GitHub Tutorial – Basics

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Objectives:
- Understand the basic GitHub web interface
- Register GitHub account
- Learn to create repository, commit, fork, pull request, branching, etc

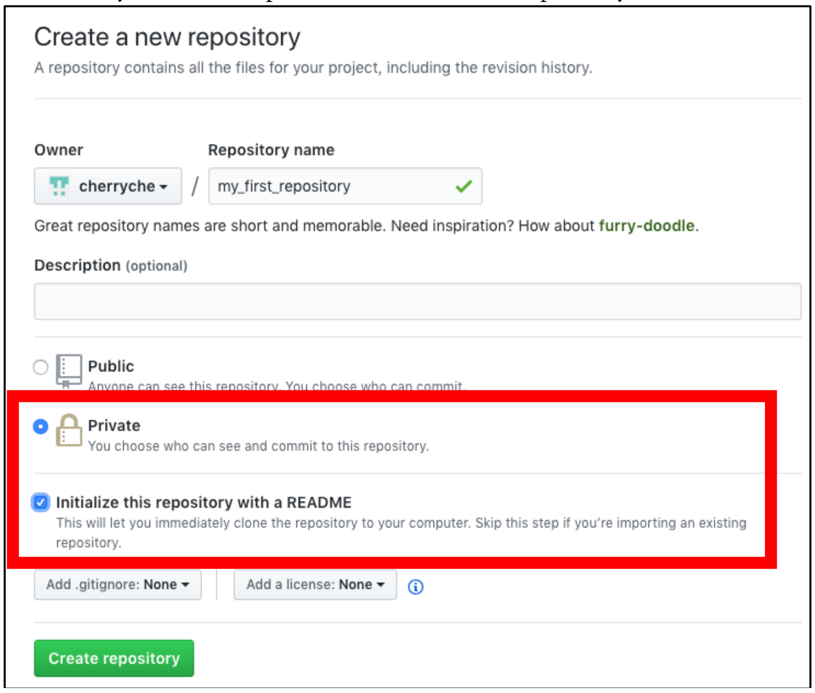
Step 1. Register a GitHub Student Developer Pack

By default, the repositories you create in GitHub is public, which means everybody in the world can access them. It normally costs a subscription fee to create private repositories. The good news is it is free for students.

Visit https://education.github.com/pack, and register for a Student Developer Pack using your **xxxx@qmul.ac.uk** email address.

Step 2. Create a Private Repository

Follow these instructions:
1. In the GitHub homepage, click "New Repository".
2. Give a name to your repository and description (optional). Choose "Private" in the next section. And make sure you tick the option of "Initialize this repository with a README".



Create a new repository
A repository contains all the files for your project, including the revision history.

Owner: cherryche / Repository name: my_first_repository
Great repository names are short and memorable. Need inspiration? How about furry-doodle.

Description (optional)

○ Public
Anyone can see this repository. You choose who can commit.

● Private
You choose who can see and commit to this repository.

☑ Initialize this repository with a README
This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

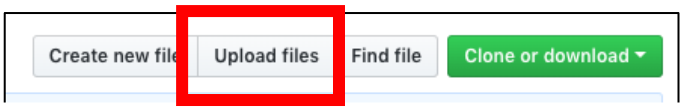
3. Your repository now has an official URL with something like:
   https://github.com/cherryche/my_first_repository

Step 3. Commit to the Private Repository

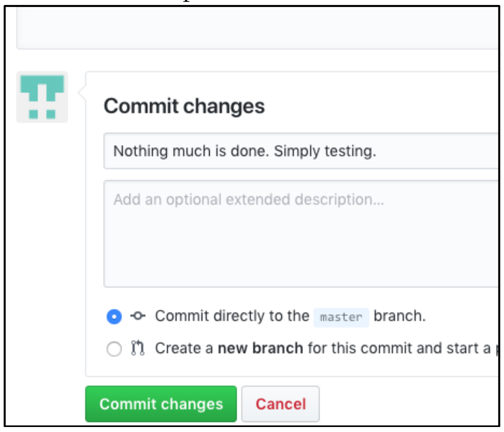
For the learning purpose, you may use any software files that you wish to upload to the GitHub repository. (It an even be a text file.)

