# **Collect information from all hosts in the list**

Write a program that is given a linux-command and a list of IPs - and executes the command and returns the output on all given hosts.

example:

|  |
| --- |
| worm.py "hostname" 10.10.100.1,172.29.100.1,10.10.100.2,10.10.100.5 |

will print:

|  |
| --- |
| 10.10.100.1 returned: hostA 172.29.100.1 returned: hostC 10.10.100.2 returned: hostB  10.10.100.5 - host unreachable |

**The task can be resolved at a basic and an advanced level.**

*The following is* ***an example*** *of the edge case that differentiates between basic and advanced solutions.*

Given the following network:



And executing the worm starting on the node named “hostname1” with the command line:

worm.py "hostname" 192.168.0.4,10.0.0.6,172.17.0.4

1. **Basic level**- The worm will not be able to hop through the node “hostname4”, that neither of it’s IPs were given as an input, and will not manage to get to 172.17.0.4. The worm will print:

|  |
| --- |
| 192.168.0.4 returned: hostname2 10.0.0.6 returned: hostname3 172.17.0.4 - host unreachable |

* 1. **This case should take around 4 hours to resolve.**

1. **Advanced level -** The worm will manage to get to 172.17.0.4 by running over “hostname4”. The worm will print:

|  |
| --- |
| 192.168.0.4 returned: hostname2 10.0.0.6 returned: hostname3 172.17.0.4 returned:  hostname5 |

* 1. **This case will take longer to resolve.**

**Important Note:**

1. The assignment should be resolved using Python.
2. You may resolve the task for either of the levels. Depending on your availability and will.
3. With the task you will find a docker-compose script which will help you to build a testing environment.
4. **You can’t assume anything about the network-structure (star/full mesh/tree etc.)  
   Some hosts may not be reachable at all, some may be reachable through other hosts.**
5. You will have your code only on the first host in the setup, but your application can copy files if it is needed.
6. All hosts are accessible using ssh at the standard port on all interfaces.
7. Keep in mind - **the assignment goal is to evaluate coding skills and networking knowledge**.
8. Please pay attention to **functionality, code design, clarity, performance and runtime**. If time presses, focus on functionality over output prettiness. If you are missing some part of the functionality because of time pressure, describe what is missed.
9. You may use any external library or framework during the development.

**—Please do not share this on GitHub or any other public platform—**