

وزارة الاتصالات  
وتقنيات جياب المعلومات



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# MANUFACTURING DOWNTIME

A close-up, low-angle shot of a conveyor belt in a soda manufacturing facility. Several aluminum cans are lined up on the belt, which is supported by a metal frame. The cans are slightly condensated, suggesting they are cold. The background is dark and out of focus, emphasizing the cans and the machinery.

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

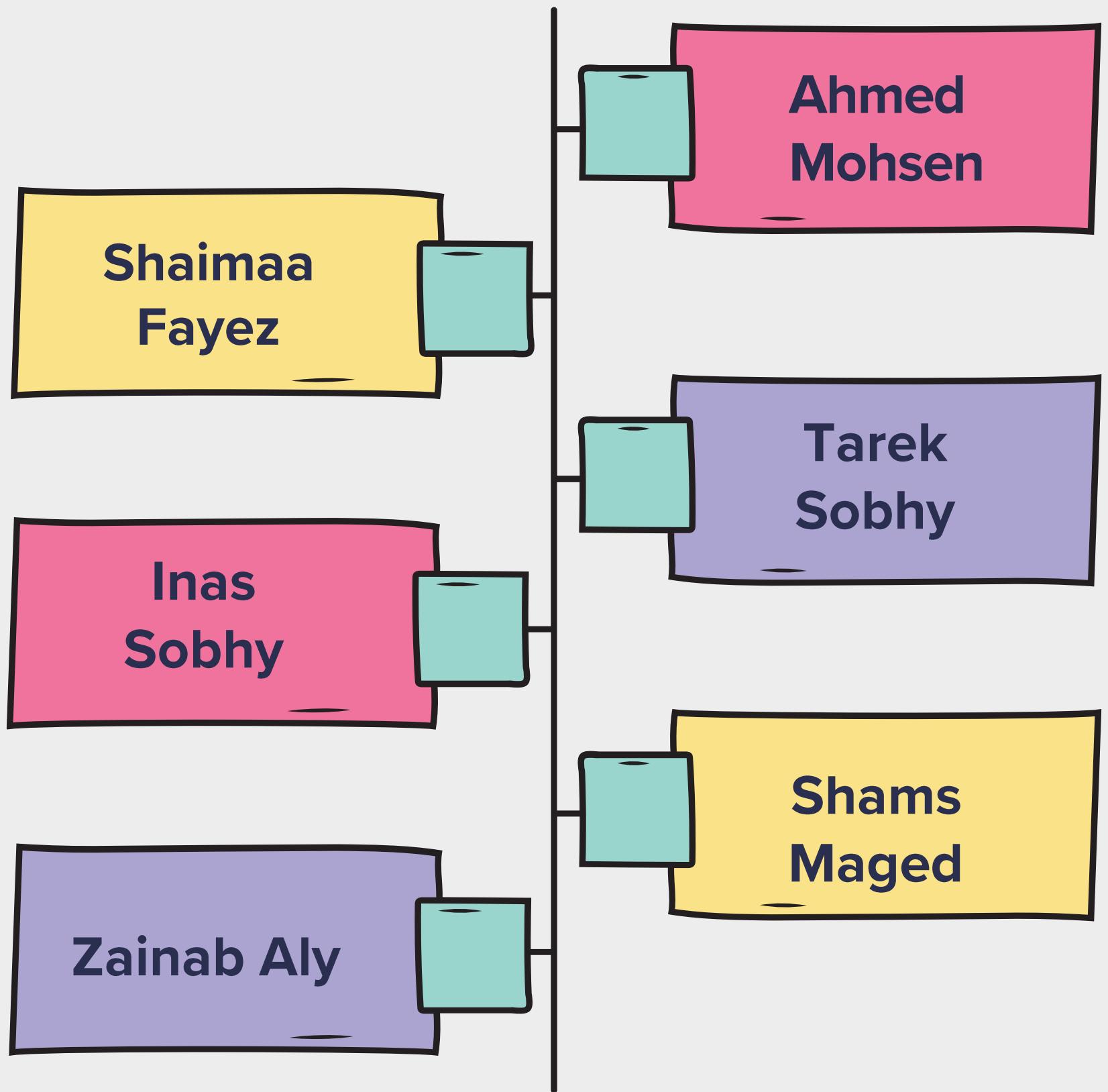
# Project Idea

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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



# DATA Source

## Data Type:

Microsoft EXCEL

The data was acquired through  
the Digital Egypt Pioneers  
Initiative (DEPI)

	A	B	C	D
1	Product	Flavor	Size	Min batch time
2	OR-600	Orange	600 ml	60
3	LE-600	Lemon lime	600 ml	60
4	CO-600	Cola	600 ml	60
5	DC-600	Diet Cola	600 ml	60
6	RB-600	Root Berry	600 ml	60
7	CO-2L	Cola	2 L	98
8				

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														Downtime factor
2	Batch													
3	422111		60											15
4	422112		20											20
5	422113		50											
6	422114			25										15
7	422115				25									24
8	422116					15								
9	422117		10			5								
10	422118				14	16								10 20
11	422119				25									
12	422120				20	15								17
13	422121						15							
14	422122						25							
15	422123					43		30						
16	422124					20	20							
17	422125								10	10				
18	422126							44						
19	422127							23						
20	422128						22	30						
21	422129									15				
22	422130					20								
23	422131						20							10
24	422132													
25	422133							20						
26	422134							30	20					
27	422135										15			
28	422136													
29	422137													

	A	B	C	D
1	Factor	Description	Operator Error	0:00
2	1 Emergency stop	No	0:00	
3	2 Batch change	Yes	5:00	
4	3 Labeling error	No	5:00	e downtime
5	4 Inventory shortage	No		
6	5 Product spill	Yes		
7	6 Machine adjustment	Yes		
8	7 Machine failure	No		
9	8 Batch coding error	Yes		
10	9 Conveyor belt jam	No		
11	10 Calibration error	Yes		
12	11 Label switch	Yes		
13	12 Other	No		
14				
15				





