

وزارة الاتصالات
وتكنولوجيا المعلومات



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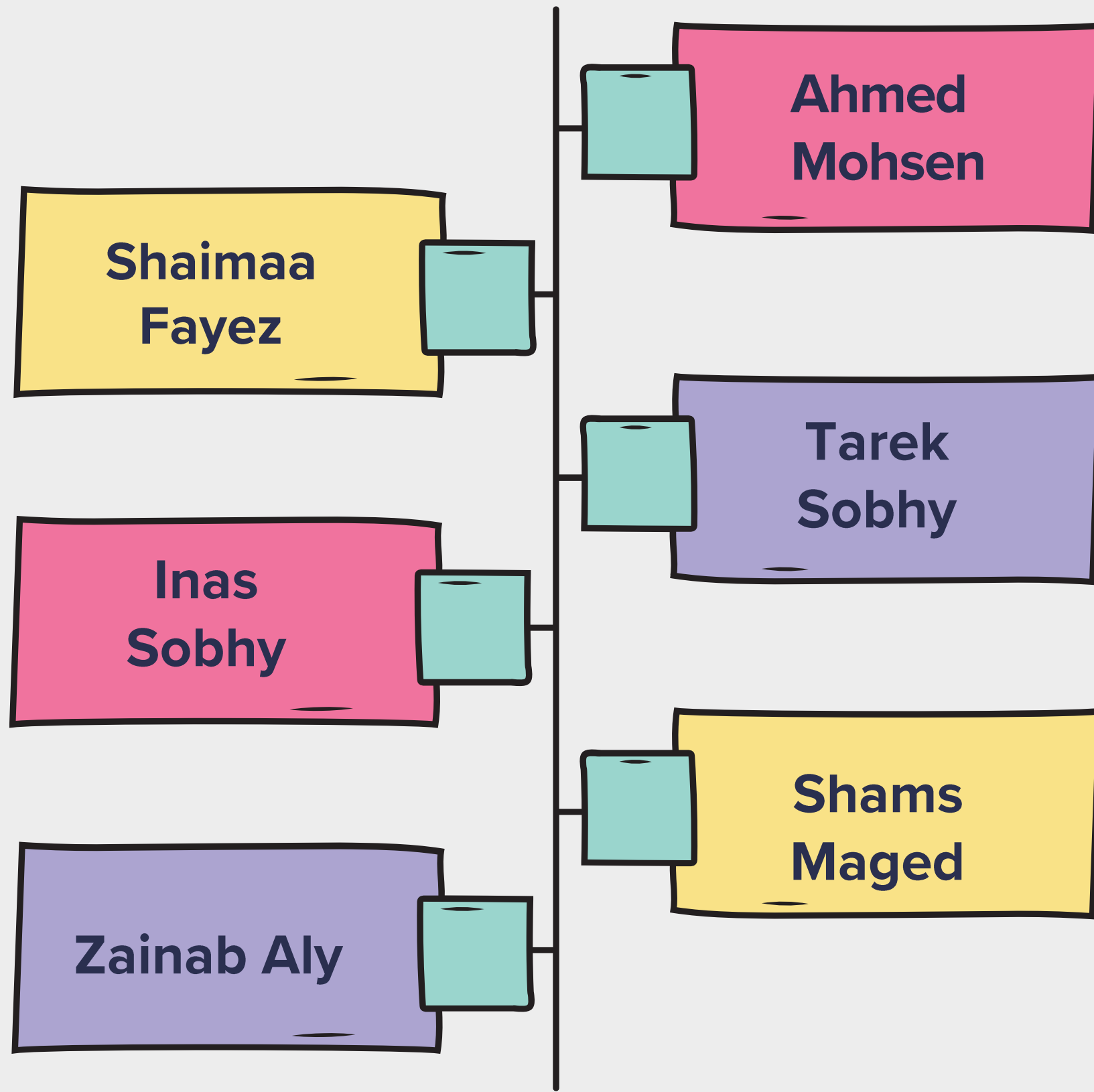
**An Analytical Review of Downtime Factors and Their Impact
on Soda Production Efficiency.**

Project Idea

Analysis of productivity and downtime in a soda bottling production line. The dataset includes important details such as the operator, product, start and end times, and reasons for downtime for each batch. By studying these factors, we can understand what causes delays, spot inefficiencies, and find ways to improve the production line's performance.



Meet the Team





Project Process

Modeling

Sample Visual

Dashboard



Clean



DAX



Report



Clean Data



Line downtime table

- 1. Check header (use first row as a header).
- 2. Check datatype for headers Batch :Text format
- 3. transform (unpivot other column)
- 4. Attribute changed to Factor (header)
- 5. Value changed to Downtime (header)

Project 24_3

File Home Transform Add Column View Tools Help

Close & Apply New Source Recent Enter Data Data source settings Manage Parameters Refresh Preview Advanced Editor Choose Remove Keep Remove Split Group Data Type: Text Merge Queries Append Queries Combine Files

Queries [4]

Downtime factors

Line downtime

Line productivity

Products

Table.RenameColumns(#"Unpivoted Other Columns",{"Attribute", "Factor"}, {"Value", "Downtime"})

Batch	Factor	Downtime
422111	2	60
422111	7	15
422112	2	20
422112	8	20
422113	2	50
422114	4	25
422114	6	15
422115	10	24
422117	2	10
422117	6	5
422118	6	14
422118	7	16
422118	11	10
422118	12	20
422119	4	25
422120	9	17
422121	7	15
422122	7	25
422123	4	43
422123	7	30
422124	5	20
422124	6	20
422125	11	10
422125	12	10
422126	8	44
422127	6	23

Query Settings

PROPERTIES

Name

Line downtime

APPLIED STEPS

Source

Navigation

Promoted Headers

Changed Type

Promoted Headers1

Changed Type1

Unpivoted Other Columns

Renamed Columns

Merged Queries

Expanded Downtime factors

After

Line downtime2

Line productivity1

Products2

1	422111	null	60	null	null	null	15
2	422112	null	20	null	null	null	null
3	422113	null	50	null	null	null	null
4	422114	null	null	null	25	null	15
5	422115	null	null	null	null	null	null
6	422116	null	null	null	null	null	null
7	422117	null	10	null	null	null	5
8	422118	null	null	null	null	null	14
9	422119	null	null	null	25	null	null
10	422120	null	null	null	20	15	null
11	422121	null	null	null	null	null	15
12	422122	null	null	null	null	null	25
13	422123	null	null	null	43	null	30
14	422124	null	null	null	20	20	null
15	422125	null	null	null	null	null	null
16	422126	null	null	null	null	null	null
17	422127	null	null	null	null	null	23
18	422128	null	null	null	null	22	30
19	422129	null	null	null	null	null	null
20	422130	null	20	null	null	null	null
21	422131	null	null	null	20	null	null
22	422132	null	null	null	null	null	null
23	422133	null	null	null	null	null	20
24	422134	null	null	null	null	null	20
25	422135	null	null	null	30	null	null
26	422136	null	null	null	null	null	null
27	422137	null	null	null	null	null	null
28	422138	null	null	20	null	null	null
29	422139	null	null	null	20	null	15
30	422140	null	null	null	null	null	50
31	422141	null	null	null	null	null	null
32	422142	null	null	null	null	null	30
33	422143	null	null	null	null	null	40
34	422144	null	null	null	null	null	30
35	422145	null	null	22	null	null	null
36	422146	null	null	null	null	null	30
37	422147	null	null	null	17	null	30

