What is Git?

Git is a Version Control System (VCS). It allows us to keep multiple versions of the same code in a directory and switch between them. Let us see and try out some basic git commands.

Initialise

Initialise an empty git repository.

```
git init
```

Stage and Commit

Add all the files, or specific files which are to be committed.

```
git add .
git add <file_name_1> <file_name_2>
```

The above step is called *staging*. Now they are ready for the commit.

Use the following command to do that.

```
git commit
```

This will open an editor, where you can type a commit message. The commit message tells what we do in that commit.

The commonly used convention is to use an imperative style for commit message. A properly formed git commit subject line should always be able to complete the following sentence

If applied, this commit will <your commit message>

Example: *Add support for addition of two numbers*

To see all the git commits, use

```
git log
git log --format=oneline
```

See what's not committed

If you have made some changes which are not yet committed or staged, you can see them using the command

```
git diff
```

What is GitHub?

GitHub allows you to host the code in the cloud and share it with others. Multiple users can work on the same codebase. **GitHub and Git are not the same**. GitHub uses Git to store and retrieve code through command-line.

To start using GitHub, you need to have an account. You can create one here: `https://github.com`. Once you have an account, create a repository to store and share your code. The repository URL needs to be added to the local repository we create in our machine.

After creating, you can add it to your repository using command

```
git remote add origin <github_repository_url>
```

Let's see what's happening here:

- `remote add` - This tells that we are adding a remote repository. In this case, a GitHub repository.
- `origin` - This is the name we give for the remote repository. The convention is to use name this name, although it can be changed.

Push and Pull Content to/from a Remote Repository

Once a repository is added, we can push the code to the repository using command

```
git push origin master
```

You already know what origin means. `master` means we are pushing to the main (master) branch. This is particularly useful when we deal multiple branches in the repository.

Similarly, to pull data from the repository, you can use

```
git pull origin master
```

Checkout already existing code from Github

If you want to checkout a code that's already available in GitHub, use the command

```
git clone <github_repository_url>
```

Why do you need to learn Git?

- It's a skill required by most of the software companies. Knowing Git is a plus point when you go for an interview. You can show it off on your resume.
- You can host all your past/current/future projects in GitHub. Companies usually check your GitHub profile. Open source contributions like that also attracts interviewers to you.

More resources to learn

- For an interactive tutorial of Git, check out this: `https://try.github.io`. It just takes 15 minutes!
- There is a book to learn Git from basic to advanced: `https://git-scm.com/book`. You can read it online for free, or download the PDF.

Questions?

If you still have any questions, or if you need help to learn or develop using Git, you can contact me.

Email me at `yedhukrishnan@yahoo.com`, or drop a message or call at `8547606599`