# Project Process

Modeling



Clean

Sample Visual



Report

Dashboard



DAX



# 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)

The screenshot shows the Microsoft Power BI Data Editor interface. The 'Queries [4]' pane on the left lists four queries: 'Downtime factors', 'Line downtime', 'Line productivity', and 'Products'. The 'Line downtime' query is currently selected. The preview pane displays a table with three columns: 'Batch' (containing values like 422111, 422112, etc.), 'Factor' (containing values like 2, 7, 20, etc.), and 'Downtime' (containing values like 60, 15, 20, etc.). The 'Transform' ribbon tab is selected, and the 'Advanced Editor' button is visible. The 'Properties' pane on the right shows the 'Name' as 'Line downtime' and the 'Applied Steps' list includes 'Renamed Columns' (highlighted in green). The 'Applied Steps' list also includes 'Promoted Headers', 'Changed Type', 'Promoted Headers1', 'Changed Type1', 'Unpivoted Other Columns', 'Merged Queries', and 'Expanded Downtime factors'.

After

The screenshot shows the Microsoft Power BI Data Editor interface with the 'Line downtime' query selected. The preview pane displays a table with columns: 'Batch' (containing values like 422111, 422112, etc.), 'Attribute' (containing values like 2, 7, 20, etc.), and 'Value' (containing values like 60, 15, 20, etc.). The 'Properties' pane on the right shows the 'Name' as 'Line downtime' and the 'Applied Steps' list includes 'Renamed Columns' (highlighted in green), 'Merged Queries', and 'Expanded Downtime factors'. A large blue arrow points from the 'Before' state to the 'After' state, indicating the transformation process.

	Batch	Attribute	Downtime
1	422111	2	60
2	422111	7	15
3	422112	2	20
4	422112	8	20
5	422113	2	50
6	422114	4	25
7	422114	6	15
8	422115	10	24
9	422117	2	10
10	422117	6	5
11	422118	6	14
12	422118	7	16
13	422118	11	10
14	422118	12	20
15	422119	4	25
16	422119	4	20
17	422119	5	15
18	422120	9	17
19	422121	7	15
20	422122	7	25
21	422123	4	43
22	422123	7	30
23	422124	5	20
24	422124	6	20
25	422125	11	10
26	422125	12	10
27	422126	8	44
28	422127	6	23

Before

# LINE PRODUCTIVITY TABLE

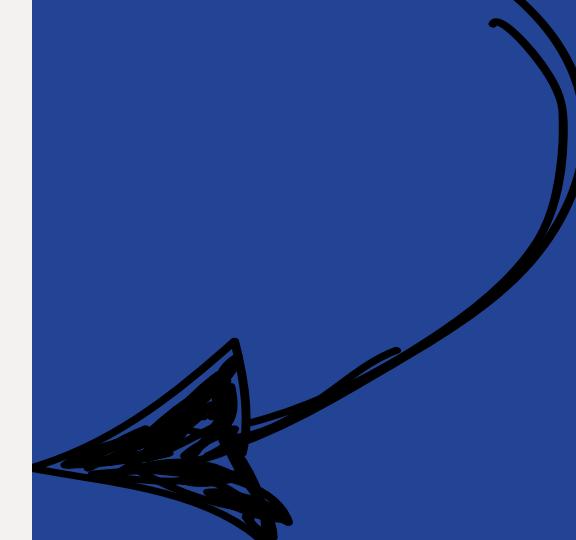
- Check the datatype for header Batch: Text format
- Calculate (Batch duration) Add column, custom column, end time\_start time.
- Clean and trim for operator column

fx Table.TransformColumns("Added Custom",{{"Duration", Duration.TotalMinutes, type number}})