Properties

Name

Line downtime2

APPLIED STEPS

Source

Navigation

Changed Type

Before



LINE PRODUCTIVITY TABLE

- Check the datatype for header Batch: Text format
- Calculate (Batch duration) Add column, custom column, end time_ start time.
- Clean and trim for operator column

Downtime_factor	Line_downtime3	Line_productivity1	Products2	Date	Product	Batch	Operator	Start Time	End Time
	1			8/29/2024	OR-600		422111 Mac	12/31/1899 11:50:00 AM	12/31/1899 2:05:00 PM
	2			8/29/2024	LE-600		422112 Mac	12/31/1899 2:05:00 PM	12/31/1899 3:45:00 PM
	3			8/29/2024	LE-600		422113 Mac	12/31/1899 3:45:00 PM	12/31/1899 5:35:00 PM
	4			8/29/2024	LE-600		422114 Mac	12/31/1899 5:35:00 PM	12/31/1899 7:15:00 PM
	5			8/29/2024	LE-600		422115 Charlie	12/31/1899 7:15:00 PM	12/31/1899 8:39:00 PM
	6			8/29/2024	LE-600		422116 Charlie	12/31/1899 8:39:00 PM	12/31/1899 9:39:00 PM
	7			8/29/2024	LE-600		422117 Charlie	12/31/1899 9:39:00 PM	12/31/1899 10:54:00 PM
	8			8/30/2024	CO-600		422118 Dee	12/31/1899 4:05:00 AM	12/31/1899 6:05:00 AM
	9			8/30/2024	CO-600		422119 Dee	12/31/1899 6:05:00 AM	12/31/1899 7:30:00 AM
	10			8/30/2024	CO-600		422120 Dee	12/31/1899 7:30:00 AM	12/31/1899 9:22:00 AM
	11			8/30/2024	CO-600		422121 Dennis	12/31/1899 9:22:00 AM	12/31/1899 10:37:00 AM
	12			8/30/2024	CO-600		422122 Dennis	12/31/1899 10:37:00 AM	12/31/1899 12:02:00 PM
	13			8/30/2024	CO-600		422123 Dennis	12/31/1899 12:02:00 PM	12/31/1899 2:15:00 PM
	14			8/30/2024	CO-600		422124 Dennis	12/31/1899 2:15:00 PM	12/31/1899 3:55:00 PM
	15			8/30/2024	CO-600		422125 Charlie	12/31/1899 3:55:00 PM	12/31/1899 5:15:00 PM
	16			8/30/2024	CO-600		422126 Charlie	12/31/1899 5:15:00 PM	12/31/1899 6:59:00 PM
	17			8/30/2024	CO-600		422127 Charlie	12/31/1899 6:59:00 PM	12/31/1899 8:22:00 PM
							422128 Charlie	12/31/1899 8:22:00 PM	12/31/1899 10:14:00 PM
							422129 Charlie	12/31/1899 10:14:00 PM	12/31/1899 11:29:00 PM
							422130 Dee	12/31/1899 11:29:00 PM	12/31/1899 12:39:00 PM
							422131 Dee	12/31/1899 12:39:00 PM	12/31/1899 1:45:00 PM
							422132 Dee	12/31/1899 1:45:00 PM	12/31/1899 2:45:00 PM
							422133 Dee	12/31/1899 2:45:00 PM	12/31/1899 3:40:00 PM
							422134 Mac	12/31/1899 3:40:00 PM	12/31/1899 4:30:00 PM
							422135 Mac	12/31/1899 4:30:00 PM	12/31/1899 5:30:00 PM
							422137 Dee	12/31/1899 5:30:00 AM	12/31/1899 6:45:00 AM
							422138 Dee	12/31/1899 6:45:00 AM	12/31/1899 7:45:00 AM
							422139 Dee	12/31/1899 7:45:00 AM	12/31/1899 8:50:00 AM
							422140 Dee	12/31/1899 8:50:00 AM	12/31/1899 9:50:00 AM
							422141 Dennis	12/31/1899 9:50:00 AM	12/31/1899 10:50:00 AM
							422142 Dennis	12/31/1899 10:50:00 AM	12/31/1899 11:50:00 AM
							422143 Dennis	12/31/1899 11:50:00 AM	12/31/1899 12:50:00 PM
							422144 Charlie	12/31/1899 12:50:00 PM	12/31/1899 1:50:00 PM
							422145 Charlie	12/31/1899 1:50:00 PM	12/31/1899 2:50:00 PM
							422146 Charlie	12/31/1899 2:50:00 PM	12/31/1899 3:50:00 PM
							422147 Charlie	12/31/1899 3:50:00 PM	12/31/1899 4:50:00 PM
							422148 Mac	12/31/1899 4:50:00 PM	12/31/1899 5:50:00 PM
							422149 Mac	12/31/1899 5:50:00 PM	12/31/1899 6:50:00 PM
							422150 Mac	12/31/1899 6:50:00 PM	12/31/1899 7:50:00 PM
							422151 Mac	12/31/1899 7:50:00 PM	12/31/1899 8:50:00 PM
							422152 Mac	12/31/1899 8:50:00 PM	12/31/1899 9:50:00 PM
							422153 Mac	12/31/1899 9:50:00 PM	12/31/1899 10:50:00 PM
							422154 Mac	12/31/1899 10:50:00 PM	12/31/1899 11:50:00 PM
							422155 Mac	12/31/1899 11:50:00 PM	12/31/1899 12:50:00 PM
							422156 Mac	12/31/1899 12:50:00 PM	12/31/1899 1:50:00 PM
							422157 Mac	12/31/1899 1:50:00 PM	12/31/1899 2:50:00 PM
							422158 Mac	12/31/1899 2:50:00 PM	12/31/1899 3:50:00 PM
							422159 Mac	12/31/1899 3:50:00 PM	12/31/1899 4:50:00 PM
							422160 Mac	12/31/1899 4:50:00 PM	12/31/1899 5:50:00 PM
							422161 Mac	12/31/1899 5:50:00 PM	12/31/1899 6:50:00 PM
							422162 Mac	12/31/1899 6:50:00 PM	12/31/1899 7:50:00 PM
							422163 Mac	12/31/1899 7:50:00 PM	12/31/1899 8:50:00 PM
							422164 Mac	12/31/1899 8:50:00 PM	12/31/1899 9:50:00 PM
							422165 Mac	12/31/1899 9:50:00 PM	12/31/1899 10:50:00 PM
							422166 Mac	12/31/1899 10:50:00 PM	12/31/1899 11:50:00 PM
							422167 Mac	12/31/1899 11:50:00 PM	12/31/1899 12:50:00 PM
							422168 Mac	12/31/1899 12:50:00 PM	12/31/1899 1:50:00 PM
							422169 Mac	12/31/1899 1:50:00 PM	12/31/1899 2:50:00 PM
							422170 Mac	12/31/1899 2:50:00 PM	12/31/1899 3:50:00 PM
