Data from Quality station of a manufacturing plant for device A is provided. Quality station measures various parameters for the device and also includes manufacturing related measures. There are 219 parameters measured for each device. **Machine\_State** column provides information on whether the machine passed or failed the quality checks.

Quality team wants to implement a machine learning algorithm to detect a bad device using the available 219 parameters. Additionally, it is known that the cost of a bad device passed in the station which fails in the field is $5000 and the cost of testing a good device classified as bad is $500.

Questions to be answered:

1. Design a model that can detect a bad device.
2. What will change in your model if cost of testing a good device was $5000?

Expected delivery:

1. Submit the submission.csv file duly filled with the output of your model.
2. Share the working script that can replicate your results.
3. Share a document (word or PowerPoint), clearly explaining your approach and assumptions. Include visualization wherever appropriate (e.g. data explorations), details of feature selection, details, if multiple models were tried, any tuning steps that were undertaken, etc.