Follow these steps:

1. Enter your repository.
2. Click "Upload Files".



3. Either use "Choose your files" option or simply drag the files to the box. Dragging allows you to upload a whole folder of files at once.
4. Add some descriptions. And click "commit changes".


Commit changes

Nothing much is done. Simply testing.

Add an optional extended description...

Commit directly to the `master` branch.

Create a **new branch** for this commit and start a

5. In the future, should you wish to commit again, simply follow the same procedure to upload files.

This practice should go in parallel with the Agile management during your app development process.
The milestone stages to commit (i.e. upload) a repository are the moments when you complete a newer version of the software project (i.e. at the end of each sprint). However, it is advised that you upload your work whenever you can for your own sake – you will personally benefit from it for these two reasons:

- Just in case something goes wrong with your memory stick or machine, you always have a backup in the cloud.
- Suppose you had a good copy of your software project files that worked perfectly fine, then you made some changes and it stopped working and it would not revert back to the previous working state even if you cancelled all the changes (no matter how hard you tried). If you are a good version control practitioner, you can always count on GitHub to download the previous version (or any former version).

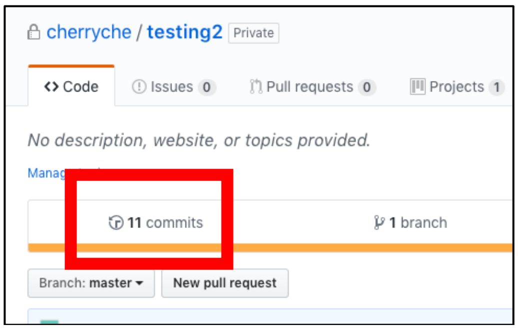
Therefore, every time after doing some hard work, please upload them to GitHub before leaving your desk. Write some notes for each commit to document what has happened.

Step 4. Compare Code

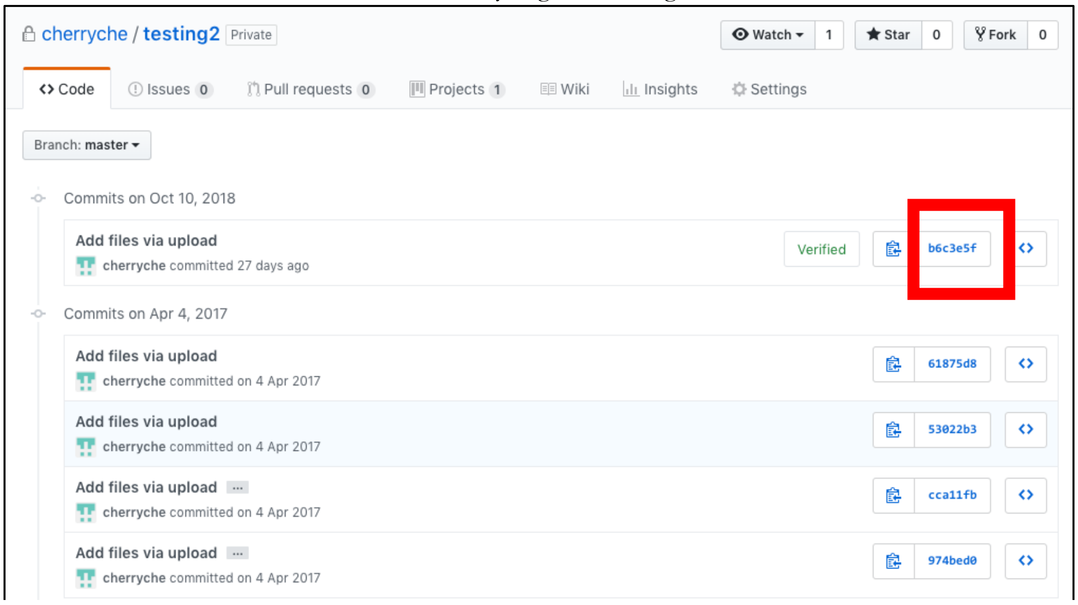
Make some changes to your software files that you uploaded earlier. It does not matter what changes you make – just alter something so as to learn how to compare differences between two sets of code.

Follow these steps:

1. Repeat Step 3 to upload the newly changed software project (or files) to your repository.
2. You may see "X commits" in the main page, click it.



