Rockwall Analytics
DATA & ANALYTICS ADVISORY

To: Aviation

From: Rockwall Analytics

Subject: Data Analytics

Date: December 19, 2020

Data Visualization

Use data to create a run chart and KPI (key performance indicators) tables based off of simulated Aviation data

Background Story

Abstract

At Aviation, we use many different styles of visualization charts to make decisions based off real time data

A Run Chart is a line graph that is plotted over time. Run Charts are considered time series charts, they are used to plot data points (typically) over a given time frame

KPI are values calculated such that input of a single number, gives insight to the performance of a process (is it behaving expected range)

OUT TASK

When parts are manufactured, as a part goes down the assembly line where individual design attributes are machined into what will be the finished part. **This is called an "Operation"**

Additional Information

A part can start out as a block of metal and through manufacturing *operations*, this block will become a useable part. After each *operation* there is an expected nominal measurement of the design attribute that is to be recorded in the manufacturing records

There also is an acceptable tolerance (how far off is the measurement allowed) from that nominal value

To help *Rockwall*, Aviation has designed an instance using the Dataiku tool. Here are the instructions to get started:

1. Read the instructions and task requirements below:
    - First Chart — Run Chart
        - Aviation has supplied a table that is ready to be visualized. Our task is to create a run chart that will visualize the measurement of a given feature of each *operation* for a given part number
        - We need to identify whether it is in or out of a given specification of that given feature (required design attribute)
    - Second Chart — KPI
        - SCM (Supply Chain Management) wants to know what the pass/fail rate is for each *operation* of a given part. It is crucial to identify KPI's at each stage of *operation* to identify when processes go out of control
2. Log into the Dataiku instance:
    - Check our email for an account name and password for access to the Dataiku platform
    - **Due to high demand in this program, please note our Dataiku account will be removed after 30 days of inactivity**
3. Use the Dataiku instance to complete the task:
    - Aviation included some useful materials to help us get started in the links below
        - How to use Dataiku
        - How to select data from multiple tables by using the PostgreSQL INNER JOIN clause