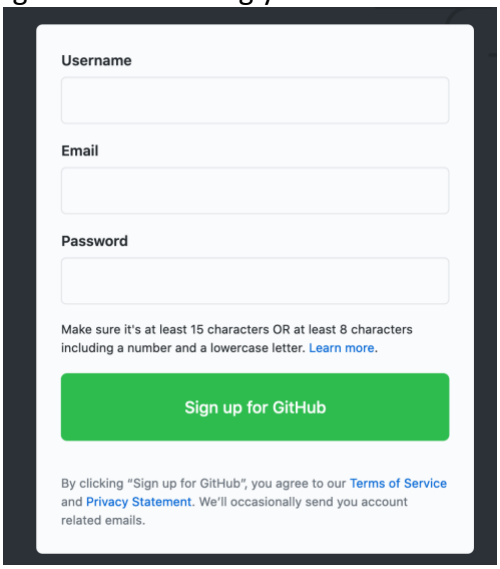
F28WP Web programming
Lab Sheet 1
Installation and Configuration

Lab activities to help you prepare the development environment and configure your GitHub for the coursework.

1.1 GitHub

Git is an open source version control system. GitHub is an online system based on Git that provides many additional functionalities, especially for managing projects.
Connect to https://docs.github.com/en/github/getting-started-with-github.
This web site provides documentation on GitHub. Make sure you understand the main concepts (repository, organization, master, branch, issue…) and operations (fork, clone, commit, merge).

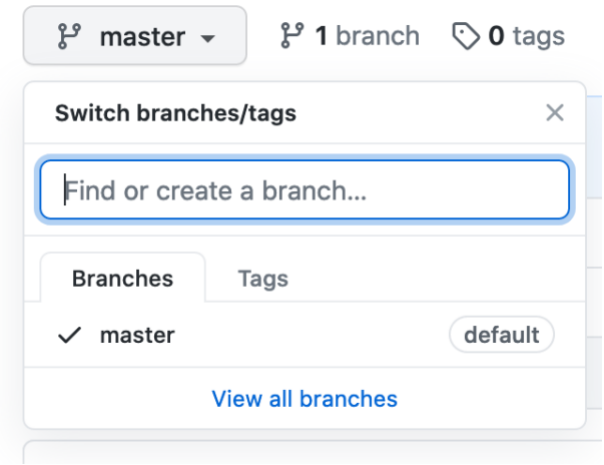
Sign up to GitHub by creating an account using your Heriot Watt University email address.



Create a public repository named F28WP-lab1. Edit the readme file to explain the content of your repository.

Create a new file in your repository (file1.txt). Note that you are asked to commit the file to the master branch. You need to provide a commit message and a description of the change you just made to the repository.

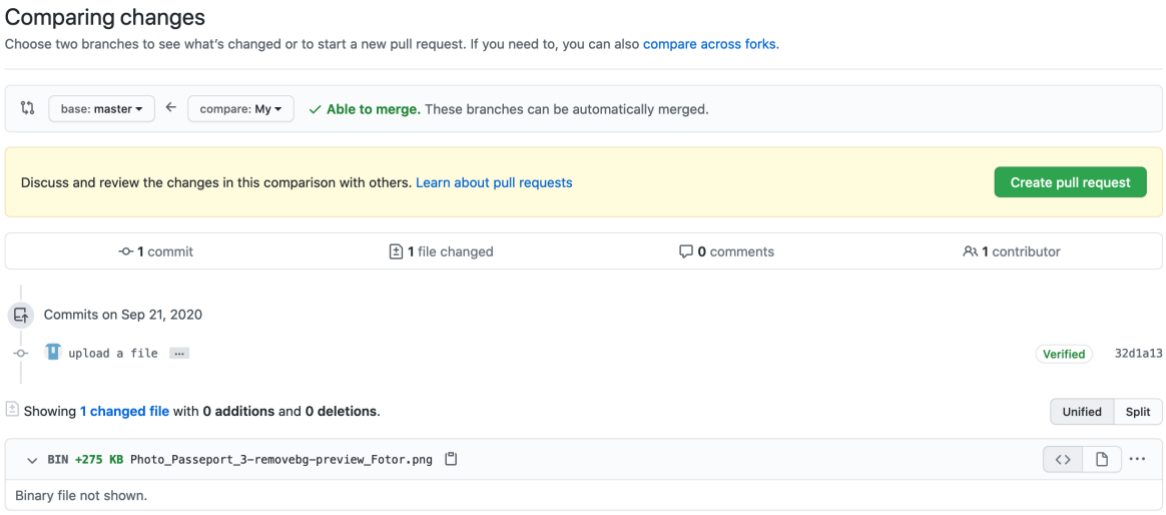
Create a branch named "myFirstBranch". A branch is a copy of your repository. It is used to make changes, try things… Click on master and type in the name



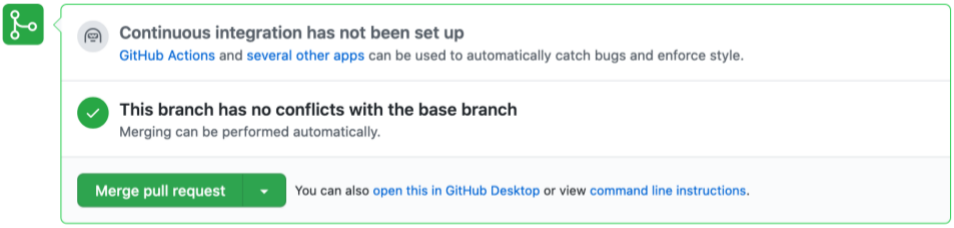
Upload any files from your desktop to the new branch of repository using drag and drop. The files are now in the branch and not in the master (which is the main copy of your repository).