3. You can now see a list of commits in the history, e.g. something like:



Commits on Oct 10, 2018

Add files via upload
cherryche committed 27 days ago — Verified — b6c3e5f

Commits on Apr 4, 2017

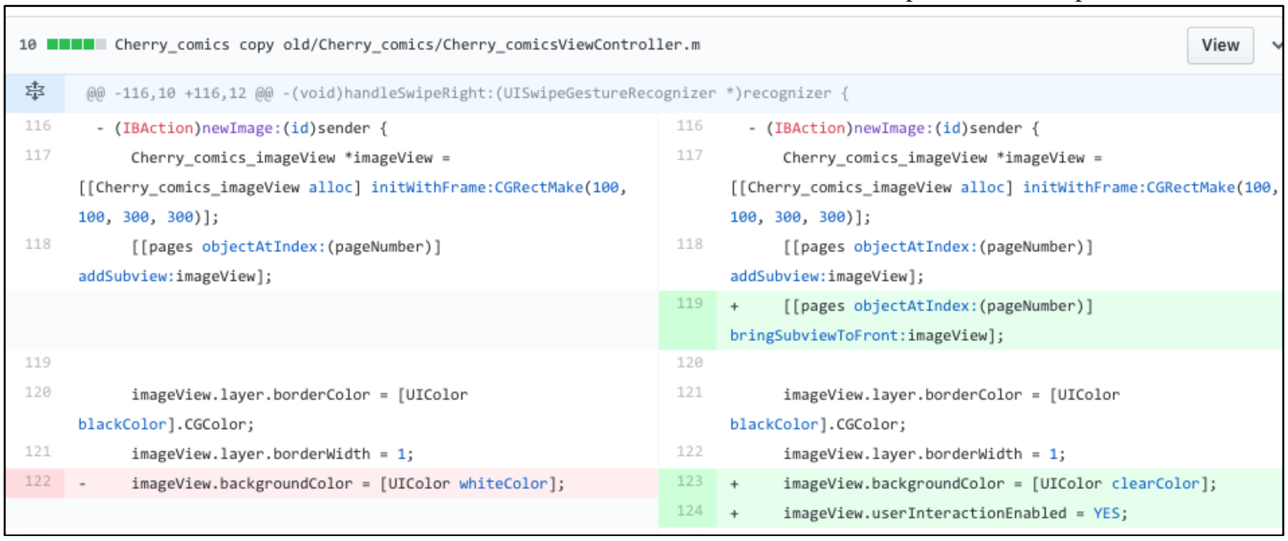
Add files via upload
cherryche committed on 4 Apr 2017 — 61875d8

Add files via upload
cherryche committed on 4 Apr 2017 — 53022b3

Add files via upload ...
cherryche committed on 4 Apr 2017 — cca11fb

Add files via upload ...
cherryche committed on 4 Apr 2017 — 974bed0

4. Each commit is associated with a unique ID. Click the commit or the ID, and you can see the difference between this commit and the one before. The default view is a split view. Example:



```
10 Cherry_comics copy old/Cherry_comics/Cherry_comicsViewController.m

@@ -116,10 +116,12 @@ -(void)handleSwipeRight:(UISwipeGestureRecognizer *)recognizer {

  - (IBAction)newImage:(id)sender {                       |    - (IBAction)newImage:(id)sender {
      Cherry_comics_imageView *imageView =                |        Cherry_comics_imageView *imageView =
  [[Cherry_comics_imageView alloc] initWithFrame:CGRectMake(100,  |  [[Cherry_comics_imageView alloc] initWithFrame:CGRectMake(100,
  100, 300, 300)];                                        |    100, 300, 300)];
      [[pages objectAtIndex:(pageNumber)]                 |        [[pages objectAtIndex:(pageNumber)]
  addSubview:imageView];                                  |    addSubview:imageView];
                                                          |  +     [[pages objectAtIndex:(pageNumber)]
                                                          |    bringSubviewToFront:imageView];
                                                          |
      imageView.layer.borderColor = [UIColor              |        imageView.layer.borderColor = [UIColor
  blackColor].CGColor;                                    |    blackColor].CGColor;
      imageView.layer.borderWidth = 1;                    |        imageView.layer.borderWidth = 1;
-     imageView.backgroundColor = [UIColor whiteColor];   |  +     imageView.backgroundColor = [UIColor clearColor];
                                                          |  +     imageView.userInteractionEnabled = YES;
```

