Note: The following will not work through the campus firewall. I spun up a google compute instance and installed scapy and things worked fine. Google compute micro instances are free for 700+ hours per month. If you turn them off when you aren’t using them, you shouldn’t need to worry about getting charged. The videos found [here](#) could help if you are stuck.

## TCP Handshake

Write and execute the code that will perform a three-way TCP handshake to `[packtpub.samsclass.info](#)` with a destination port of `[40001](#)`. Here is some code to get you started (it generates the 3 way handshake):

```python
#!/usr/bin/python

from scapy.all import *

conf.L3socket=conf.L3socket=L3RawSocket

i=IP()
i.dst = "cit.dixie.edu"

t = TCP()
t.dport = 80
r = sr1(i/t)
t.flags = "A"
t.seq = r.ack
t.ack = r.seq + 1
p = i/t
reply = sr(p)
```

You will probably have to disable RST packets by doing something like:

```sh
sudo iptables -A OUTPUT
sudo iptables -A OUTPUT -p tcp -s 144.38.199.108 --tcp-flags RST RST -j DROP
```

Send an 8 character code as raw data. (Probably not your last name). You should be able to see if you succeeded by visiting [this](#) site. No more than 8 characters.

## Firewalking

Modify your previous code so to send to destination port of `[40002](#)` on the previous server. Your packet should arrive with a TTL of 1 to the destination. **HINT:** This is very easy and should only necessitate adding a single line of code to the previous one. You will probably also make use of the traceroute program. You should be able to see if you succeeded by visiting [this](#) site. Write a short paragraph on what TCP firewalking is.

## To Submit

- Tell me what code you submitted to the website. Also upload your code.