							422171 Mac	12/31/1899 3:50:00 PM	12/31/1899 4:50:00 PM
							422172 Mac	12/31/1899 4:50:00 PM	12/31/1899 5:50:00 PM
							422173 Mac	12/31/1899 5:50:00 PM	12/31/1899 6:50:00 PM
							422174 Mac	12/31/1899 6:50:00 PM	12/31/1899 7:50:00 PM
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							422177 Mac	12/31/1899 9:50:00 PM	12/31/1899 10:50:00 PM
							422178 Mac	12/31/1899 10:50:00 PM	12/31/1899 11:50:00 PM
							422179 Mac	12/31/1899 11:50:00 PM	12/31/1899 12:50:00 PM
							422180 Mac	12/31/1899 12:50:00 PM	12/31/1899 1:50:00 PM
							422181 Mac	12/31/1899 1:50:00 PM	12/31/1899 2:50:00 PM
							422182 Mac	12/31/1899 2:50:00 PM	12/31/1899 3:50:00 PM
							422183 Mac	12/31/1899 3:50:00 PM	12/31/1899 4:50:00 PM
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							422188 Mac	12/31/1899 8:50:00 PM	12/31/1899 9:50:00 PM
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							422190 Mac	12/31/1899 10:50:00 PM	12/31/1899 11:50:00 PM
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							422193 Mac	12/31/1899 1:50:00 PM	12/31/1899 2:50:00 PM
							422194 Mac	12/31/1899 2:50:00 PM	12/31/1899 3:50:00 PM
							422195 Mac	12/31/1899 3:50:00 PM	12/31/1899 4:50:00 PM
							422196 Mac	12/31/1899 4:50:00 PM	12/31/1899 5:50:00 PM
							422197 Mac	12/31/1899 5:50:00 PM	12/31/1899 6:50:00 PM
							422198 Mac	12/31/1899 6:50:00 PM	12/31/1899 7:50:00 PM
							422199 Mac	12/31/1899 7:50:00 PM	12/31/1899 8:50:00 PM
							422200 Mac	12/31/1899 8:50:00 PM	12/31/1899 9:50:00 PM
							422201 Mac	12/31/1899 9:50:00 PM	12/31/1899 10:50:00 PM
							422202 Mac	12/31/1899 10:50:00 PM	12/31/1899 11:50:00 PM
							422203 Mac	12/31/1899 11:50:00 PM	12/31/1899 12:50:00 PM
							422204 Mac	12/31/1899 12:50:00 PM	12/31/1899 1:50:00 PM
							422205 Mac	12/31/1899 1:50:00 PM	12/31/1899 2:50:00 PM
							422206 Mac	12/31/1899 2:50:00 PM	12/31/1899 3:50:00 PM
							422207 Mac	12/31/1899 3:50:00 PM	12/31/1899 4:50:00 PM
							422208 Mac	12/31/1899 4:50:00 PM	12/31/1899 5:50:00 PM
							422209 Mac	12/31/1899 5:50:00 PM	12/31/1899 6:50:00 PM
							422210 Mac	12/31/1899 6:50:00 PM	12/31/1899 7:50:00 PM
							422211 Mac	12/31/1899 7:50:00 PM	12/31/1899 8:50:00 PM
							422212 Mac	12/31/1899 8:50:00 PM	12/31/1899 9:50:00 PM
							422213 Mac	12/31/1899 9:50:00 PM	12/31/1899 10:50:00 PM
							422214 Mac	12/31/1899 10:50:00 PM	12/31/1899 11:50:00 PM
							422215 Mac	12/31/1899 11:50:00 PM	12/31/1899 12:50:00 PM
							422216 Mac	12/31/1899 12:50:00 PM	12/31/1899 1:50:00 PM
							422217 Mac	12/31/1899 1:50:00 PM	12/31/1899 2:50:00 PM
							422218 Mac	12/31/1899 2:50:00 PM	12/31/1899 3:50:00 PM
							422219 Mac	12/31/1899 3:50:00 PM	12/31/1899 4:50:00 PM
							422220 Mac	12/31/1899 4:50:00 PM	12/31/1899 5:50:00 PM
							422221 Mac	12/31/1899 5:50:00 PM	12/31/1899 6:50:00 PM
							422222 Mac	12/31/1899 6:50:00 PM	12/31/1899 7:50:00 PM
							422223 Mac	12/31/1899 7:50:00 PM	12/31/1899 8:50:00 PM
							422224 Mac	12/31/1899 8:50:00 PM	12/31/1899 9:50:00 PM
							422225 Mac	12/31/1899 9:50:00 PM	12/31/1899 10:50:00 PM
							422226 Mac	12/31/1899 10:50:00 PM	12/31/1899 11:50:00 PM
							422227 Mac	12/31/1899 11:50:00 PM	12/31/1899 12:50:00 PM
							422228 Mac	12/31/1899 12:50:00 PM	12/31/1899 1:50:00 PM
							422229 Mac	12/31/1899 1:50:00 PM	12/31/1899 2:50:00 PM
							422230 Mac	12/31/1899 2:50:00 PM	12/31/1899 3:50:00 PM
							422231 Mac	12/31/1899 3:50:00 PM	12/31/1899 4:50:00 PM
							422232 Mac	12/31/1899 4:50:00 PM	12/31/1899 5:50:00 PM
							422233 Mac	12/31/1899 5:50:00 PM	12/31/1899 6:50:00 PM
							422234 Mac	12/31/1899 6:50:00 PM	12/31/1899 7:50:00 PM
							422235 Mac	12/31/1899 7:50:00 PM	12/31/1899 8:50:00 PM
							422236 Mac	12/31/1899 8:50:00 PM	12/31/1899 9:50:00 PM
							422237 Mac	12/31/1899 9:50:00 PM	12/31/1899 10:50:00 PM
							422238 Mac	12/31/1899 10:50:00 PM	12/31/1899 11:50:00 PM
							422239 Mac	12/31/1899 11:50:00 PM	12/31/1899 12:50:00 PM

Downtime Factors Table

- 1. The data type is text for all columns
 - 2. Clean and trim the description column.
 - 3. add column, conditional column
- OPERATOR ERROR YES, HUMAN
OPERATOR ERROR=NO, MACHINE

Factor	Description	Operator Error
1	Emergency stop	No
2	Batch change	Yes
3	Labeling error	No
4	Inventory shortage	No
5	Product spill	Yes
6	Machine adjustment	Yes
7	Machine failure	No
8	Batch coding error	Yes
9	Conveyor belt jam	No
10	Calibration error	Yes
11	Label switch	Yes
12	Other	No

