focusing on creating the front end (view), business logic (control) and back end data store (model) using a MVC (model, view, controller) design pattern for your 3D App that exploits a full web development stack: HTML5, CSS3, JavaScript (JQuery), AJAX and PHP. Therefore, you will need access to a PHP environment set up in your public\_html space on the ITS web server — this is automatically set up for you when you apply for your Sussex ITS web space, if you haven’t already got this check out: <https://www.sussex.ac.uk/its/webspace/> and follow the steps provided.

This further implies that you may need to set up a local host on your home PC or laptop, particularly if you want to work from home — of course, if you do all your work in the departmental labs, then you won’t need a localhost. However, I recommend setting up [XAMPP](https://www.apachefriends.org/index.html) or [MAMP](https://www.mamp.info/en/) for both Macs and PCs. There are others, e.g., [WampServer](http://www.wampserver.com/en/), …. Those of you using a Mac might not know that [Macs also comes with a built-in web server](https://discussions.apple.com/docs/DOC-3083), but you have to set it up, and it is slightly different for each Mac OS.

Once you have a localhost installed, you will set it up to see your local site so you can begin building your initial web pages right away.

### Keeping track of your sites

In Visual Studio Code, Brackets, Dreamweaver CC, and probably other decent code editors, you can set up a site to organize (on your local computer, Dropbox, …) all the documents associated with your website. Depending on the code editor you choose to use, it may let you track and maintain links, manage files, share files, etc. In the case of Dreamweaver CC, it also lets you transfer your site files to a web server using a built-in SFTP client. In the case of this tutorial, using Visual Studio Code, you can edit and manage your files, store them in a GitHub repository, and you can also use a built-in command line tool. On the other hand, if you want to keep it very simple and use, for example, Notepad++, then for **site management** you would use your PC file system, and some common sense to manage the files for your site.

## Step 4: Setup a SFTP client to remote update your site

To transfer files to the remote web server, you will need to use a secure file transfer protocol (SFTP) client such as FileZilla, CyberDuck, the built-in Dreamweaver SFTP client, WebDrive, or simply dump your working files on a USB stick and import it onto your Home Share /public\_html directory. You should be able to access a fuile transfer client, such as WebDrive through the University Software Hub that you can install on your own PC or laptop.

In some circumstances, you might have more than one remote folder. For example, if you work in a team environment, all members of the team might upload their files to a common testing server before they are deployed on the live website. Also, it’s normal to set up a testing server when developing websites that use a server-side technology, such as PHP.

A typical setup for you if you decided to only develop your 3D App in the lab might be:

* **Local Site**: Home Share /3dapp/labs/lab1
  + - You would not need a localhost for testing here, because you would simply copy your site to the Testing Site.
* **Testing Site**: Home Share /public\_html/3dapp/labs/lab1
  + - This is effectively live, so for example, if this was my public\_html web space I could access (or test it) using: users.sussex.ac.uk/~martinwh/3dapp/labs/lab1/ and assuming I had an index.html or index.php file at this location it would be rendered in a web browser.
* **Remote Site**: Home Share /public\_html/3dapp/assignment
  + - Same as for the testing site, this is obviously live, and accessed as such: users.sussex.ac.uk/~martinwh/3dapp/assignment/

Clearly, both the testing site and the remote site are live, i.e. they are on the University Web Server.

**Note:** In general, the root folder of your site is normally the main or top-level folder for your website. It usually corresponds to a folder called public\_html, www, or www root on your remote server. For example, if you have a website at www.3dapp.com, and have a file called index.php in the root folder, its URL is:

* http://www.3dapp.com/index.php

So, to be clear, if you have chosen Home Share /3dapp/lab1, where Home Share / is your *pathvariable* for your **Local Site**, and if you then use Home Share /public\_html/3dapp/lab1 as your **Remote Site** or **Testing Site** for Lab 1, then to go live, all you need to do is copy your local site to your remote site.

In this case, you will be able to access your Lab 1 result from:

* http://users.sussex.ac.uk/~username/3dapp/lab1/index.html

Where username is obviously your particular Sussex username.

Similarly, for this **Mobile Web 3D Application** module, when your **Mobile Web 3D Application** is finished (e.g. your **final assignment**) it will be accessed from:

* http://users.sussex.ac.uk/~username/3dapp/assignment/index.php

You can see that your specific public\_html directory maps to users.sussex.ac.uk/~username, while your web site has to have an index.html (or index.php) to set up the server environment. That’s the way ITS have done it.

## Step 5: Understand and correct common errors

‘Directory listing error’ and ‘Permissions not set up’ are some of the common errors you may make when dealing with a Unix environment

### Solution - If you are using a lab machine

To check that the right file permissions are in place:

* launch PuTTY and enter the host name **unix.sussex.ac.uk** and click **OK**
* click **OK** if asked to confirm the site's certificate
* enter your username and password if requested
* type **ls** and press enter
* this will show a list of your folders, including **public\_html** where your web sites are kept
* type **chmod o+x public\_html**(this ensures that the permissions on public\_html will allow access)
* now go up one level in the file structure by typing **cd ../** and enter
* to ensure that the same access is set on your home directory, type chmod o+x followed by your username - so if your username were ano23, you would type **chmod o+x ano23** and enter
* type **exit** and enter to finish and close PuTTY

### Solution - If you are using your personal PC

FileZilla or Cyberduck etc.

Login to your webspace using FileZilla.

Right-click on the folder and select permission. You can use numeric values or checkboxes to change permission. Make sure that you select recursive into subdirectories as shown in the image below.

![Graphical user interface

Description automatically generated]()