Machine A: Bottle Filler
Machine A is responsible for filling bottles with liquid. It operates at an average speed of 500 bottles per minute. Common operating states include Running, Idle, and Maintenance. Failures usually involve nozzle clogging and inconsistent filling levels.

Machine B: Labeling Machine
Machine B applies labels to bottles as they pass along the conveyor. It operates at a speed of 450 bottles per minute. Operating states include Running, Idle, and Adjustment. Typical failures include misaligned labels and adhesive malfunctions.

Machine C: Capping Machine
Machine C places caps on filled bottles and ensures proper sealing. It works at a speed of 480 bottles per minute. Failures include loose caps, cross-threading, and cap feeder jams.

Machine D: Quality Control Scanner
Machine D inspects bottles for defects using an AI-powered vision system. It identifies issues such as incorrect labeling, improper sealing, and empty bottles. Failures include sensor malfunctions and misclassification errors