	Product	Batch	Operator	Start Time	End Time	Duration
8/29/2024	OR-600		422111 Mac	12/31/1899 11:50:00 AM	12/31/1899 2:05:00 PM	135
8/29/2024	LE-600		422112 Mac	12/31/1899 2:05:00 PM	12/31/1899 3:45:00 PM	100
8/29/2024	LE-600		422113 Mac	12/31/1899 3:45:00 PM	12/31/1899 5:35:00 PM	110
8/29/2024	LE-600		422114 Mac	12/31/1899 5:35:00 PM	12/31/1899 7:15:00 PM	100
8/29/2024	LE-600		422115 Charlie	12/31/1899 7:15:00 PM	12/31/1899 8:39:00 PM	84
8/29/2024	LE-600		422116 Charlie	12/31/1899 8:39:00 PM	12/31/1899 9:39:00 PM	60
8/29/2024	LE-600		422117 Charlie	12/31/1899 9:39:00 PM	12/31/1899 10:54:00 PM	75
8/30/2024	CO-600		422118 Dee	12/31/1899 4:05:00 AM	12/31/1899 6:05:00 AM	120
8/30/2024	CO-600		422119 Dee	12/31/1899 5:05:00 AM	12/31/1899 7:30:00 AM	85
8/30/2024	CO-600		422120 Dee	12/31/1899 7:30:00 AM	12/31/1899 9:22:00 AM	112
8/30/2024	CO-600		422121 Dennis	12/31/1899 9:22:00 AM	12/31/1899 10:37:00 AM	75
8/30/2024	CO-600		422122 Dennis	12/31/1899 10:37:00 AM	12/31/1899 12:02:00 PM	85
8/30/2024	CO-600		422123 Dennis	12/31/1899 12:02:00 PM	12/31/1899 2:15:00 PM	133
8/30/2024	CO-600		422124 Dennis	12/31/1899 2:15:00 PM	12/31/1899 3:55:00 PM	100
8/30/2024	CO-600		422125 Charlie	12/31/1899 3:55:00 PM	12/31/1899 5:15:00 PM	80
8/30/2024	CO-600		422126 Charlie	12/31/1899 5:15:00 PM	12/31/1899 6:59:00 PM	104
8/30/2024	CO-600		422127 Charlie	12/31/1899 6:59:00 PM	12/31/1899 8:22:00 PM	83
8/30/2024	CO-600		422128 Charlie	12/31/1899 8:22:00 PM	12/31/1899 10:14:00 PM	112
8/30/2024	CO-600		422129 Charlie	12/31/1899 10:14:00 PM	12/31/1899 11:29:00 PM	75
8/31/2024	CO-600		422130 Dee	12/31/1899 7:45:00 AM	12/31/1899 9:05:00 AM	80
8/31/2024	CO-600		422131 Dee	12/31/1899 9:05:00 AM	12/31/1899 10:35:00 AM	90
8/31/2024	CO-600		422132 Dee	12/31/1899 10:35:00 AM	12/31/1899 11:35:00 AM	60
8/31/2024	DC-600		422133 Dee	12/31/1899 11:35:00 AM	12/31/1899 12:55:00 PM	80
8/31/2024	DC-600		422134 Mac	12/31/1899 12:55:00 PM	12/31/1899 2:45:00 PM	110
8/31/2024	DC-600		422135 Mac	12/31/1899 2:45:00 PM	12/31/1899 4:30:00 PM	105
8/31/2024	DC-600		422136 Mac	12/31/1899 4:30:00 PM	12/31/1899 5:30:00 PM	60
9/2/2024	RB-600		422137 Dee	12/31/1899 1:00:00 AM	12/31/1899 2:45:00 AM	105
9/2/2024	RB-600		422138 Dee	12/31/1899 2:45:00 AM	12/31/1899 4:05:00 AM	80
9/2/2024	RB-600		422139 Dee	12/31/1899 4:05:00 AM	12/31/1899 5:40:00 AM	95
9/2/2024	RB-600		422140 Dee	12/31/1899 5:40:00 AM	12/31/1899 7:43:00 AM	123
9/2/2024	RB-600		422141 Dee	12/31/1899 7:43:00 AM	12/31/1899 8:50:00 AM	67
9/2/2024	RB-600		422142 Dee	12/31/1899 8:50:00 AM	12/31/1899 10:20:00 AM	90
9/2/2024	RB-600		422143 Dennis	12/31/1899 10:20:00 AM	12/31/1899 12:18:00 PM	118
9/2/2024	CO-2L		422144 Dennis	12/31/1899 12:18:00 PM	12/31/1899 2:50:00 PM	152
9/2/2024	CO-2L		422145 Charlie	12/31/1899 2:50:00 PM	12/31/1899 4:50:00 PM	120
9/2/2024	CO-2L		422146 Charlie	12/31/1899 4:50:00 PM	12/31/1899 7:30:00 PM	160
9/2/2024	CO-2L		422147 Charlie	12/31/1899 7:30:00 PM	12/31/1899 10:55:00 PM	205
9/3/2024	CO-2L		422148 Mac	12/31/1899 10:55:00 PM	1/1/1900 1:05:00 AM	130

After

Before



fx Table.TransformColumns("Added Custom",{{"Duration", Duration.TotalMinutes, type number}})

	Product	Batch	Operator	Start Time	End Time	Duration
1	OR-600	422111 Mac		12/31/1899 11:50:00 AM	12/31/1899 2:05:00 PM	135
2	LE-600	422112 Mac		12/31/1899 2:05:00 PM	12/31/1899 3:45:00 PM	100
3	LE-600	422113 Mac		12/31/1899 3:45:00 PM	12/31/1899 5:35:00 PM	110
4	LE-600	422114 Mac		12/31/1899 5:35:00 PM	12/31/1899 7:15:00 PM	100
5	LE-600	422115 Charlie		12/31/1899 7:15:00 PM	12/31/1899 8:39:00 PM	84
6	LE-600	422116 Charlie		12/31/1899 8:39:00 PM	12/31/1899 9:39:00 PM	60
7	LE-600	422117 Charlie		12/31/1899 9:39:00 PM	12/31/1899 10:54:00 PM	75
8	CO-600	422118 Dee		12/31/1899 4:05:00 AM	12/31/1899 6:05:00 AM	120
9	CO-600	422119 Dee		12/31/1899 5:05:00 AM	12/31/1899 7:30:00 AM	85
10	CO-600	422120 Dee		12/31/1899 7:30:00 AM	12/31/1899 9:22:00 AM	112
11	CO-600	422121 Dennis		12/31/1899 9:22:00 AM	12/31/1899 10:37:00 AM	75
12	CO-600	422122 Dennis		12/31/1899 10:37:00 AM	12/31/1899 12:02:00 PM	85
13	CO-600	422123 Dennis		12/31/1899 12:02:00 PM	12/31/1899 2:15:00 PM	133
14	CO-600	422124 Dennis		12/31/1899 2:15:00 PM	12/31/1899 3:55:00 PM	100
15	CO-600	422125 Charlie		12/31/1899 3:55:00 PM	12/31/1899 5:15:00 PM	80
16	CO-600	422126 Charlie		12/31/1899 5:15:00 PM	12/31/1899 6:59:00 PM	104
17	CO-600	422127 Charlie		12/31/1899 6:59:00 PM	12/31/1899 8:22:00 PM	83
18	CO-600	422128 Charlie		12/31/1899 8:22:00 PM	12/31/1899 10:14:00 PM	112
19	CO-600	422129 Charlie		12/31/1899 10:14:00 PM	12/31/1899 11:29:00 PM	75
20	CO-600	422130 Dee		12/31/1899 7:45:00 AM	12/31/1899 9:05:00 AM	80
21	CO-600	422131 Dee		12/31/1899 9:05:00 AM	12/31/1899 10:35:00 AM	90
22	CO-600	422132 Dee		12/31/1899 10:35:00 AM	12/31/1899 11:35:00 AM	60
23	DC-600	422133 Dee		12/31/1899 11:35:00 AM	12/31/1899 12:55:00 PM	80
24	DC-600	422134 Mac		12/31/1899 12:55:00 PM	12/31/1899 2:45:00 PM	110
25	DC-600	422135 Mac		12/31/1899 2:45:00 PM	12/31/1899 4:30:00 PM	105
26	DC-600	422136 Mac		12/31/1899 4:30:00 PM	12/31/1899 5:30:00 PM	60
27	RB-600	422137 Dee		12/31/1899 1:00:00 AM	12/31/1899 2:45:00 AM	105
28	RB-600	422138 Dee		12/31/1899 2:45:00 AM	12/31/1899 4:05:00 AM	80
29	RB-600	422139 Dee		12/31/1899 4:05:00 AM	12/31/1899 5:40:00 AM	95
30	RB-600	422140 Dee		12/31/1899 5:40:00 AM	12/31/1899 7:43:00 AM	123
31	RB-600	422141 Dee		12/31/1899 7:43:00 AM	12/31/1899 8:50:00 AM	67
32	RB-600	422142 Dee		12/31/1899 8:50:00 AM	12/31/1899 10:20:00 AM	90
33	CO-2L	422143 Dennis		12/31/1899 10:20:00 AM	12/31/1899 12:18:00 PM	118
34	CO-2L	422144 Dennis				

