

**Part 1**

- **Create a new repository on GitHub (make it public and initiate it with the README.md)**


## Create a new repository

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

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Owner

Repository name

 jane212 ▾


 / 

homework1 ✓


Great repository names are short and memorable. Need inspiration? How about **redesigned-potato**.

Description (optional)

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☒  **Public**

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

☐  **Private**

You choose who can see and commit to this repository.

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☒ **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.

Add .gitignore: **None** ▾

 | 

Add a license: **None** ▾



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**Create repository**

- **Clone the repository (on the machine that was assigned to you)**

```
Tingting — user15@s03:~ — ssh user15@10.29.19.11 — 80×24
Last login: Mon Jan 30 10:13:32 on console
[thuang1:~ Tingting$ ssh user15@10.29.19.11
[user15@10.29.19.11's password:
Last login: Thu Jan 26 18:13:45 2017 from thuang1.student.iastate.edu
[user15@s03 ~]$ pw
-bash: pw: command not found
[user15@s03 ~]$ ls
lecturepy project15 project2 project_py
[user15@s03 ~]$ git clone https://github.com/jane212/homework1.git
```

- Add a new file to this repository using the "vi editor"

```
Tingting — user15@s03:~/homework1 — ssh user15@10.29.19.11 — 80×24
[user15@s03 homework1]$ vi part1

new file in homework 1, part 1
```

- Add the file to tracking

```
Tingting — user15@s03:~/homework1 — ssh user15@10.29.19.11 — 80×24
[user15@s03 homework1]$ vi part1
[user15@s03 homework1]$ ls
part1  README.md
[user15@s03 homework1]$ git status
# On branch master
# Untracked files:
#   (use "git add <file>..." to include in what will be committed)
#
#       part1
nothing added to commit but untracked files present (use "git add" to track)
[user15@s03 homework1]$ git add part1
```

- Do a commit

```
Tingting — user15@s03:~/homework1 — ssh user15@10.29.19.11 — 80×24
[[user15@s03 homework1]$ vi part1
[[user15@s03 homework1]$ ls
part1  README.md
[[user15@s03 homework1]$ git status
# On branch master
# Untracked files:
#   (use "git add <file>..." to include in what will be committed)
#
#       part1
nothing added to commit but untracked files present (use "git add" to track)
[[user15@s03 homework1]$ git add part1
[user15@s03 homework1]$ git commit -m "new file added"
```

- Do a push to your GitHub account

```
Tingting — user15@s03:~/homework1 — ssh user15@10.29.19.11 — 80×24
[user15@s03 homework1]$ vi part1
[user15@s03 homework1]$ ls
part1  README.md
[user15@s03 homework1]$ git status
# On branch master
# Untracked files:
#   (use "git add <file>..." to include in what will be committed)
#
#       part1
nothing added to commit but untracked files present (use "git add" to track)
[user15@s03 homework1]$ git add part1
[user15@s03 homework1]$ git commit -m "new file added"
[master 06fd4ba] new file added
 1 files changed, 1 insertions(+), 0 deletions(-)
 create mode 100644 part1
[user15@s03 homework1]$ git push -u https://jane212@github.com/jane212/homework1
.git master
```

- Create a fix (add some lines) to some file in your local repository and do a git merge operation

```
Tingting — user15@s03:~/homework1 — ssh user15@10.29.19.11 — 80×24
[user15@s03 homework1]$ git branch fix

Tingting — user15@s03:~/homework1 — ssh user15@10.29.19.11 — 80×24
new file in homework 1, part 1
new fix added
~
~
~

Tingting — user15@s03:~/homework1 — ssh user15@10.29.19.11 — 80×24
[user15@s03 homework1]$ git branch fix
[user15@s03 homework1]$ git checkout fix
Switched to branch 'fix'
[user15@s03 homework1]$ git branch
* fix
  master
[user15@s03 homework1]$ ls
part1  README.md
[user15@s03 homework1]$ vi part1
[user15@s03 homework1]$ git status
# On branch fix
# Changed but not updated:
#   (use "git add <file>..." to update what will be committed)
#   (use "git checkout -- <file>..." to discard changes in working directory)
#
#       modified:   part1
#
no changes added to commit (use "git add" and/or "git commit -a")
[user15@s03 homework1]$ git commit -a -m "new fix added"
```

```
Tingting — user15@s03:~/homework1 — ssh user15@10.29.19.11 — 80×24
[user15@s03 homework1]$ git checkout master
Switched to branch 'master'
[user15@s03 homework1]$ git merge fix
```

```
Tingting — user15@s03:~/homework1 — ssh user15@10.29.19.11 — 80×24
[user15@s03 homework1]$ git checkout master
Switched to branch 'master'
[user15@s03 homework1]$ git merge fix
Updating 06fd4ba..3a55c0a
Fast-forward
 part1 | 1 +
 1 files changed, 1 insertions(+), 0 deletions(-)
[user15@s03 homework1]$ git push -u https://jane212@github.com/jane212/homework1
.git master
```

## Part 2

- Create a new folder named `python_project` for this project and `cd` into the `python_project` folder

```
Tingting — user15@s03:~/homework1/python_project — ssh user15@10.29.19....  
[[user15@s03 homework1]$ mkdir python_project  
[[user15@s03 homework1]$ cd python_project  
[user15@s03 python_project]$ vi capture.py
```

