

## Coding Challenge

At Onboard we deal with networks on a daily basis, from navigating physical networks found in building infrastructure to representing connected equipment and sensors as nodes and connected edges for the purposes of machine learning or displaying information to end users.

Buildings often contain multiple networks of equipment and sensors from systems such as HVAC, lighting, fire, and security systems. For example, many buildings have an HVAC system with a single central plant that provides heated air throughout the building. The air is distributed throughout the building through equipment (e.g. Air Handling Units) which are connected by air ducts. Each of these equipment in turn has sensors that measure environmental data such as air temperature, air pressure as well as the operational data such as status (ON/OFF) of machine motors.

Help us figure out one of these networks! Imagine the HVAC system above in which a central plant feeds air handling equipment throughout the building. The equipment are connected via air ducts to the central plant directly or to other equipment, thus linking and supplying air to equipment and locations that are further from the plant. In addition, assume each piece of equipment has three sensors: Air Pressure (psi), Air Temperature (degrees F), and Equipment Status (on or off).

Energy analytics applications and technicians often need to find equipment that are outputting air that's too hot or too cold. Given the scenario described above (i.e. equipment and sensors organized in a network structure), can you please come up with a way to find all equipment in the building that have a Temperature reading above 100 degrees?

We do not expect exhaustive testing but please be confident your solution works with one example test case.