# 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



Queries [6] X ✓ 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

All Properties

Applied Steps

Source, Navigation, Promoted Headers, Changed Type, Added Conditional Column, **Changed Type1**

After

# Before Merge Row Data

1.line downtime table, Merge queries, choose downtime factors table.

2.Expand the new column, choose only description and error.

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	06:05:00
2024-08-30	CO-600	422119	Dee	06:05:00	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

Flavor	Size	Min batch
Orange	600 ml	
Lemon lime	600 ml	
Cola	600 ml	
Coca Cola	600 ml	
Pepsi Beer	600 ml	
Sprite	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

Power BI Query Editor showing the result of merging two queries:

```
= Table.ExpandTableColumn(#"Merged Queries", "Downtime factors", {"Description"}, {"Downtime factors.Description"})
```

The resulting table has 4 columns and 61 rows, with the top row showing the schema:

	Batch	Factor	1.2 Value	Downtime factors.Description
1	422111	2		60 Batch change
2	422112	2		20 Batch change
3	422113	2		50 Batch change
4	422117	2		10 Batch change
5	422111	7		15 Machine failure
6	422118	7		16 Machine failure
7	422112	8		20 Batch coding error
8	422114	4		25 Inventory shortage
9	422114	6		15 Machine adjustment
10	422117	6		5 Machine adjustment
11	422118	6		14 Machine adjustment
12	422115	10		24 Calibration error
13	422118	11		10 Label switch
14	422118	12		20 Other
15	422119	4		25 Inventory shortage
16	422120	4		20 Inventory shortage
17	422120	5		15 Product spill
18	422120	9		17 Conveyor belt jam
19	422121	7		15 Machine failure
20	422122	7		25 Machine failure
21	422123	4		43 Inventory shortage
22	422123	7		30 Machine failure
23	422124	5		20 Product spill

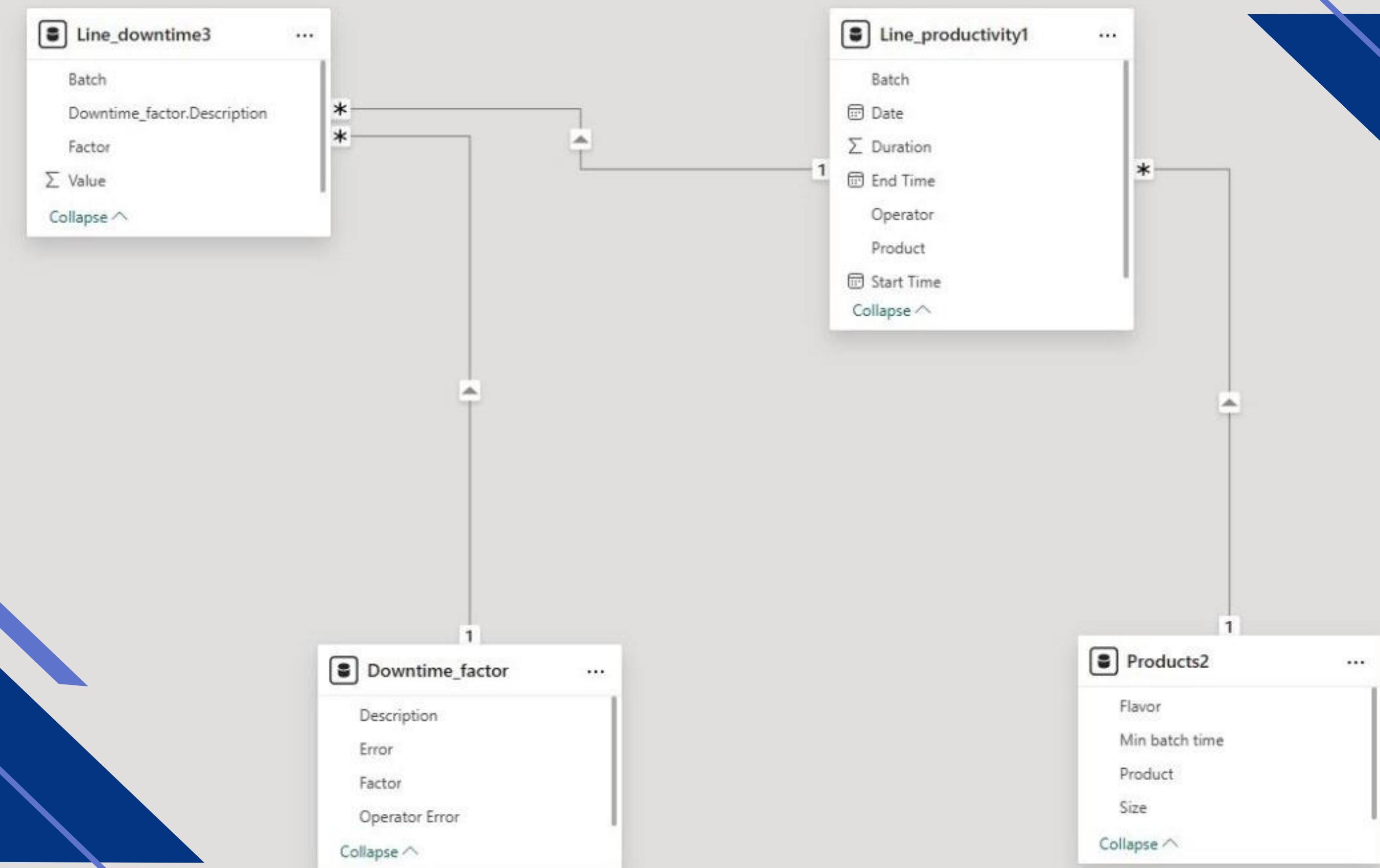
Power BI Query Editor showing the result of transforming a query:

```
= Table.TransformColumnTypes(#"Added Custom1",{{"% Efficiency ", Percentage.Type}})
```

