**Team Five**

*ACME company is a pharmaceutical and biotechnology company. ACME company have experience with ML models to understand molecular structures however, they are a long way off from where they need to be for drug discovery. A key challenge involves predicting interactions between targets and drugs. Whilst dealing with branched chain amino acids or proteins, or even smaller molecules, ACME company have discovered the lack of labelled data making current ML training techniques challenging. By treating proteins and amino acids as text, there is a chance for LLMs to have an impact. Developments in deep learning has uncovered insights between smaller molecules and genetic perturbations allowing prediction and manufacture of drug combinations to treat complex diseases. ACME are keen to explore Generative AI technology for drug discovery and want your team to help them develop a system.*

**Key Stakeholders**

**VP of Engineering**

The end user of this systems are scientists from a variety of technical domains from biochemistry to physics, and will rely on it to pursue new avenues of technological research. The system will need to be able to train across dozens of terabytes of sequencing data and there is a possibility of graph databases which we are being used to model complex relationships between amino acids, proteins and small molecules.

The Engineering team would like to ensure that this ML system is highly accurate and the ability to be able to experiment frequently and easily is paramount to allow scientists to find new relationships between amino acids, protein and smaller molecules.

**Head of Data Science**

We have a data science and engineering team here at ACME with 20 members. The ML practitioners here are all have a background of biochemistry and are familiar with how to optimise ML models, Python is their language of choice. Since we are a healthcare company, protection of PII is absolutely critical and we want to ensure safeguards are present to protect sensitive patient data.

**Chief Financial Officer**

We are keen to explore this new space for drug discovery but it’s very important that we are able to forecast costs going forward, since we are at an experiment phase in development, strict budgets need to be enforced to ensure development costs don’t go over budget.