

Deloitte Data Analytics Virtual Internship Report

Varsha Niharika Mallampati

February 17, 2025

Overview

As part of the Deloitte Data Analytics Virtual Internship hosted on Forage, I completed two real-world inspired data tasks involving business intelligence, data visualization, and Excel-based analytics. These tasks simulated actual problems faced by Deloitte's clients and allowed me to demonstrate proficiency in Tableau and Excel.

Task 1: Factory Telemetry Visualization

Objective: Analyze machine telemetry from four global Daikibo factories and identify locations and machine types with the most downtime.

Steps Involved

- Imported JSON telemetry data into Tableau.
- Created a calculated field “**Unhealthy**” to represent 10 minutes of potential downtime for every unhealthy machine status.
- Built two bar charts:
 - **Down Time per Factory**
 - **Down Time per Device Type**
- Combined these charts in an interactive dashboard with factory-level filtering.

Key Outcome

Identified **Daikibo Factory Seiko (Osaka, Japan)** as the location with the highest machine downtime during May 2021, primarily caused by the **Laser Cutter** device type.

Interpretation: This insight suggests a potential issue with the maintenance, quality, or workload of Laser Cutter machines at the Seiko factory. It may warrant further investigation into machine usage patterns, maintenance schedules, or operator training to reduce downtime and improve operational efficiency.

Tools Used

Tableau, JSON, Data Dashboarding

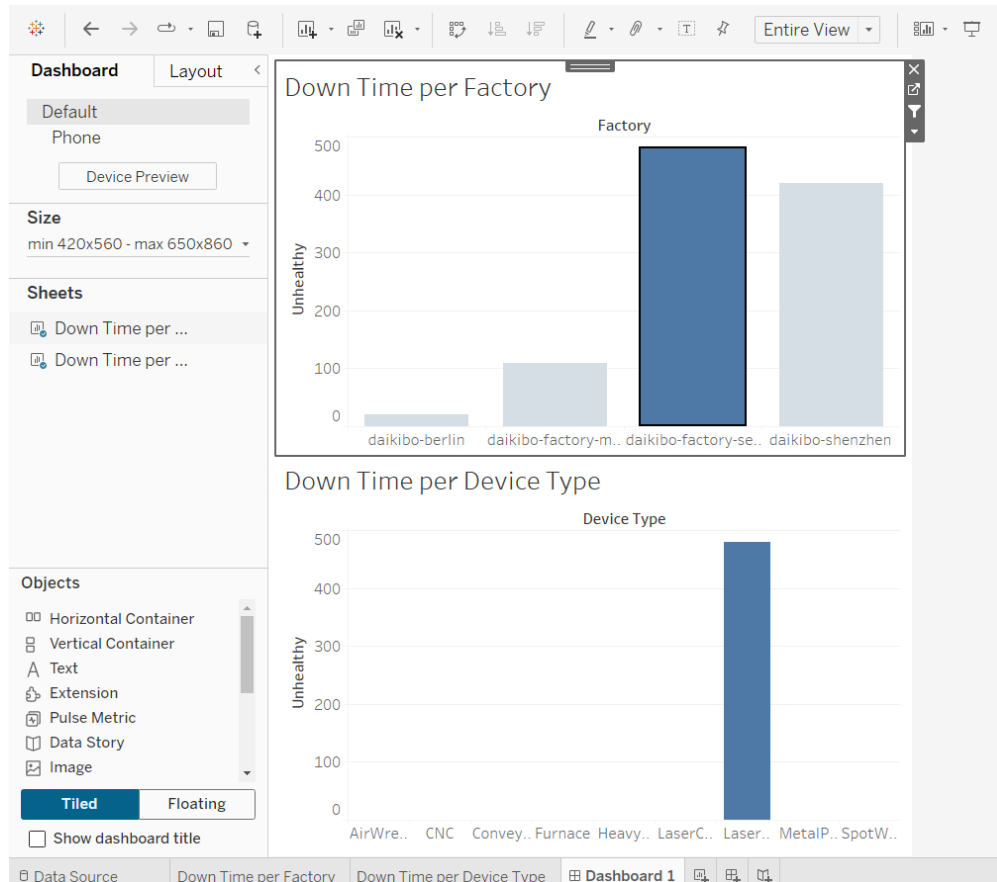


Figure 1: Dashboard Showing Downtime by Factory and Device Type

Task 2: Gender Pay Equality Classification

Objective: Analyze job roles and factories using Deloitte's Equality Score to classify fairness in compensation.

Steps Involved

- Worked with the provided Excel dataset.
- Used conditional formulas to classify equality scores into:
 - **Fair** ($|score| \leq 10$)
 - **Unfair** ($10 < |score| \leq 20$)
 - **Highly Discriminative** ($|score| > 20$)
- Created a new column titled **Equality Class** based on classification logic.