Step 5. Fork

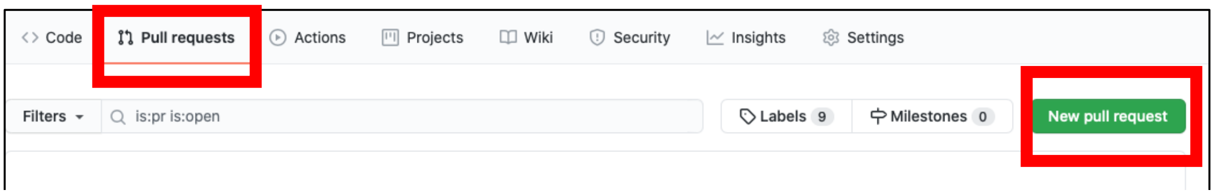
For the purpose of experiment, you can access the repository as shown below:

https://github.com/cherryche/testing_public

Fork it to your own repository. Now make some changes and commit.

Step 5. Pull Request

Navigate to “Pull requests” tab and click “New pull request”.



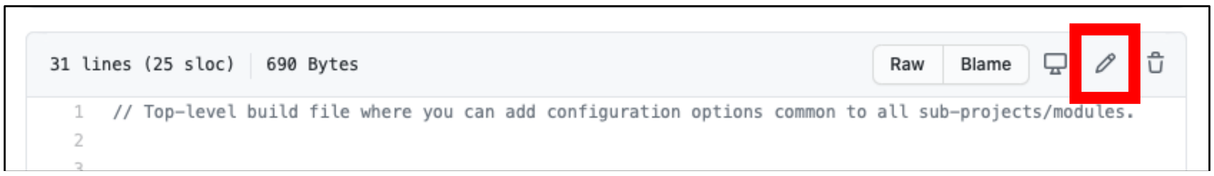
Write some comments so the original owner could see your intention.

Then just await the approval from the original contributor.

Step 6. New Branch

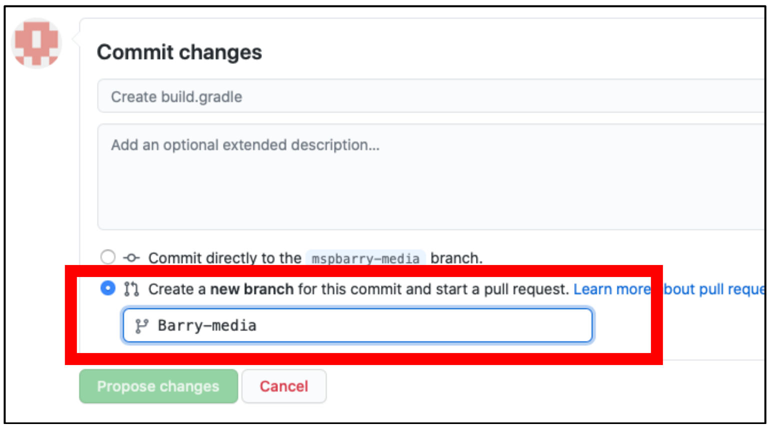
In your own repository, make some changes to the code (again, for the purpose of exercise, any random change is fine). But this time, let’s learn a new way of making changes.

GitHub allows you to edit code directly from the web interface. Simply locate the file you wish to edit and hit the edit button (as shown below).



```
// Top-level build file where you can add configuration options common to all sub-projects/modules.
```