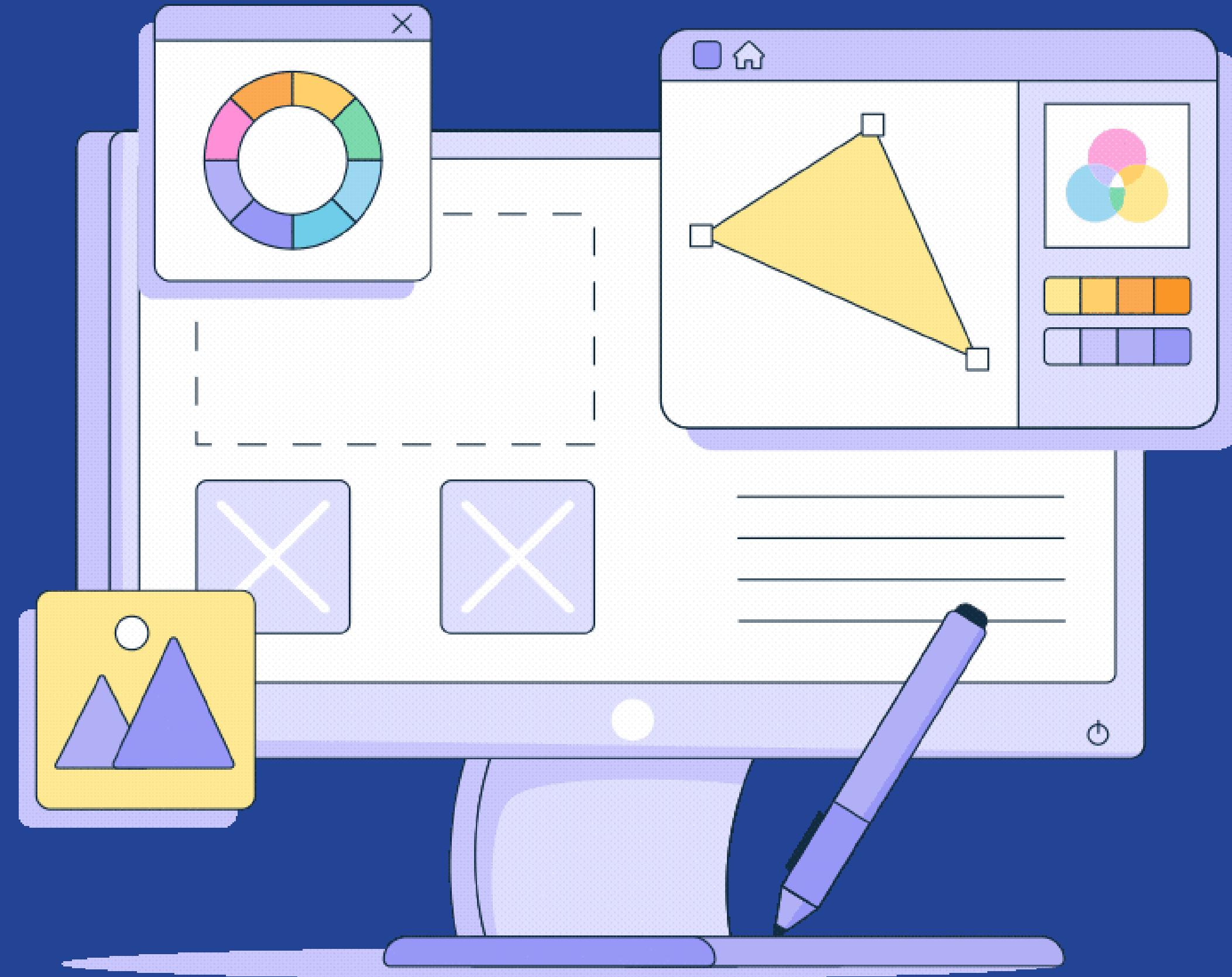
The resulting table has 21 rows and 6 columns, with the top row showing the schema:

	Start Time	End Time	1.2 Duration	# Products	% Efficiency
1	11:50:00	02:05:00	135	60	44.44%
2	02:05:00	03:45:00	100	60	60.00%
3	03:45:00	05:35:00	110	60	54.55%
4	05:35:00	07:15:00	100	60	60.00%
5	07:15:00	08:39:00	84	60	71.43%
6	08:39:00	09:39:00	60	60	100.00%
7	09:39:00	10:54:00	75	60	80.00%
8	04:05:00	06:05:00	120	60	50.00%
9	06:05:00	07:30:00	85	60	70.59%
10	07:30:00	09:22:00	112	60	53.57%
11	09:22:00	10:37:00	75	60	80.00%
12	10:37:00	12:02:00	85	60	70.59%
13	12:02:00	02:15:00	133	60	45.11%
14	02:15:00	03:55:00	100	60	60.00%
15	03:55:00	05:15:00	80	60	75.00%
16	05:15:00	06:59:00	104	60	57.69%
17	06:59:00	08:22:00	83	60	72.29%
18	08:22:00	10:14:00	112	60	53.57%
19	10:14:00	11:29:00	75	60	80.00%
20	07:45:00	09:05:00	80	60	75.00%
21	09:05:00	10:35:00	90	60	66.67%

# Modeling



# DAX



# All Measures

Build visual painter

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

Data

Queries

Insert Calculations

Sensitivity Share Copilot

Visualizations

Build visual

Filters

Search

All Measures

- Column1
- Human (Error)
- Machine (Error)
- Total Bahch Change
- Total Batch
- Total Batch Coding Error
- Total Calibration Error
- Total Conveyor Beltjam
- Total Emergency 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

Build visuals with your data

Select or drag fields from the Data pane onto the report canvas.