Tools Used

Microsoft Excel, Formula Logic, Data Classification

	A	B	C	D
1	Factory	Job Role	Equality Score	Equality class
2	Daikibo Factory Meiyo	C-Level	-25	
3	Daikibo Factory Meiyo	VP	-26	
4	Daikibo Factory Meiyo	Director	-19	
5	Daikibo Factory Meiyo	Sr. Manager	-15	
6	Daikibo Factory Meiyo	Manager	-14	
7	Daikibo Factory Meiyo	Jr. Manager	-20	
8	Daikibo Factory Meiyo	Sr. Engineer	-5	
9	Daikibo Factory Meiyo	Engineer	-8	
10	Daikibo Factory Meiyo	Jr. Engineer	3	
11	Daikibo Factory Meiyo	Operational Support	-22	
12	Daikibo Factory Meiyo	Machine Operator	-7	
13	Daikibo Factory Seiko	VP	-19	
14	Daikibo Factory Seiko	Director	-10	
15	Daikibo Factory Seiko	Sr. Manager	-21	
16	Daikibo Factory Seiko	Manager	-21	
17	Daikibo Factory Seiko	Jr. Manager	-24	
18	Daikibo Factory Seiko	Sr. Engineer	-4	
19	Daikibo Factory Seiko	Engineer	-7	
20	Daikibo Factory Seiko	Jr. Engineer	4	
21	Daikibo Factory Seiko	Operational Support	-19	
22	Daikibo Factory Seiko	Machine Operator	-5	
23	Daikibo Berlin	Sr. Manager	-15	
24	Daikibo Berlin	Manager	-16	
25	Daikibo Berlin	Jr. Manager	-17	
26	Daikibo Berlin	Sr. Engineer	4	
27	Daikibo Berlin	Engineer	2	
28	Daikibo Berlin	Jr. Engineer	4	
29	Daikibo Berlin	Operational Support	0	
30	Daikibo Berlin	Machine Operator	-6	
31	Daikibo Shenzhen	Sr. Manager	-21	
32	Daikibo Shenzhen	Manager	-19	
33	Daikibo Shenzhen	Jr. Manager	-20	
34	Daikibo Shenzhen	Sr. Engineer	-5	
35	Daikibo Shenzhen	Engineer	-4	
36	Daikibo Shenzhen	Jr. Engineer	3	
37	Daikibo Shenzhen	Operational Support	-7	
38	Daikibo Shenzhen	Machine Operator	-7	
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Figure 2: Excel Sheet Before adding the formula for Equality Class

	A	B	C	D
1	Factory	Job Role	Equality Score	Equality class
2	Daikibo Factory Meiyo	C-Level	-25	Highly Discriminative
3	Daikibo Factory Meiyo	VP	-26	Highly Discriminative
4	Daikibo Factory Meiyo	Director	-19	Unfair
5	Daikibo Factory Meiyo	Sr. Manager	-15	Unfair
6	Daikibo Factory Meiyo	Manager	-14	Unfair
7	Daikibo Factory Meiyo	Jr. Manager	-20	Unfair
8	Daikibo Factory Meiyo	Sr. Engineer	-5	Fair
9	Daikibo Factory Meiyo	Engineer	-8	Fair
10	Daikibo Factory Meiyo	Jr. Engineer	3	Fair
11	Daikibo Factory Meiyo	Operational Support	-22	Highly Discriminative
12	Daikibo Factory Meiyo	Machine Operator	-7	Fair
13	Daikibo Factory Seiko	VP	-19	Unfair
14	Daikibo Factory Seiko	Director	-10	Fair
15	Daikibo Factory Seiko	Sr. Manager	-21	Highly Discriminative
16	Daikibo Factory Seiko	Manager	-21	Highly Discriminative
17	Daikibo Factory Seiko	Jr. Manager	-24	Highly Discriminative
18	Daikibo Factory Seiko	Sr. Engineer	-4	Fair
19	Daikibo Factory Seiko	Engineer	-7	Fair
20	Daikibo Factory Seiko	Jr. Engineer	4	Fair
21	Daikibo Factory Seiko	Operational Support	-19	Unfair
22	Daikibo Factory Seiko	Machine Operator	-5	Fair
23	Daikibo Berlin	Sr. Manager	-15	Unfair
24	Daikibo Berlin	Manager	-16	Unfair
25	Daikibo Berlin	Jr. Manager	-17	Unfair
26	Daikibo Berlin	Sr. Engineer	4	Fair
27	Daikibo Berlin	Engineer	2	Fair
28	Daikibo Berlin	Jr. Engineer	4	Fair
29	Daikibo Berlin	Operational Support	0	Fair
30	Daikibo Berlin	Machine Operator	-6	Fair
31	Daikibo Shenzhen	Sr. Manager	-21	Highly Discriminative
32	Daikibo Shenzhen	Manager	-19	Unfair
33	Daikibo Shenzhen	Jr. Manager	-20	Unfair
34	Daikibo Shenzhen	Sr. Engineer	-5	Fair
35	Daikibo Shenzhen	Engineer	-4	Fair
36	Daikibo Shenzhen	Jr. Engineer	3	Fair
37	Daikibo Shenzhen	Operational Support	-7	Fair
38	Daikibo Shenzhen	Machine Operator	-7	Fair
39				
40				

Figure 3: Excel Sheet After adding the formula for Equality Class

Certificate

Successfully completed and earned a certificate from the Deloitte Data Analytics Virtual Internship via Forage.

Deloitte.

Varsha Niharika Mallampati **Data Analytics Job Simulation**

Certificate of Completion
February 17th, 2025

Over the period of February 2025, Varsha Niharika Mallampati has completed practical tasks in:

Data analysis
Forensic technology



Tina McCreery
Chief Human
Resources Officer,
Deloitte

Enrolment Verification Code AzytoAXKu5gTNasp8 | User Verification Code QSCA4wPSya9soe65D | Issued by **Forage**

Figure 4: Deloitte Certificate