2. basic network scanner

import subprocess

import ipaddress

import platform # Let's make sure we import this at the top

def is\_host\_up(ip):

"""Checks if a host is reachable by sending a single ping."""

ping\_params = ['-n', '1'] if platform.system().lower() == 'windows' else ['-c', '1']

ping\_command = ['ping'] + ping\_params + [ip]

try:

# Fire off the ping and grab the output

process = subprocess.Popen(ping\_command, stdout=subprocess.PIPE, stderr=subprocess.PIPE)

\_, errors = process.communicate(timeout=1)

# A return code of 0 usually means success

return process.returncode == 0

except subprocess.TimeoutExpired:

return False

except OSError as problem:

print(f"Hmm, ran into a problem running ping: {problem}")

return False

def discover\_live\_hosts(network\_cidr):

"""Scans a given network range to find active machines."""

try:

network = ipaddress.ip\_network(network\_cidr, strict=False)

live\_ones = []

print(f"Alright, let's see who's online in the network: {network\_cidr}...")

for host in network.hosts():

ip\_address = str(host)

if is\_host\_up(ip\_address):

print(f"Yep, {ip\_address} is responding!")

live\_ones.append(ip\_address)

print("\n--- Done scanning! ---")

if live\_ones:

print("Here are the hosts that seem to be up and running:")

for live\_host in live\_ones:

print(live\_host)

else:

print("Looks like no one's home in that range.")

except ValueError:

print("Whoops, that doesn't look like a valid network address range to me.")

except Exception as oops:

print(f"Something unexpected happened during the scan: {oops}")

if \_name\_ == "\_main\_":

target\_net = input("Tell me the network you want to scan (like 192.168.1.0/24): ")

discover\_live\_hosts(target\_net)