Before



# Sample DAX

File Home Help Table tools **Column tools**

Name Shift Type Format Text Summarization Don't summarize Data category Uncategorized Sort by column Sort Groups Data groups Manage relationships New column

Shift Type =  
VAR StartHour = HOUR('Line productivity'[Start Time])  
VAR MorningStart = 6  
VAR MorningEnd = 18  
RETURN  
SWITCH(  
TRUE(),  
StartHour >= MorningStart && StartHour < MorningEnd, "Morning",  
"Evening")

Date	Product	Batch	Operator	Start Time	End Time	Duration	Products.Min batch time	% Efficiency	Shift Type
29 2024, غسطس	OR-600	422111	Mac	11:50:00 ص	02:05:00 م	135		60	0.4444444444444444 Morning
29 2024, غسطس	LE-600	422112	Mac	02:05:00 م	03:45:00 م	100		60	0.6 Morning
29 2024, غسطس	LE-600	422113	Mac	03:45:00 م	05:35:00 م	110		60	0.545454545454545 Morning
29 2024, غسطس	LE-600	422114	Mac	05:35:00 م	07:15:00 م	100		60	0.6 Morning
29 2024, غسطس	LE-600	422115	Charlie	07:15:00 م	08:39:00 م	84		60	0.714285714285714 Evening
29 2024, غسطس	LE-600	422116	Charlie	08:39:00 م	09:39:00 م	60		60	1 Evening
29 2024, غسطس	LE-600	422117	Charlie	09:39:00 م	10:54:00 م	75		60	0.8 Evening
30 2024, غسطس	CO-600	422118	Dee	04:05:00 ص	06:05:00 ص	120		60	0.5 Evening
30 2024, غسطس	CO-600	422119	Dee	06:05:00 ص	07:30:00 ص	85		60	0.705882352941176 Morning
30 2024, غسطس	CO-600	422120	Dee	07:30:00 ص	09:22:00 ص	112		60	0.535714285714286 Morning
30 2024, غسطس	CO-600	422121	Dennis	09:22:00 ص	10:37:00 ص	75		60	0.8 Morning
30 2024, غسطس	CO-600	422122	Dennis	10:37:00 ص	12:02:00 م	85		60	0.705882352941176 Morning
30 2024, غسطس	CO-600	422123	Dennis	12:02:00 م	02:15:00 م	133		60	0.451127819548872 Morning
30 2024, غسطس	CO-600	422124	Dennis	02:15:00 م	03:55:00 م	100		60	0.6 Morning
30 2024, غسطس	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

Start Time

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])