Before

Properties: Name: Downtime_factor

Applied Steps: Source, Navigation, Changed Type

Queries [6]

- Line downtime
- Downtime factors
- Line productivity
- Products
- All measures
- All Measures

fx = Table.TransformColumnTypes(#"Added Conditional Column",{"Error", type text})

Factor	Description	Operator Error	Error
1	Emergency stop	No	Machine
2	Batch change	Yes	Human
3	Labeling error	No	Machine
4	Inventory shortage	No	Machine
5	Product spill	Yes	Human
6	Machine adjustment	Yes	Human
7	Machine failure	No	Machine
8	Batch coding error	Yes	Human
9	Conveyor belt jam	No	Machine
10	Calibration error	Yes	Human
11	Label switch	Yes	Human
12	Other	No	Machine

Query Settings

Properties: Name: Downtime factors

Applied Steps: Source, Navigation, Promoted Headers, Changed Type, Added Conditional Column, Changed Type1

After

Before Merge Row Data

2024-08-29	LE-600	422115	Charlie	19:15:00	20:39:00
2024-08-29	LE-600	422116	Charlie	20:39:00	21:39:00
2024-08-29	LE-600	422117	Charlie	21:39:00	22:54:00
2024-08-30	CO-600	422118	Dee	04:05:00	08:05:00
2024-08-30	CO-600	422119	Dee	08:05:00	07:30:00
2024-08-30	CO-600	422120	Dee	07:30:00	09:22:00
2024-08-30	CO-600	422121	Dennis	09:22:00	10:37:00
2024-08-30	CO-600	422122	Dennis	10:37:00	12:02:00
2024-08-30	CO-600	422123	Dennis	12:02:00	14:15:00
2024-08-30	CO-600	422124	Dennis	14:15:00	15:55:00
2024-08-30	CO-600	422125	Charlie	15:55:00	17:15:00
2024-08-30	CO-600	422126	Charlie	17:15:00	18:59:00
2024-08-30	CO-600	422127	Charlie	18:59:00	20:22:00
2024-08-30	CO-600	422128	Charlie	20:22:00	22:14:00
2024-08-30	CO-600	422129	Charlie	22:14:00	23:29:00
2024-08-31	CO-600	422130	Dee	07:45:00	09:05:00
2024-08-31	CO-600	422131	Dee	09:05:00	10:35:00
2024-08-31	CO-600	422132	Dee	10:35:00	11:35:00
2024-08-31	DC-600	422133	Dee	11:35:00	12:55:00
2024-08-31	DC-600	422134	Mac	12:55:00	14:45:00
2024-08-31	DC-600	422135	Mac	14:45:00	16:30:00
2024-08-31	DC-600	422136	Mac	16:30:00	17:30:00
2024-09-02	RB-600	422137	Dee	01:00:00	02:45:00
2024-09-02	RB-600	422138	Dee	02:45:00	04:05:00
2024-09-02	RB-600	422139	Dee	04:05:00	05:40:00
2024-09-02	RB-600	422140	Dee	05:40:00	07:43:00
2024-09-02	RB-600	422141	Dennis	07:43:00	08:50:00
2024-09-02	RB-600	422142	Dennis	08:50:00	10:20:00
2024-09-02	RB-600	422143	Dennis	10:20:00	12:18:00

avor	Size	Min ba
range	600 ml	
emon lime	600 ml	
ola	600 ml	
et Cola	600 ml	
oot Beer	600 ml	
ola	2 L	

Factor	Description	Operator Error
1	Emergency stop	No
2	Batch change	Yes
3	Labeling error	No
4	Inventory shortage	No
5	Product spill	Yes
6	Machine adjustment	Yes
7	Machine failure	No
8	Batch coding error	Yes
9	Conveyor belt jam	No
10	Calibration error	Yes
11	Label switch	Yes
12	Other	No

After Merge QUERIES

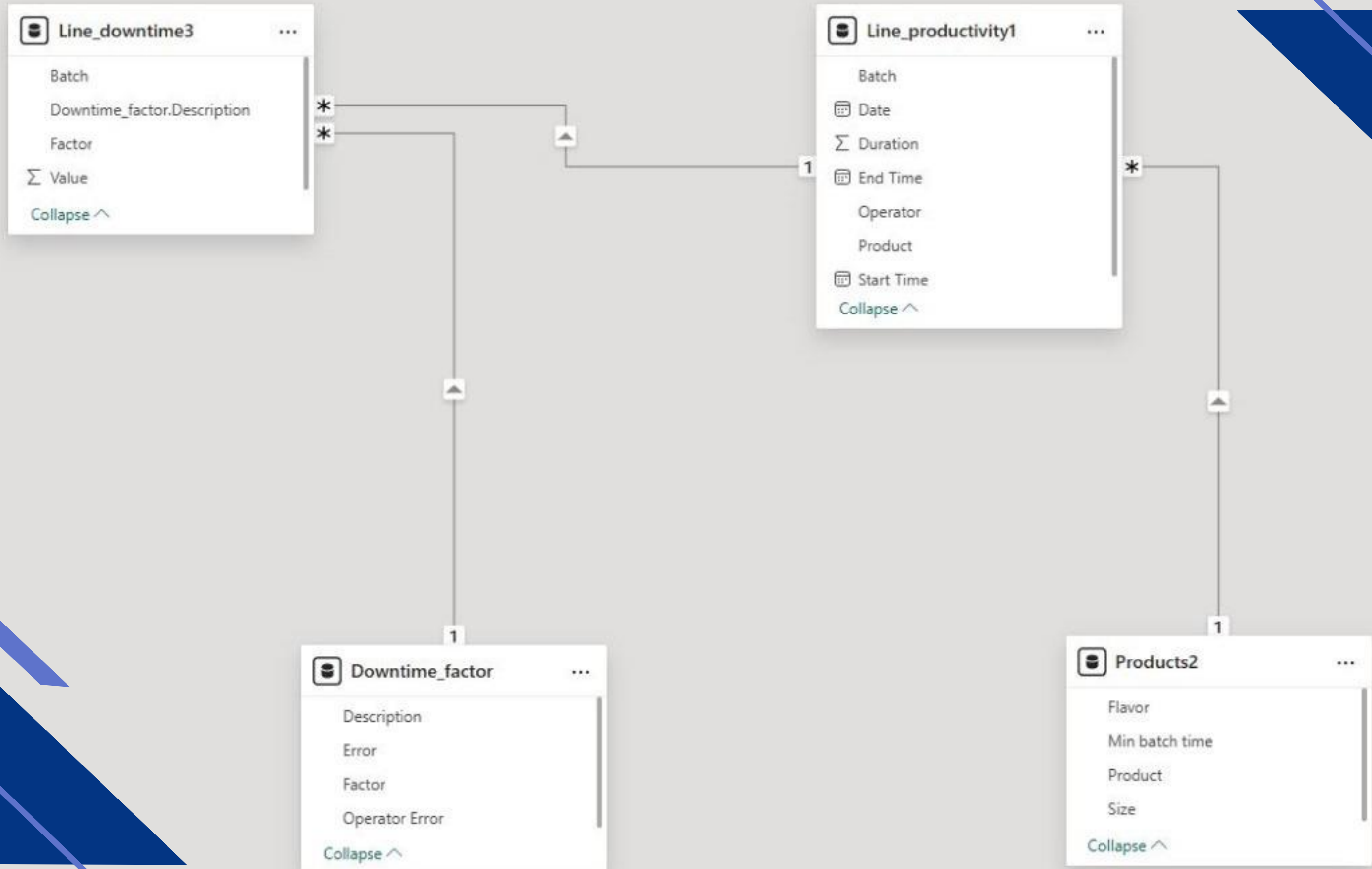
The screenshot shows the Power Query Editor interface. The main area displays a table with 4 columns: Batch, Factor, Value, and Downtime factors.Description. The table contains 23 rows of data. The right-hand pane shows the 'Query Settings' for 'Line downtime', with the 'APPLIED STEPS' list including 'Expanded Downtime factors'.

