**The take home assignment is composed of two parts:**

**Part 1: Data Science – Skills Assessment**

Our team works within the part of Dell dealing with services to customers after purchasing a product. This means we deal with data regarding tech support, warranties, repairs, etc. For this assessment, we are interested in seeing some of your data skills and your thought process around making sense of this kind of data. Show us what you can do!

In your work sample, make sure to comment your work. **We are most interested in seeing your thought process, not just the code you write.** You can share your work through documents, notebooks, or any other means of your choice.

In addition to submitting your work sample exploring this dataset, write down interesting questions you think could be answered with this data, even if you can’t answer them all in the time allotted.

**Data Definitions**

*Asst\_id* – an identifier for each individual machine sold

*Product\_type* – class of product that describes the asset

*Region –* region where the asset is located

*Country* – country where the asset is located

*Mnfcture\_wk* – week when product was manufactured

*Contract\_st –* week when warranty became active

*Contract\_end –* week when warranty expires

*Contact\_wk –* week when customer contacted Dell about a problem

*Contact\_type –* way that customer contacted Dell

*Issue\_type* – type of problem identified by customer

*Topic\_category –* type of problem as classified by the tech support agent

*Parts\_sent –* what parts were sent to fix the problem

*Repair\_type –* if a part was required, this is a hard repair; otherwise, a soft repair

*Repeat\_ct –* how many additional visits were required to fix the problem, past the first one

*Parts\_ct –* how many parts were sent to fix the problem

*Agent\_tenure\_indays –* how long the tech support agent has worked in Dell tech support

*Contact\_manager\_flg –* did the tech support agent have to bring in a manager to solve the problem

*Diagnostics –* were agents compliant with diagnostic usage

*Repeat\_parts\_sent –* which parts were sent on additional visit

**Part 2: Engineering Skills Assessment**

Apart from your Data Analysis and Data Science work, we would also like to get to know your engineering skills.

1. Please package your work from part 1 in a python object (preferably class).
2. Write some sample tests for you object.
3. Use the tests to create a CICD pipeline to create a docker image and push it to Docker hub. (You can use GitHub actions or the free tier of Gitlab CICD tool alongside the free tier of Docker Hub account).

If you choose to focus on Part 2, the python object and the tests are purely for demonstration purposes, please avoid spending much time on them.

You can share you work through documents, notebooks, or any other means of your choice.

Good Luck!