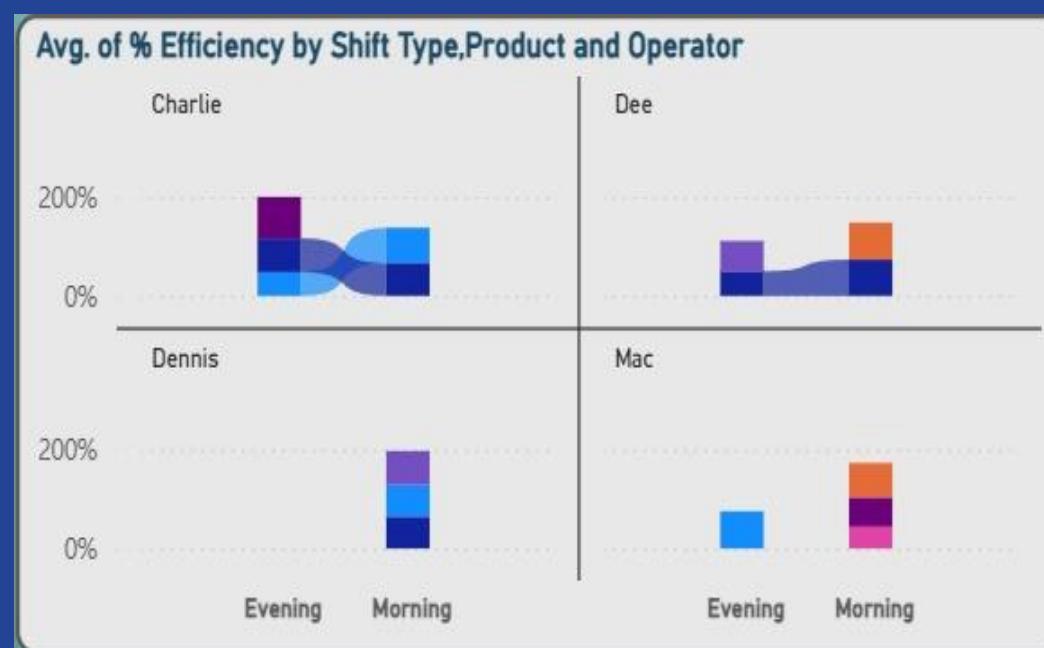
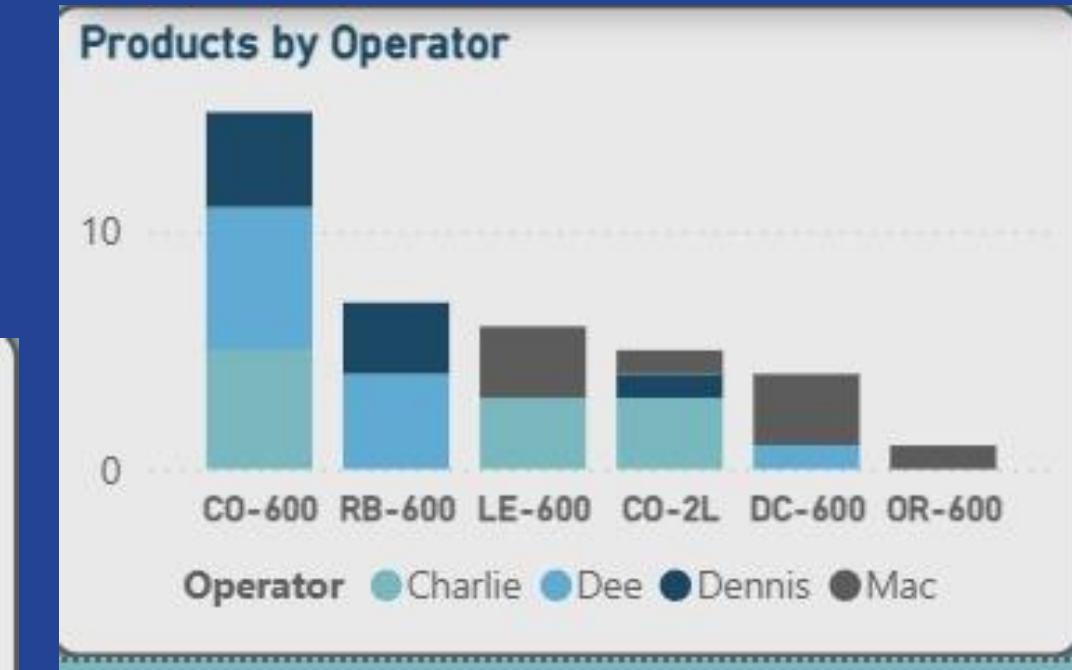
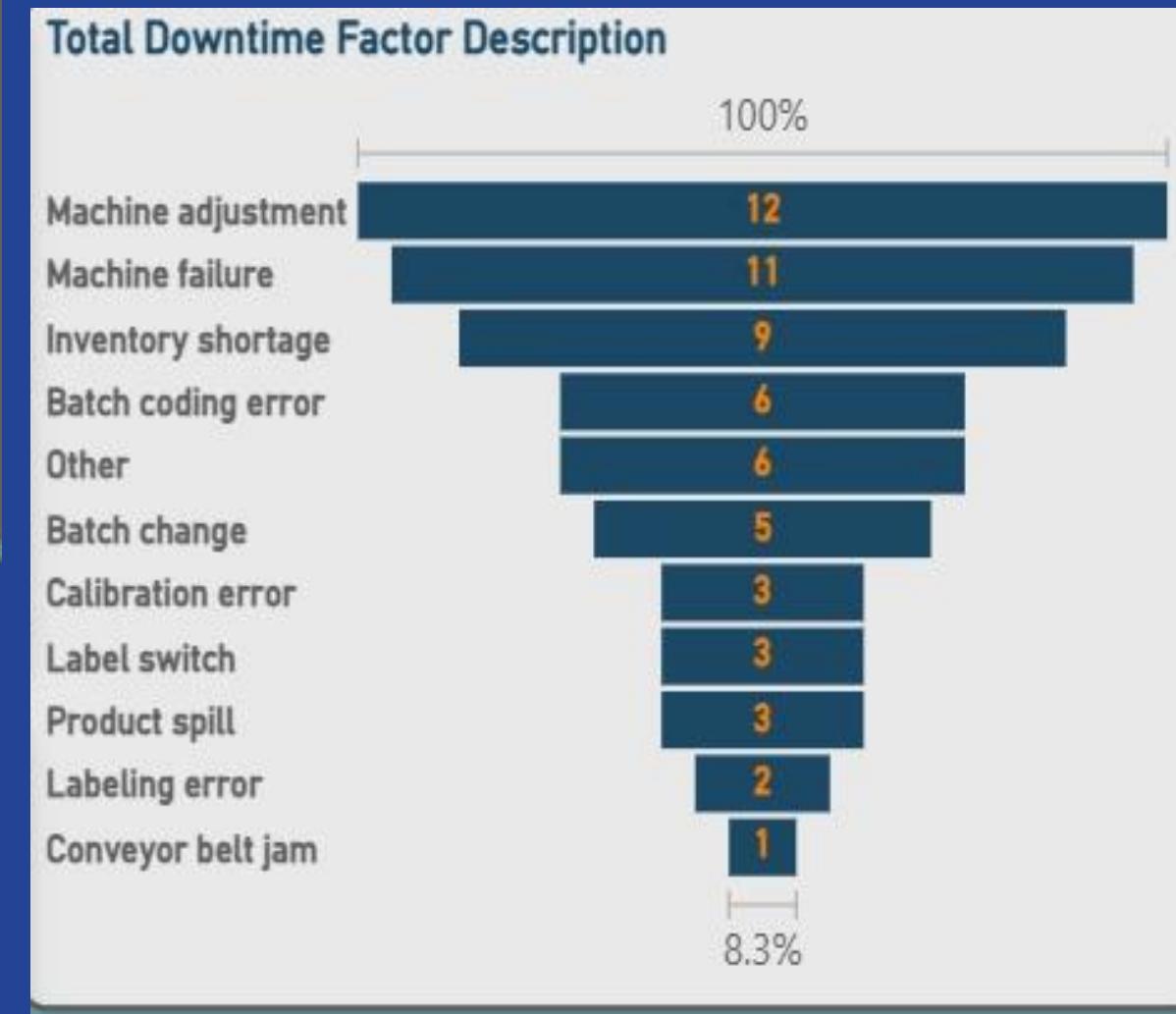
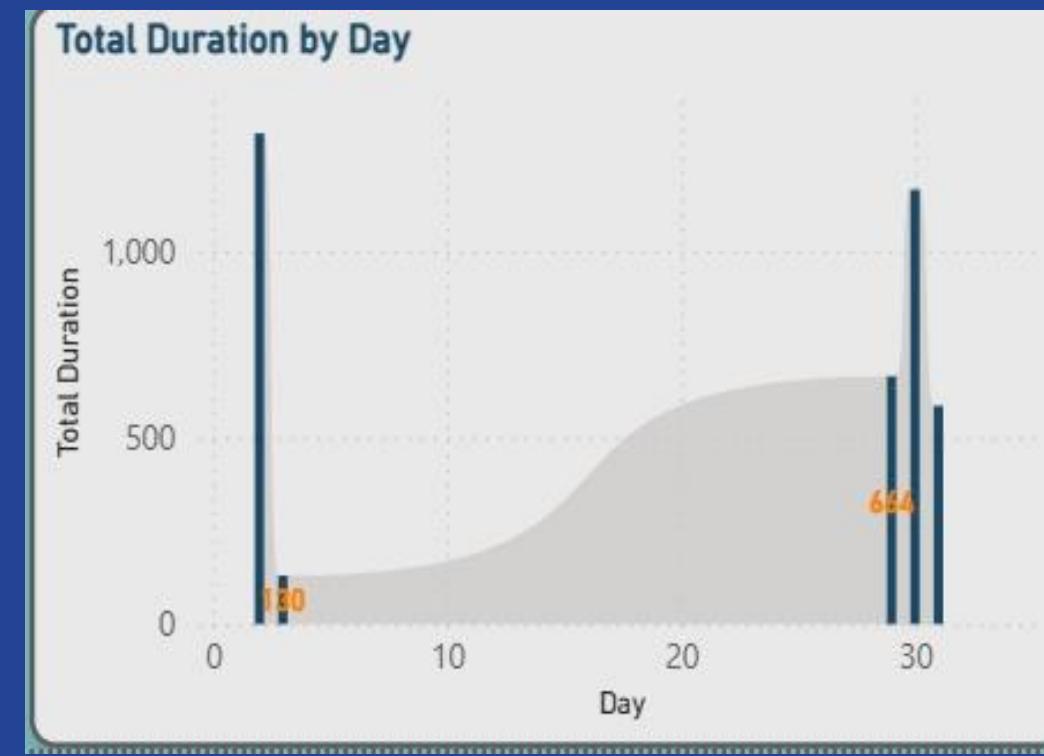
VAR MorningStart = 6