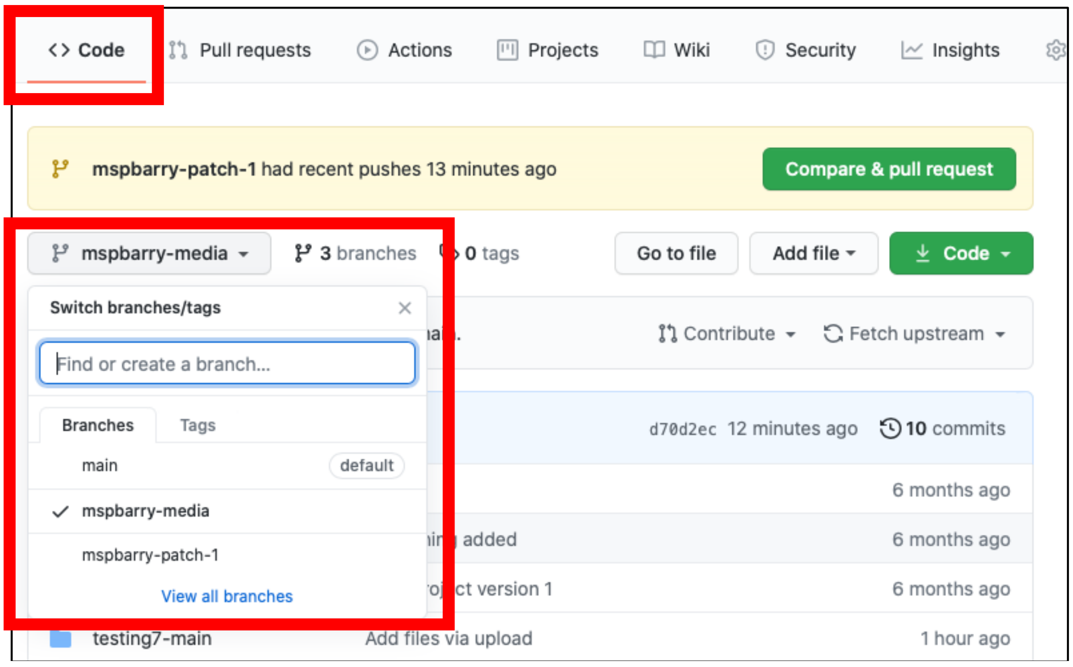
When finish editing, choose “Create a new branch…” option to commit. Give a meaningful name.


Commit changes
Create build.gradle
Add an optional extended description...
Commit directly to the mspbarry-media branch.
Create a new branch for this commit and start a pull request. Learn more about pull reque
Barry-media
Propose changes
Cancel

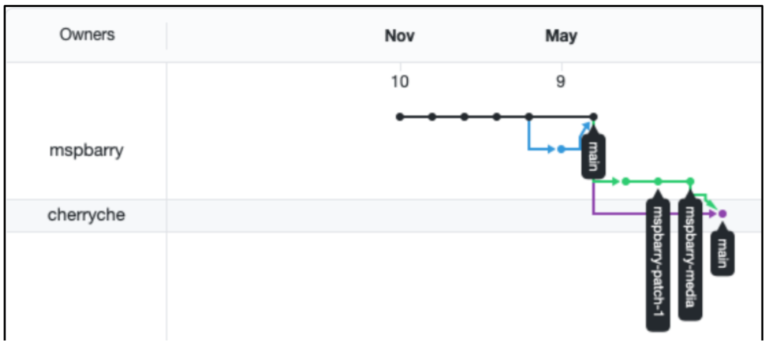
Once you click “Propose changes”, GitHub assumes you would like to do a Pull Request. You can ignore that for now.

In the future, when you browse or change files, you need to make sure you are dealing with the right branch.

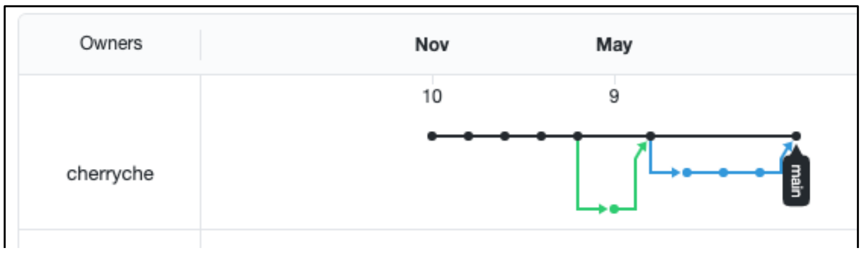
Click "Code" → the name of your current branch. There is a dropdown menu for you to navigate through different branches.



If you click "Insight" → "Network", you may have a view of your branch activities. It may look something like this (yours may vary):



Should you wish to, you can create Pull Requests to the original owner (make sure to choose the correct branch for the Pull Request). If your Pull Request is approved and merged, they may have a view with something like this:


Owners
Nov
May
10
9
cherryche
main