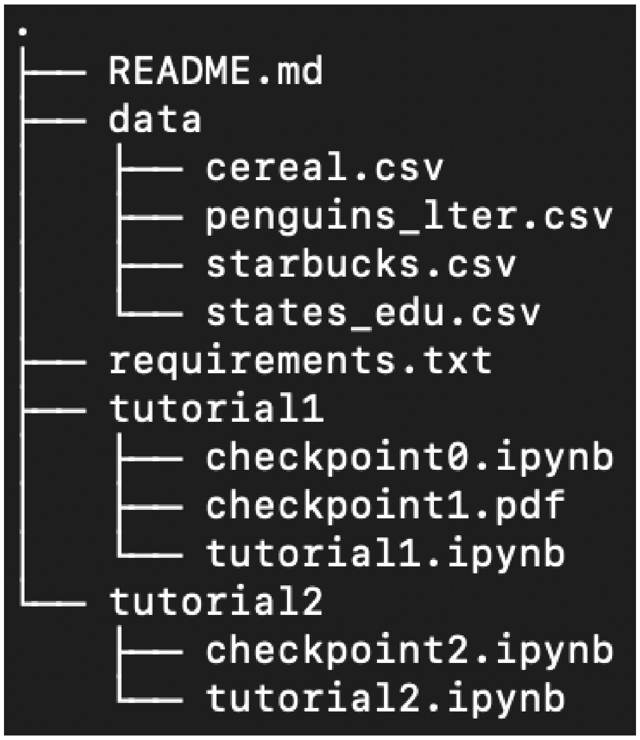
Checkpoint 1

1. Set up checkpoint directory

The tutorial folder you downloaded should have the following structure (run `tree` in the `mdst_tutorials` folder):



```
.
├── README.md
├── data
│   ├── cereal.csv
│   ├── penguins_lter.csv
│   ├── starbucks.csv
│   └── states_edu.csv
├── requirements.txt
├── tutorial1
│   ├── checkpoint0.ipynb
│   ├── checkpoint1.pdf
│   └── tutorial1.ipynb
└── tutorial2
    ├── checkpoint2.ipynb
    └── tutorial2.ipynb
```

> *Note -- after completing the setup, you will also have your virtual environment in* `env/`
> *Run* `tree -I env` *to see your structure without the environment*
>
> *Note 2 -- on macOS, you may need to install tree using* `brew install tree`

You are going to update this structure to store your checkpoints. Use Unix commands to do the following (see documentation or this cheat sheet for help):

1.1 Create two new folders for the checkpoints -- `checkpoint1` and `checkpoint2`

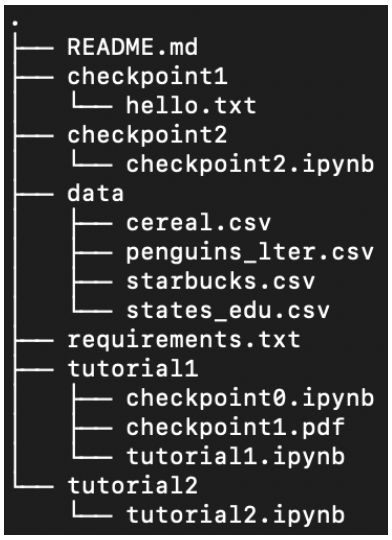
1.2 Create an empty file called "hello.txt" in `checkpoint1/`

- In this file, introduce yourself! Tell us your name, year, school/major, and a fun fact about yourself :)

1.3 Move the checkpoint files from the tutorial folders to the checkpoint folders

- From `tutorial2/`, move `checkpoint2.ipynb` to `checkpoint2/`

Your final setup should have the structure:



```
.
├── README.md
├── checkpoint1
│   └── hello.txt
├── checkpoint2
│   └── checkpoint2.ipynb
├── data
│   ├── cereal.csv
│   ├── penguins_lter.csv
│   ├── starbucks.csv
│   └── states_edu.csv
├── requirements.txt
├── tutorial1
│   ├── checkpoint0.ipynb
│   ├── checkpoint1.pdf
│   └── tutorial1.ipynb
└── tutorial2
    └── tutorial2.ipynb
```

2. Generating a new SSH key

The way you will be turning in the checkpoints is by uploading your work to your own github repo and linking that repo to us. In order to do so, first generate a new SSH key if you haven't already.

2.1 Generate a new SSH key by following the steps here

(I recommend making a passphrase. If you choose not to, be sure to delete the line `UseKeychain yes` in the `~/.ssh/config` file)

2.2 Add a new SSH key by following the steps here

2.3 Test the generated SSH by following the steps here

3. Make a new local repository

3.1 Move to the folder `mdst_tutorials` (the base folder you downloaded for the tutorials)

3.2 Run `git init`

This creates a new git repository in the `mdst_tutorials` folder. You can always tell when you're in a git repo because there will be a hidden `.git/` folder (verify with `ls -a`)

The git repository you made here is saved only to your computer. Next, we want to connect it to a remote (online) repo.