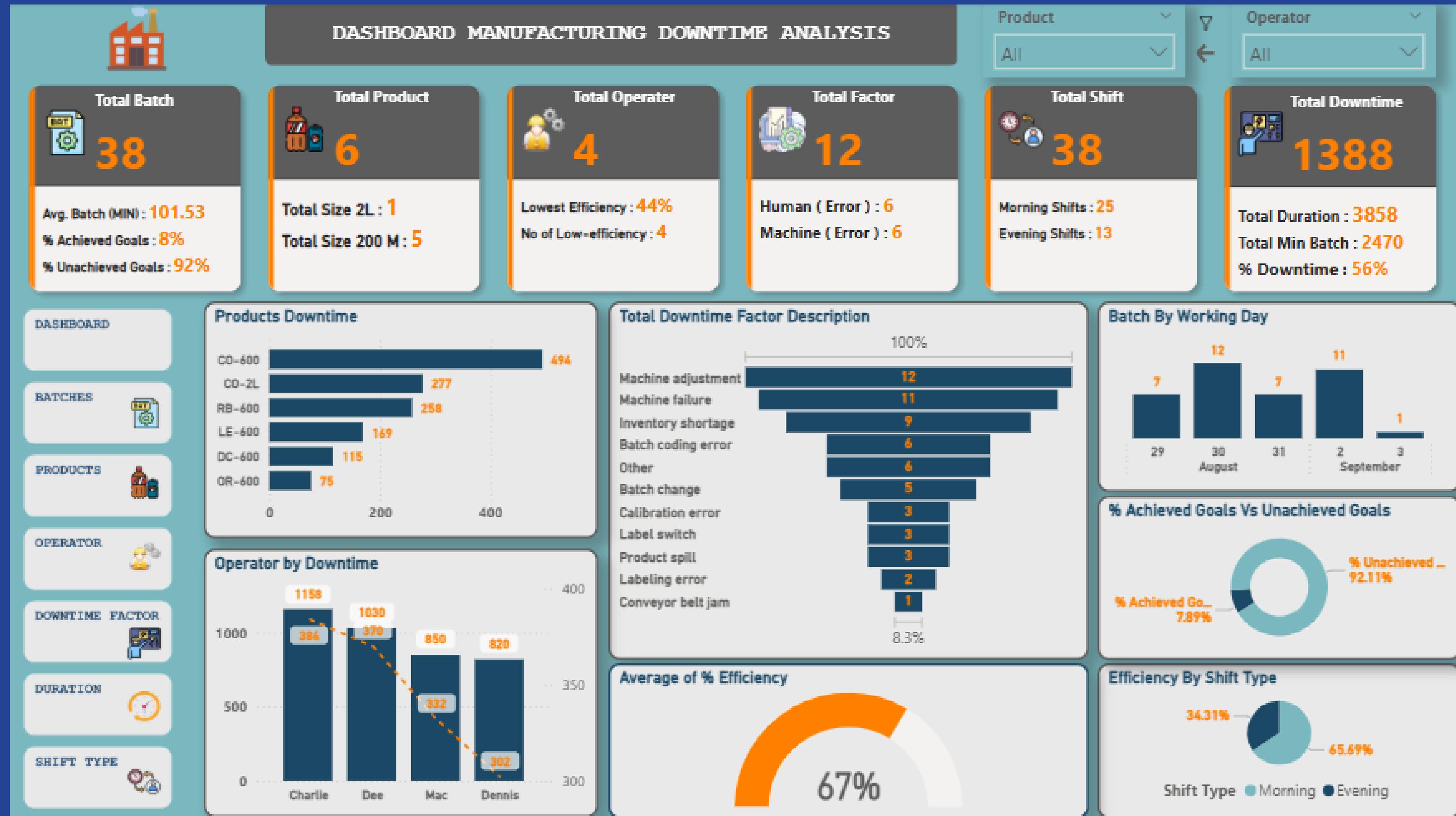
VAR MorningEnd = 18

RETURN

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

# Visual Samples





Thanks