# Full Stack Developer Technical Assignment

## User story

A client, a grain broker, manages several grain suppliers and customers, every month their customer base places their grain requirements and its then the job of the grain broker to determine the best supplier(s) to deliver against the requirements of their clients. Currently this is all handled in an excel spreadsheet and largely they operate on a first placed first fulfilled system. They would like to move to a more scalable and resilient platform for client management that also provides them with a level of insights / analytics.

## Task Summary

The purpose of this exercise is to take a standard dataset commonly used as an exemplar for optimisation problems and turn that into a 'product' consisting of backend, middleware, and front end.

The singular dataset provided includes all the data candidates need to:

* Ingest the CSV and determine the data models
* Design and implement a 'database/storage layer' (relational or non-relational are both totally acceptable as long as the candidate can justify them)
* Design, implement and test an API or decoupled middleware layer
* Design and implement a front end so that a client could better interact with this dataset, view data trends and both active and historical data. Consideration should be made for role-based access. The front end should include the implementation/consideration of authentication standards like OAuth, OpenID etc

## Outcome

It is not imperative that the candidate writes code for each stage, we would rather that they consider, document, and design each stage and be able to communicate with clarity around the decisions that they have or would have made. However, we would like to see a working solution for one of the stages:

* Backend, data ingestion, database design and implementation
* Middleware, a chosen middleware layer either API or equivalent communications solution.
* Front-end, a clean user interface that uses the middleware (where appropriate) to demonstrate a data driven dashboard.

This brief / task highlights a candidate’s ability to take quite an informal brief and a singular of view of data, their ability to synthesise data and turn flat data into a considered / scalable and resilient solutions architecture and look to how we would add further value via analytics / machine learning / statistical analysis or operational research.