Batch	Factor	Value	Downtime factors.Description
422111	2		60 Batch change
422112	2		20 Batch change
422113	2		50 Batch change
422117	2		10 Batch change
422111	7		15 Machine failure
422118	7		16 Machine failure
422112	8		20 Batch coding error
422114	4		25 Inventory shortage
422114	6		15 Machine adjustment
422117	6		5 Machine adjustment
422118	6		14 Machine adjustment
422115	10		24 Calibration error
422118	11		10 Label switch
422118	12		20 Other
422119	4		25 Inventory shortage
422120	4		20 Inventory shortage
422120	5		15 Product spill
422120	9		17 Conveyor belt jam
422121	7		15 Machine failure
422122	7		25 Machine failure
422123	4		43 Inventory shortage
422123	7		30 Machine failure
422124	5		20 Product spill

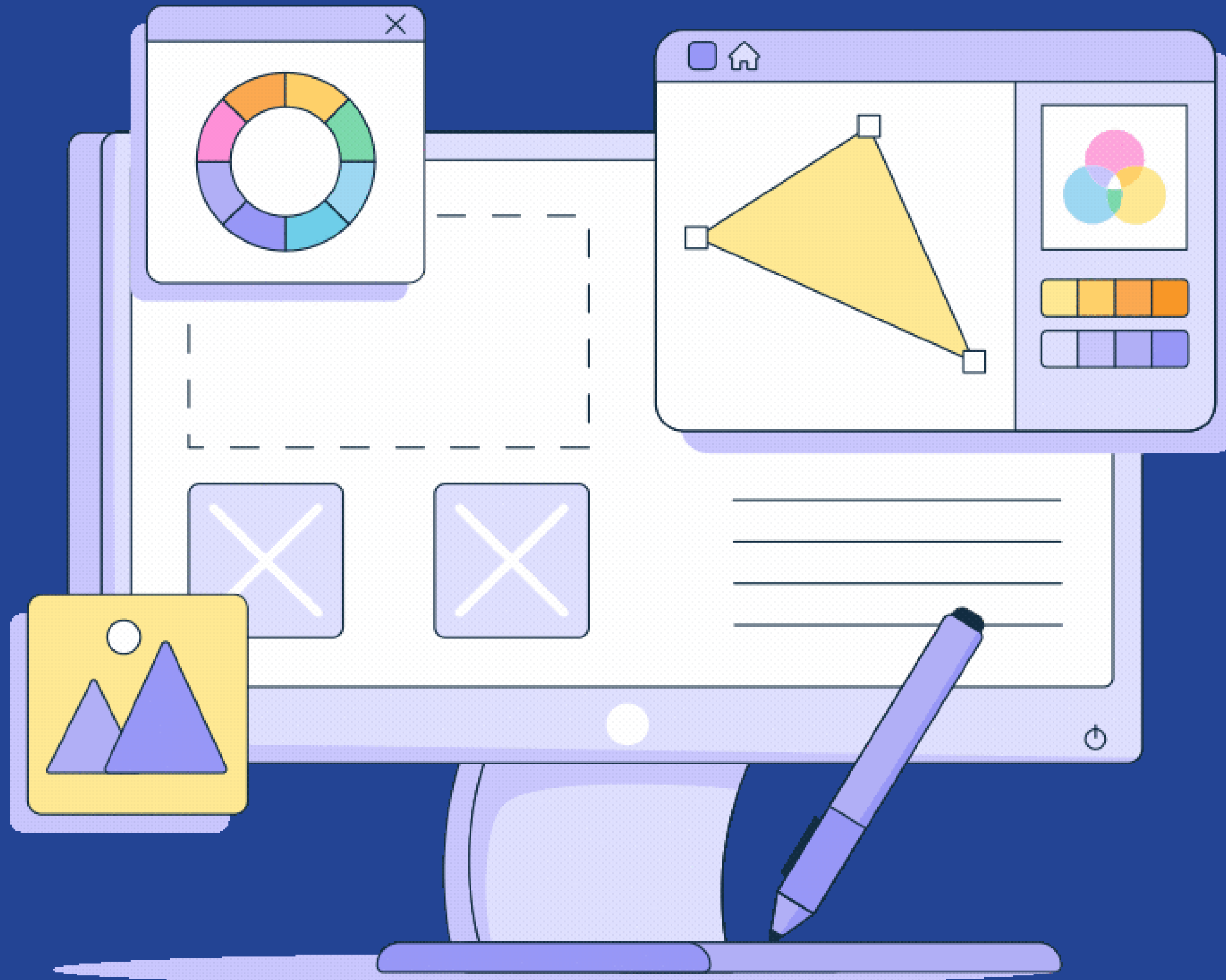
The screenshot shows the Power Query Editor interface. The main area displays a table with 7 columns: Start Time, End Time, Duration, Products.Min batch time, and % Efficiency. The table contains 21 rows of data. The right-hand pane shows the 'Query Settings' for 'Line productivity', with the 'APPLIED STEPS' list including 'Changed Type3'.

Start Time	End Time	Duration	Products.Min batch time	% Efficiency
11:50:00	02:05:00	135	60	44.44%
02:05:00	03:45:00	100	60	60.00%
03:45:00	05:35:00	110	60	54.55%
05:35:00	07:15:00	100	60	60.00%
07:15:00	08:39:00	84	60	71.43%
08:39:00	09:39:00	60	60	100.00%
09:39:00	10:54:00	75	60	80.00%
04:05:00	06:05:00	120	60	50.00%
06:05:00	07:30:00	85	60	70.59%
07:30:00	09:22:00	112	60	53.57%
09:22:00	10:37:00	75	60	80.00%
10:37:00	12:02:00	85	60	70.59%
12:02:00	02:15:00	133	60	45.11%
02:15:00	03:55:00	100	60	60.00%
03:55:00	05:15:00	80	60	75.00%
05:15:00	06:59:00	104	60	57.69%
06:59:00	08:22:00	83	60	72.29%
08:22:00	10:14:00	112	60	53.57%
10:14:00	11:29:00	75	60	80.00%
07:45:00	09:05:00	80	60	75.00%
09:05:00	10:35:00	90	60	66.67%

Modeling



DAX



All Measures

mat painter
ard

Get data Excel OneLake SQL Enter Dataverse Recent sources Transform Refresh data New visual Text box More visuals New visual calculation New measure Quick measure Sensitivity Publish Prep data for Copilot AI

Build visuals with your data
Select or drag fields from the **Data** pane onto the report canvas.