4. Make a remote repo

4.1 On github.com, find the button to make a new repository. Click on it.

4.2 Give the repo a name and description and make it public. Do not initialize the repo with a README or .gitignore (we will be importing an existing repository)

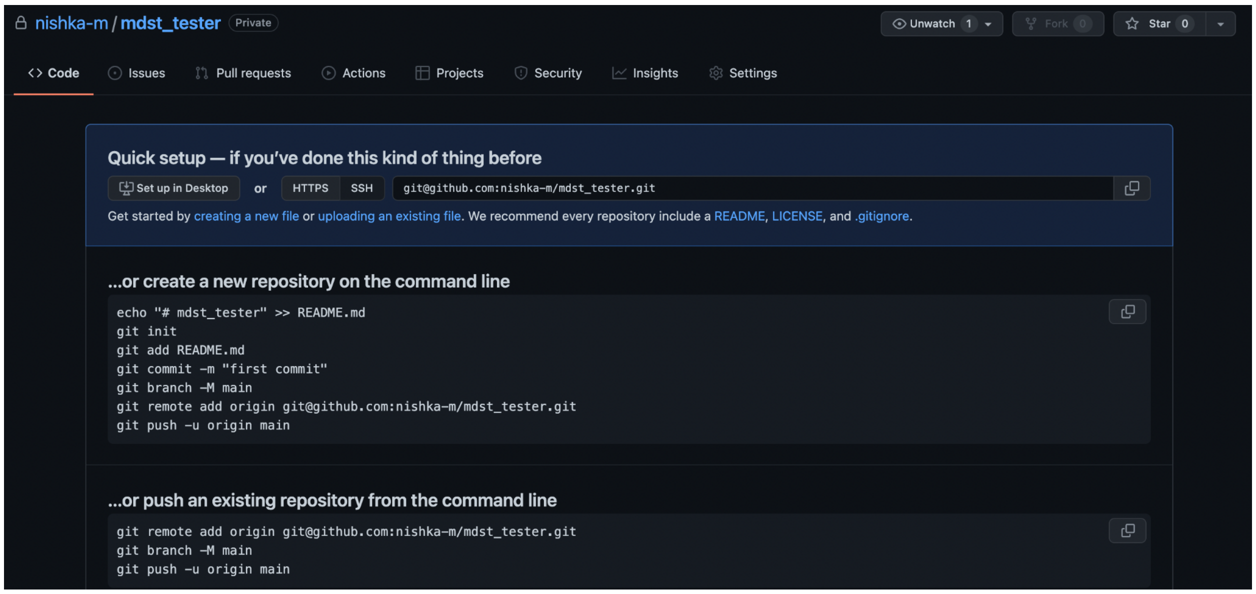
4.3 Finish creating the repository

You should be able to see your new repository on your github profile, but there's nothing there! We need to link the local repo we created in step 3 to this repo.

5. Link repos

5.1 Open your repo from step 4 and run the commands from GitHub in your terminal

The commands should look something like this:



Quick setup — if you've done this kind of thing before

git@github.com:nishka-m/mdst_tester.git

Get started by creating a new file or uploading an existing file. We recommend every repository include a README, LICENSE, and .gitignore.

...or create a new repository on the command line

```
echo "# mdst_tester" >> README.md
git init
git add README.md
git commit -m "first commit"
git branch -M main
git remote add origin git@github.com:nishka-m/mdst_tester.git
git push -u origin main
```

...or push an existing repository from the command line

```
git remote add origin git@github.com:nishka-m/mdst_tester.git
git branch -M main
git push -u origin main
```

Now your repositories are linked! You can now commit and push freely to your repo.

6. Commit checkpoints

When you turn your checkpoints in, we will only want to see the actual checkpoint files. The tutorials are the same for everyone (also we wrote them!) so you can just leave those out of the repository.

6.0 (optional) Create a .gitignore file to ignore the files you don't want to push (see documentation)

You will want to ignore the `env`, `data`, `tutorial1`, and `tutorial2` folders You may also want to ignore any `.ipynb_checkpoints` or `__pycache__` folders

6.1 Add, commit, and push the checkpoint folders and files to your git repository

See the Git refresher below for how to do that

Make sure to update your repo periodically as you work through the rest of the checkpoints! Even though we will only check the final version of the repo when you are finished, this is good practice and the whole reason git exists!

Git refresher

Since we're already here, let's review how to commit and push to git. Recall that a commit is like a checkpoint -- it saves the state of your files at a given instance. Pushing uploads your local changes/commits to your online repository.

In your own git repo, run `git status` to check your status. There will be 2-3 categories:

- Changes not staged for commit -- these are files which have been changed and not committed
- Changes to be committed -- these are also files which have been changed and not committed, but you have marked them as 'to-be-committed'
- Untracked files -- these are files which have never been commited

> *If there are files in the untracked files section which you know you will never commit, you can have them stop showing up with a .gitignore file. Create this file inside your repo (using any editor) and include each pattern to ignore on its own line. For example, to ignore all .txt files, your gitignore would include the line *.txt (the * symbol matches anything that comes before a .txt)*

To mark files as 'to-be-committed', run `git add FILENAME` to add them to the staging area. This tracks which file(s) are being updated with a single commit. These files you add will move from changes not staged for commit to changes to be committed.

Once you have added all the files you want to save at once, run `git commit`. This will open a terminal text editor, where you will write a commit message (should be a short description of changes made).

> *Vim: type `i`, type your message, `ESC`, then `:x`*
> *Nano: type your message, `CTRL-O`, `ENTER`, then `CTRL-X`*

After committing, if you run `git status` again, the ‘changes to be committed’ section will disappear (those files have now been committed). The rest will look the same.

Finally, to push your changes, run `git push`. After providing your login information, you will be able to refresh the github page and see your changes!