- Write python code (name this file `capture.py`) to read the XML from the URL provided on GitHub (check `README.md` of Lecture 3) and Write the contents to a file named `'stream.xml'` (this step is mentioned in the presentation)

```
Tingting — user15@s03:~/homework1/python_project — ssh user15@10.29.19....  
import os  
import sys  
import time  
import urllib2  
import xml.etree.ElementTree as ET  
  
url_str = "http://205.221.97.102/Iowa.Sims.AllSites.C2C/IAD0T_SIMS_AllSites_C2C.  
asmx/OP_ShareTrafficDetectorData?MSG_TrafficDetectorDataRequest=string%20HTTP/1.  
1"  
  
request = urllib2.Request(url_str, headers = {"Accept":"text/xml"})  
content = urllib2.urlopen(request).read()  
  
f = open("stream.xml", 'w')  
f.write(content)  
f.close()  
~  
~  
~  
~  
-- INSERT -- 17,10 All
```

```
Tingting — user15@s03:~/homework1/python_project — ssh user15@10.29.19....  
[[user15@s03 homework1]$ mkdir python_project  
[[user15@s03 homework1]$ cd python_project  
[[user15@s03 python_project]$ vi capture.py  
[[user15@s03 python_project]$ python capture.py  
[[user15@s03 python_project]$ ls  
capture.py stream.xml  
[user15@s03 python_project]$
```

- Write python code (name this file parser.py) to parse the XML(stream.xml) and print the Detector-ID and Status (mentioned in presentation)

```
Tingting — user15@s03:~/homework1/python_project — ssh user15@10.29.19...
[user15@s03 python_project]$ vi parser.py

import os
import sys
import time
import urllib2
import xml.etree.ElementTree as ET

tree = ET.parse("stream.xml")

root = tree.getroot()

z = root.getchildren()[2].getchildren()[0].getchildren()[3].getchildren()

length = len(z)

# get all detectors
for i in range(1,length):
    x = root.getchildren()[2].getchildren()[0].getchildren()[3].getchildren(
    )[i]
    print x.getchildren()[0].text, "|", x.getchildren()[1].text

~
~
"parser.py" 20L, 418C                                     16,0-1      All

Tingting — user15@s03:~/homework1/python_project — ssh user15@10.29.19...
I-380 CRDS04 NB | operational
I-380 CRDS04 SB | operational
I-380 CRDS04 NB Ramp | operational
I-380 CRDS05 NB | operational
I-380 CRDS05 SB | operational
I-380 CRDS06 NB | operational
I-380 CRDS06 SB | operational
I-380 CRDS07 Ramp RL | operational
I-380 CRDS08 NB | operational
I-380 CRDS08 SB | operational
I-380 CRDS08 SB Ramp | operational
I-380 CRDS09 NB | operational
I-380 CRDS09 SB | operational
I-380 CRDS09 NB Ramp | operational
I-380 CRDS09 SB Ramp | operational
I-380 CRDS10 NB | operational
I-380 CRDS10 SB | operational
I-380 CRDS10 NB Ramp | operational
I-380 CRDS10 SB Ramp | operational
I-380 CRDS11 NB | operational
I-380 CRDS11 SB | operational
I-380 CRDS11 NB Ramp | operational
I-380 CRDS11 SB Ramp | operational
[user15@s03 python_project]$
```

### Part 3

- Write the parsed output (and only the parsed output i.e. the Detector-ID and Status) from the previous step to a file named streamdata.csv or streamdata.xml

```
Tingting — user15@s03:~/homework1/python_project — ssh user15@10.29.19.11...
[user15@s03 python_project]$ vi parser3.py
[user15@s03 python_project]$

import os
import sys
import time
import urllib2
import xml.etree.ElementTree as ET

tree = ET.parse("stream.xml")
root = tree.getroot()

z = root.getchildren()[2].getchildren()[0].getchildren()[3].getchildren()

length = len(z)

f = open('streamdata.csv','w')

for i in range(1,length):
    x = root.getchildren()[2].getchildren()[0].getchildren()[3].getchildren(
    ) [i]
    content = x.getchildren()[0].text+","+x.getchildren()[1].text+"\n"
    f.write(content)

"parser3.py" 23L, 465C                                     1,1                               Top

Tingting — user15@s03:~/homework1/python_project — ssh user15@10.29.19.11...
[user15@s03 python_project]$ ls
capture.py  parser3.py  parser.py  streamdata.csv  stream.xml
[user15@s03 python_project]$

Tingting — user15@s03:~/homework1/python_project — ssh user15@10.29.19.11...
[user15@s03 python_project]$ cat streamdata.csv | head
I-74 NB from 12th Ave to 7th Ave,operational
I-74 NB from 7th Ave to 4th Ave,operational
I-74 NB from 4th Ave to 1st Ave,operational
I-74 NB from 1st Ave to Toll Pla,operational
I-74 NB from Toll Plaza to South,operational
I-74 NB from South Tower to Nort,failed
I-74 NB from North Tower to Isle,operational
I-74 NB from Isle Park to Holmes,operational
I-74 NB from Lincoln to Middle,operational
I-74 NB from Spruce Hills to Cro,operational
[user15@s03 python_project]$
```