Visualizations
Build visual
Filters
Values
Add data fields here
Drill through
Cross-report
Keep all filters
Add drill-through fields here

Data
Search
All Measures
Column1
Human (Error)
Machine (Error)
Total Bahch Change
Total Batch
Total Batch Coding Error
Total Calibration Error
Total Conveyor Beltjam
Total Emergenyency Stop
Total Factor
Total Inventory Shortage
Total Label Switch
Total Labeling Error
Total Machine Adjustment
Total Machine Failure
Total Operator
Total Others
Total Product Spill
Total Prouct
Downtime_factor
Description
Error
Factor
Operator Error
Line_downtime3
Batch
Downtime_factor.Description
Factor
Value

Before

Sample DAX

FileHomeHelpTable toolsColumn tools

NameShift Type

FormatText

SummarizationDon't summarize

Sort by column

Data typeText

FormatText

Data categoryUncategorized

Data groups

Manage relationships

New column

StructureFormattingPropertiesSortGroupsRelationshipsCalculations

1 Shift Type =

2 VAR StartHour = HOUR('Line productivity'[Start Time])

3 VAR MorningStart = 6

4 VAR MorningEnd = 18

5 RETURN

6 SWITCH(

7 TRUE(),

8 StartHour >= MorningStart && StartHour < MorningEnd, "Morning",

9 "Evening"

10)

Date	Product	Batch	Operator	Start Time	End Time	Duration	Products.Min batch time	% Efficiency	Shift Type
29 2024, أغسطس	OR-600	422111	Mac	11:50:00 ص	02:05:00 م	135	60	0.444444444444444	Morning
29 2024, أغسطس	LE-600	422112	Mac	02:05:00 م	03:45:00 م	100	60	0.6	Morning
29 2024, أغسطس	LE-600	422113	Mac	03:45:00 م	05:35:00 م	110	60	0.545454545454545	Morning
29 2024, أغسطس	LE-600	422114	Mac	05:35:00 م	07:15:00 م	100	60	0.6	Morning
29 2024, أغسطس	LE-600	422115	Charlie	07:15:00 م	08:39:00 م	84	60	0.714285714285714	Evening
29 2024, أغسطس	LE-600	422116	Charlie	08:39:00 م	09:39:00 م	60	60	1	Evening
29 2024, أغسطس	LE-600	422117	Charlie	09:39:00 م	10:54:00 م	75	60	0.8	Evening
30 2024, أغسطس	CO-600	422118	Dee	04:05:00 ص	06:05:00 ص	120	60	0.5	Evening
30 2024, أغسطس	CO-600	422119	Dee	06:05:00 ص	07:30:00 ص	85	60	0.705882352941176	Morning
30 2024, أغسطس	CO-600	422120	Dee	07:30:00 ص	09:22:00 ص	112	60	0.535714285714286	Morning
30 2024, أغسطس	CO-600	422121	Dennis	09:22:00 ص	10:37:00 ص	75	60	0.8	Morning
30 2024, أغسطس	CO-600	422122	Dennis	10:37:00 ص	12:02:00 م	85	60	0.705882352941176	Morning
30 2024, أغسطس	CO-600	422123	Dennis	12:02:00 م	02:15:00 م	133	60	0.451127819548872	Morning
30 2024, أغسطس	CO-600	422124	Dennis	02:15:00 م	03:55:00 م	100	60	0.6	Morning
30 2024, أغسطس	CO-600	422125	Charlie	03:55:00 م	05:15:00 م	80	60	0.75	Morning

Data

Search

> Downtime factors

> Line downtime

> Line productivity

- % Efficiency
- Batch

> Date

- Duration
- End Time
- Operator
- Product
- Products.Min batch time

Shift Type

> Products

- Flavor
- Min batch time
- Product
- Size

Table: Line productivity (38 rows) Column: Shift Type (2 distinct values)



Sample DAX

```
Batch Change Count = CALCULATE(COUNTROWS('Line downtime'), 'Line downtime'[Downtime factors.Description] = "Batch change")
```

```
Shift Type = VAR StartHour = HOUR('Line productivity'[Start Time])
```