Now, you are going to merge your branch to the master. That means that any change you made to the branch will be applied to the master. Click on “Pull requests” and then “New pull request”.

Compare myFirstBranch to master and view the changes and create pull request.



Add a message and click “create pull request”. On the next page, click on “Merge pull request” and confirm.



Click on “code” and select master to check the changes.

You can list or create “Issues” where you would like to discuss matters with your group members if any. This might consist in pointing to bugs, or asking for changes…

1.2 GitHub Desktop

The standard way of working with GitHub consists in committing changes to a repository from your desktop or laptop computer.

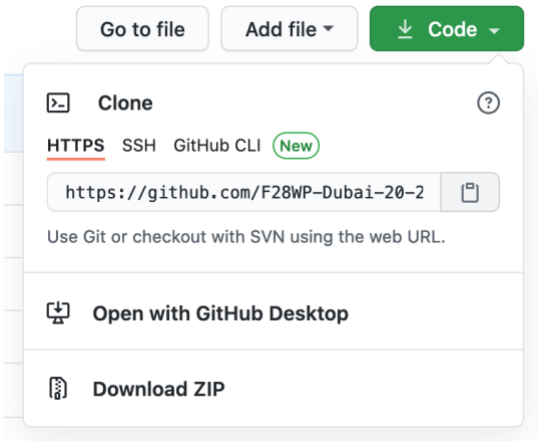
The easiest way to do this is by using GitHub desktop which also provides Git commands.

Download and install GitHub desktop from https://desktop.github.com/ or by searching GitHub desktop on google.

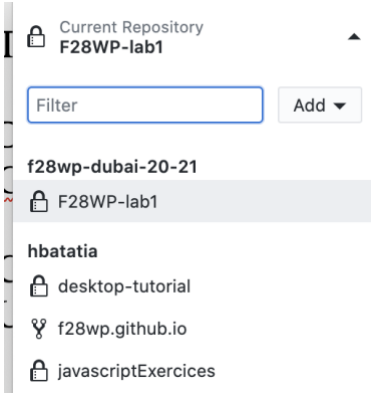
GitHub desktop relies on Git to do the version control. If you are on macOS or Linux, Git is installed by default. If you are on Windows, you need to install git manually.

From GitHub desktop, click on install git. You can also go directly to the web page, download and install Git for Windows.

Clone your repository to your local computer using GitHub desktop. First, get the repository URL by clicking on “code”, the drop down “code” menu, and copy the URL.



Paste the URL and click add.



You can also simply click “Open with GitHub Desktop” from GitHub.com. You have to select a directory (usually called working directory) on your local machine to store your cloned repository. Visit your file explorer to check that all files have been downloaded from GitHub to the working directory.

1.3 Editing code online

To work with your html, css, javascript, PhP code (or any other language), you need an Integrated Development Environment (IDE). There are many of such environment online and on desktop.

Try using Codesandbox.io, JSFiddle.net, jsbin.com, and codepen.io. The three offer three panes (or areas) to edit your HTML, CSS, and JavaScript code. You can also view results in a dedicated area and visualize a console space (where messages can be logged).

Type and run separately each of the following simple JavaScript code scripts

```
console.log (‘’ Hello World “);
```

and

```
window.alert(“Hello World”);
```

and

```
const person = prompt("Please enter your name", "your name");
if (person == null || person == "") {
  txt = "User cancelled the prompt.";
} else {
  txt = "Hello " + person + "! How are you today?";
}
window.alert(txt);
```

and

```
var myFunkyAlert = "The funky alert";
(function(fun) {
  alert(fun);
})(myFunkyAlert);
```

For the lab tutorials and exercises, you are advised to sign up to JSFiddle.

Explore public fiddles by visiting the public dashboard http://jsfiddle.net/user/forkids/fiddles.

