

Biology Coding: Data Centre Alarm Instructions

Biologists use fast computers, that are housed in special rooms called data centres, to study DNA with the aim of curing diseases and keeping people healthy. A data centre will have lots of computers in it, and to work properly the data centre needs constant monitoring to ensure that everything is working the way it should.

Your task will be to write a code that observes the data centre and alerts a scientist if something is not right.

For this activity you will focus on four factors that affect how the computers in the data centre perform: temperature, sound level, and vibration level.

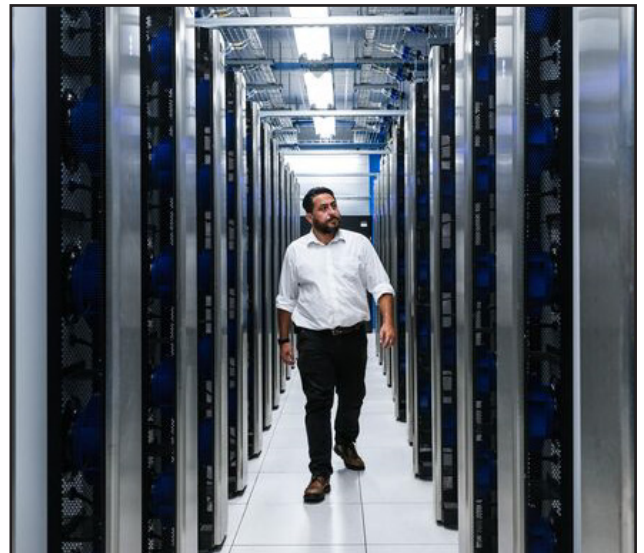
For step-by-step instructions please use the coding tutorial:

<https://makecode.microbit.org/#tutorial:97250-01341-16918-59862>

Or you can find your own method.

Your alarm system should:

- Use the micro:bit's sensors to tell what the temperature and sound level are, and if the device is shaking.
- Use logic functions to make an alarm sound if these variables are outside good working levels. Good working levels are temperature between 18-27C, sound level below 80dB, and not shaking;
- Use the display so that a scientist can quickly tell if everything is ok, or which variable is causing the alarm to sound;
- Optional: Have a password so your system is more secure.



A member of staff checking everything is functioning in the Wellcome Sanger Institute data centre.