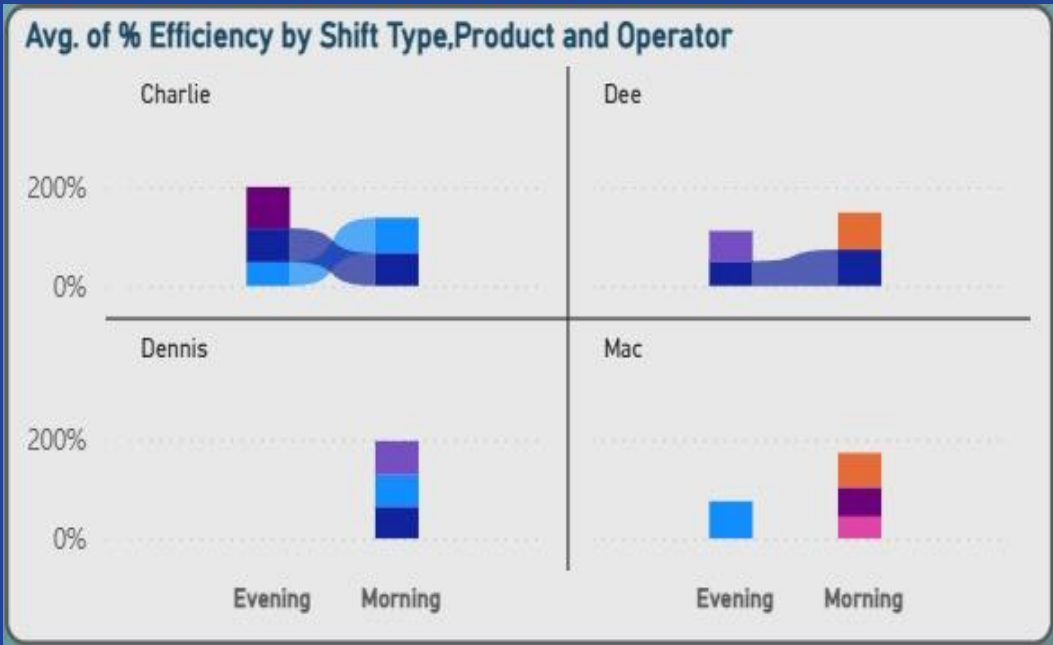
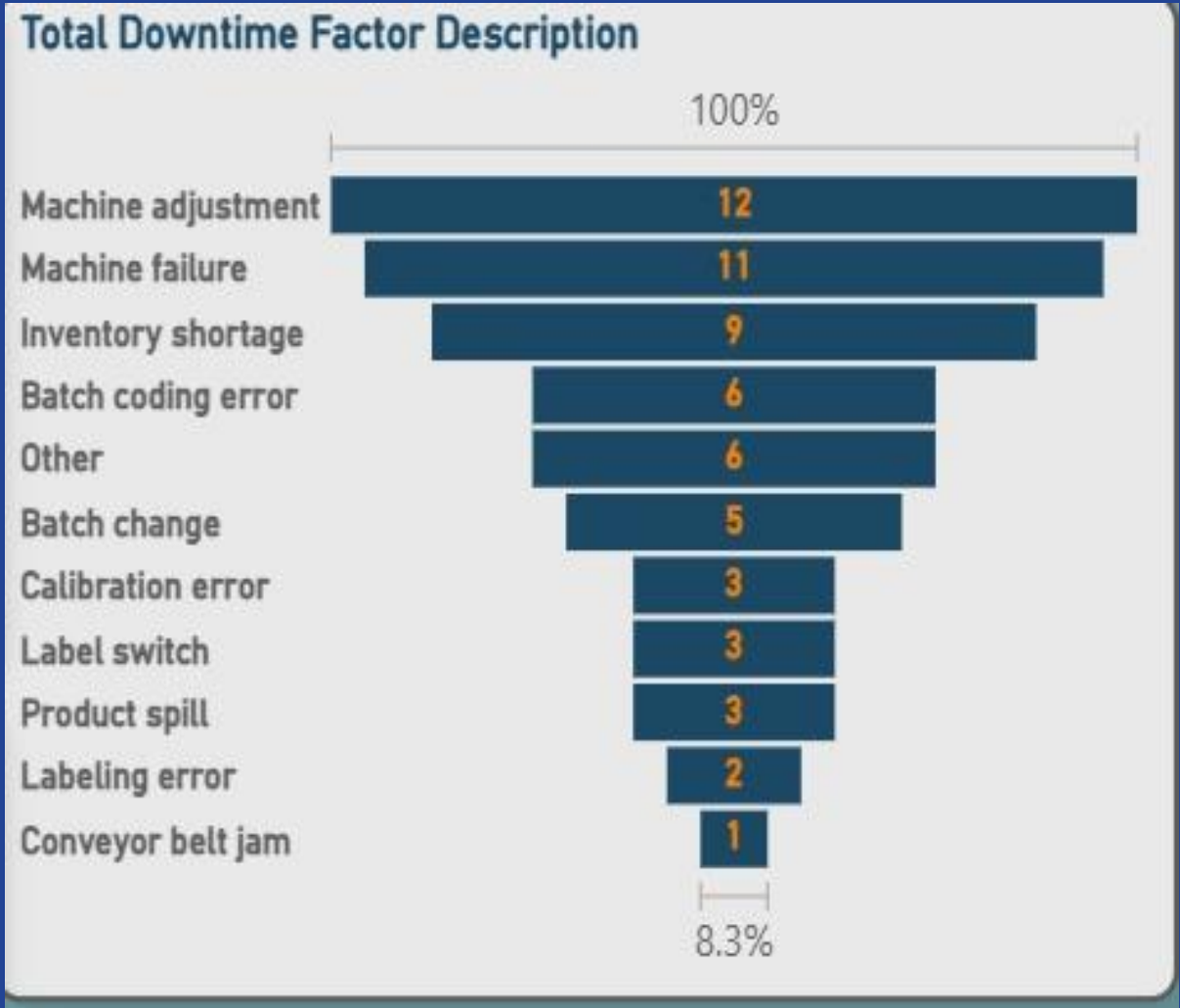
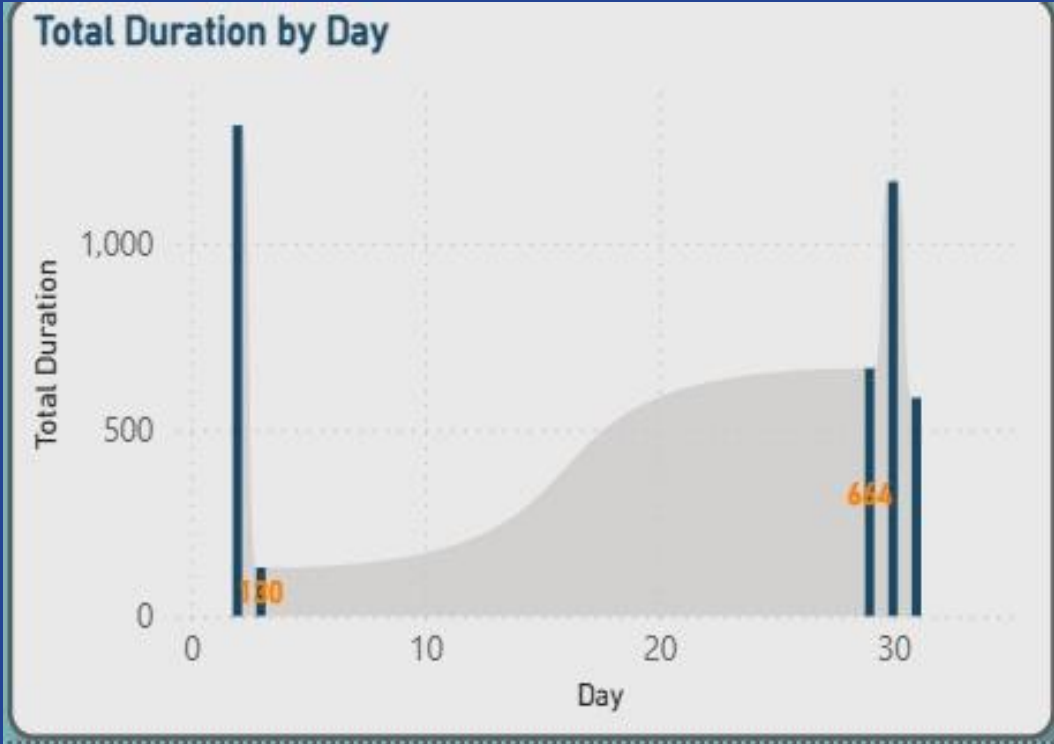
```
VAR MorningStart = 6
```

```
VAR MorningEnd = 18
```

```
RETURN
```

```
SWITCH( TRUE(), StartHour >= MorningStart && StartHour < MorningEnd, "Morning", "Evening"
```


