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Project Repo URL : <https://github.com/annaballot/remote-work-clerk>

Video : <https://www.youtube.com/watch?v=PQUc7G24QuY&ab_channel=AnnaBallot>

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| Grade Band | Combined Knowledge | Networking Technologies | IoT Solution | Communication |
| Base | Output includes Programming (C++), Computer Systems, and Databases | Using Arduino, external sound sensor, temperature sensor and gesture sensor | Basic solution covers monitoring temperature and sound to notify user of a Teams message, or when the temperature increases above threshold. | README and video demonstration included |
| Good | 3 strands included: Programming (C++), Computer Systems, and Databases | Above + connected to Wifi + connected to local server to read and write data to MySQL database | Application includes data processing to read average sound values (and uses the historical average when the app starts to bypass calibration phase) and notify users when the sound is greater than a certain % over the average. This monitoring only happens when the user turns on sound monitoring via Blynk button, or hand gesture over Arduino. | Clear presentation and documentation within the Github Repository |
| Excellent | 3 strands included and demonstrated advanced programming concepts in the Arduino C++ code which includes loops, nested ifs etc, and advanced Computer Systems knowledge, using a variety of the architectures covered on the course | Using MQTT to write data to Thingspeak Channel, then API uses IFTTT and VoiceMonkey to mediate between Arduino and Amazon Echo Alexa (sends messages to Alexa in Kitchen when sound is detected) | This app is a good prototype as it is functional and renders it suitable for a production system (but there would be a few tweaks to do for production including further analysis on the calibration of the sound and temperature sensor, as well as moving the test local server to production). |  |
| Outstanding | Above + self-acquired knowledge of setting up a local server (XAMPP) with MySQL, and using PHP scripts to read and write data from Arduino code to the MySQL database |  |  |  |

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Additional Comments:

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