1.4 Using Visual studio code

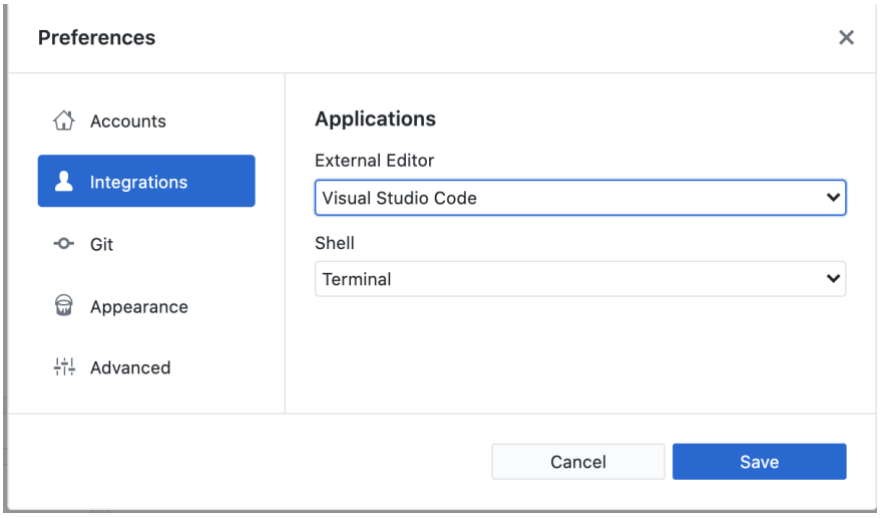
For your coursework, you can use Codesandbox or Visual Studio Code that comes with extensions for many languages and frameworks.

Download and install Visual Studio code from https://code.visualstudio.com/download. Explorer and install the following extensions for working with JavaScript:

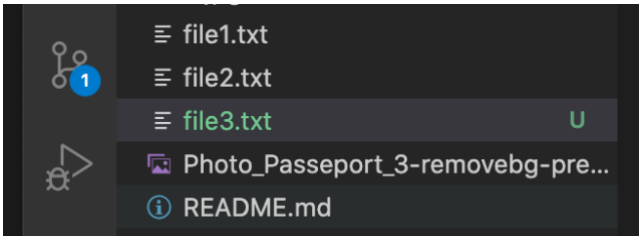
- GitHub
- JavaScript (ES6 Code Snippets)
- ESLint
- Debugger for **Chrome**
- Quokka
- Prettier
- Import **Cost**
- Path **Intellisense**
- View Node Package

You will install many others as you need them.

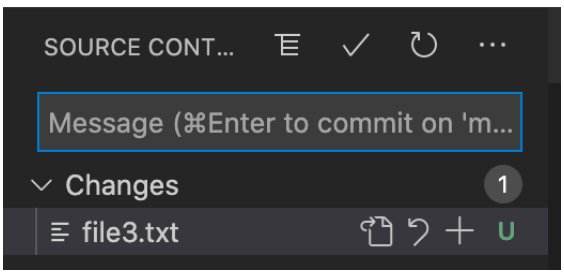
On GitHub Desktop, set Visual studio code as your default editor



While having your current repository set to F2WP-lab1, click “open in visual studio code”. You can now see your files in the IDE. Create a new text file (file3.txt), type and save some text. Note the change to the environment showing that one file has changed.

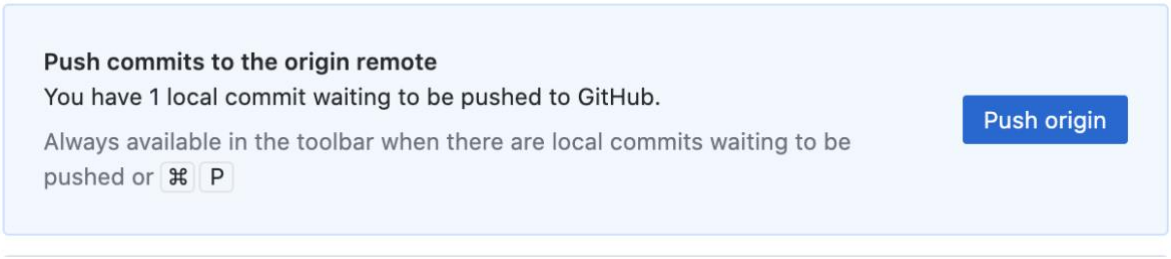


Click on the source control icon ().



Stage the changes (+), write a commit message and click the commit icon (√). Using the file explorer, check that your file is withing the working directory.

Switch back to GitHub desktop, you will see a message indicating a change in your working directory



You can push the changes to origin (that means to the online GitHub directory). Switch back to GitHub.com and check that your file3.txt has been uploaded with the commit message. Note that you have cloned the master branch. This is not a good practice. For groupwork, you should clone your branch and commit any changes to that branch before requesting to merge.

Under Visual Studio code, add a file called app.js

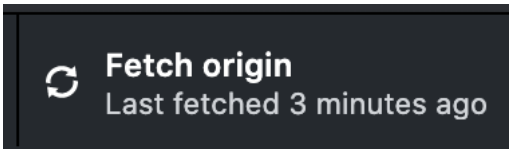
```
const num = 100;
let square = (function(a) {
    return a * a;
})(num);
console.log(`Square(${num})=` + square);
```

Run the code and inspect result on the console. Commit changes and push origin.

In GitHub.com, edit app.js (online) and add a comment line

```
//this is an anonymous function called immediatly when declared
```

Save and return to GitHub Desktop. Click on “Fetch origin” to download the new version of app.js



This is the method you are going to use to “download” what other group members, working on the same project, have changed to the repository.

1.5 Create a Readme file

Edit a readme file in your repository. Include information about yourself courses and a link to your web page (created in lab 2).

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