Visual Samples





DASHBOARD MANUFACTURING DOWNTIME ANALYSIS

Product

All

Operator

All

Total Batch



38

Avg. Batch (MIN) : 101.53

% Achieved Goals : 8%

% Unachieved Goals : 92%

Total Product



6

Total Size 2L : 1

Total Size 200 M : 5

Total Operator



4

Lowest Efficiency : 44%

No of Low-efficiency : 4

Total Factor



12

Human (Error) : 6

Machine (Error) : 6

Total Shift

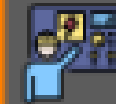


38

Morning Shifts : 25

Evening Shifts : 13

Total Downtime



1388

Total Duration : 3858

Total Min Batch : 2470

% Downtime : 56%

DASHBOARD

BATCHES



PRODUCTS



OPERATOR



DOWNTIME FACTOR



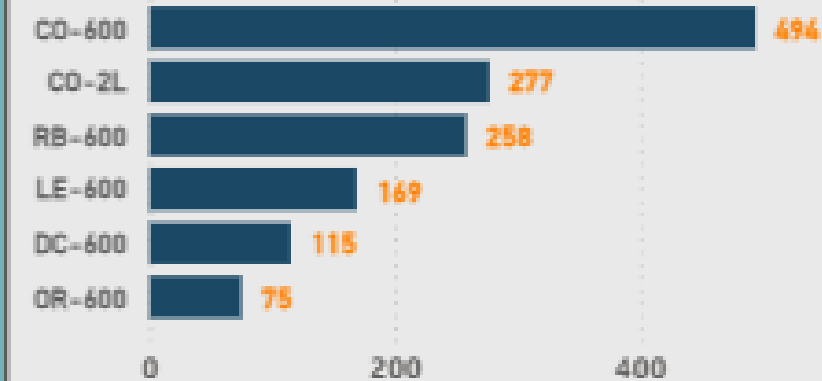
DURATION



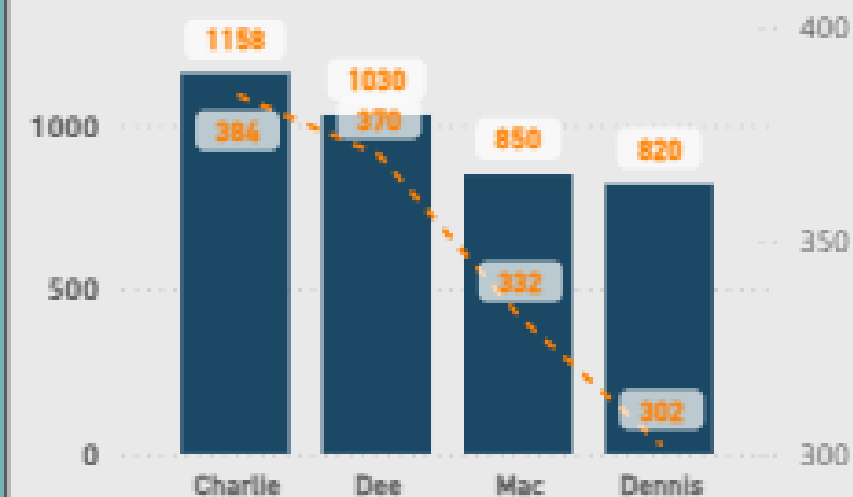
SHIFT TYPE



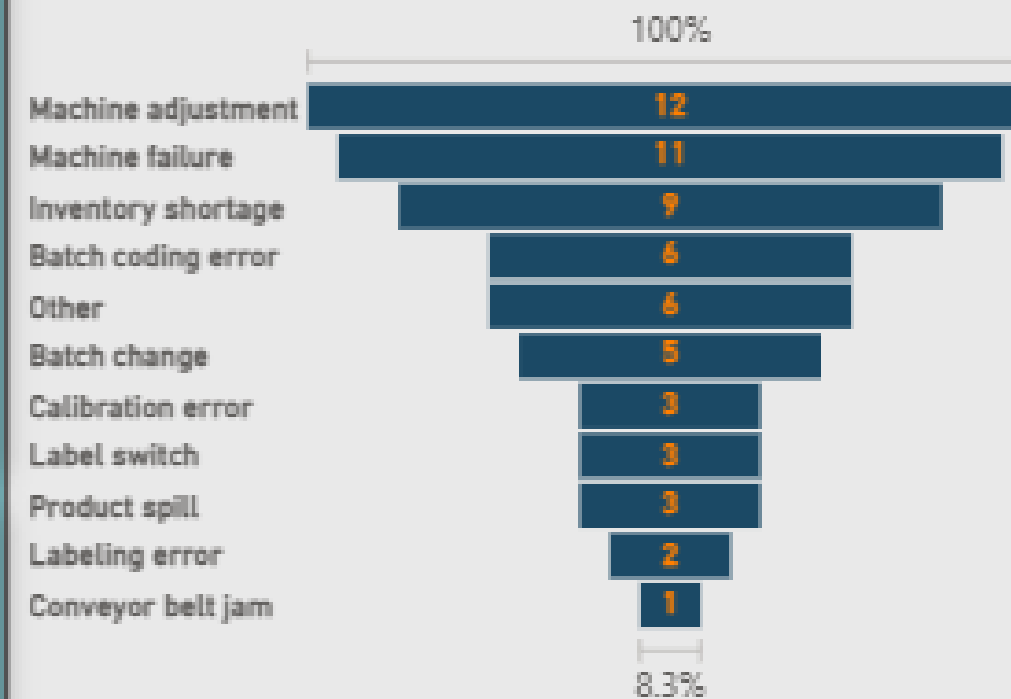
Products Downtime



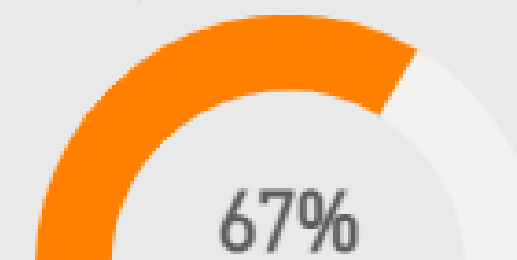
Operator by Downtime



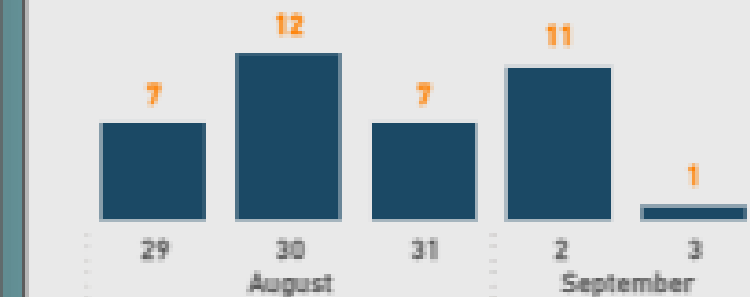
Total Downtime Factor Description



Average of % Efficiency



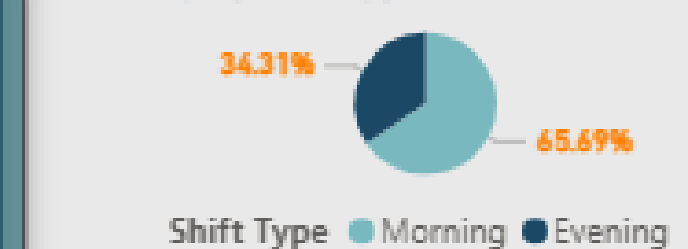
Batch By Working Day



% Achieved Goals Vs Unachieved Goals



Efficiency By Shift Type



Thank

