

Data Dictionary – Predictive Maintenance BI

Clean_Dataset (Fact_MachineEvents)

The file `clean_dataset.csv` contains the same fields as the `Fact_MachineEvents` table.

- **EventID**: Surrogate key for each machine reading (integer).
- **DateID**: Foreign key to Dim_Date (YYYYMMDD integer).
- **MachineID**: Foreign key to Dim_Machine.
- **ProductTypeID**: Foreign key to Dim_ProductType.
- **AirTempC**: Air temperature around the machine in degrees Celsius.
- **ProcessTempC**: Process temperature during the operation in degrees Celsius.
- **RotationalSpeed**: Rotational speed of the tool in rpm.
- **Torque**: Torque applied during the operation in Nm.
- **ToolWear**: Cumulative tool usage in minutes.
- **MachineFailure**: Indicates whether any failure occurred during the cycle (1 = Yes, 0 = No).
- **TWF**: Tool wear failure indicator (1 = Yes, 0 = No).
- **HDF**: Heat dissipation failure indicator (1 = Yes, 0 = No).
- **PWF**: Power failure indicator (1 = Yes, 0 = No).
- **OSF**: Overstrain failure indicator (1 = Yes, 0 = No).
- **RNF**: Random failure indicator (1 = Yes, 0 = No).

Dim_ProductType

- **ProductTypeID**: Surrogate key for the product type.
- **ProductType**: Product variant label (L = Low, M = Medium, H = High).

Dim_Date

- **DateID**: Surrogate key for the calendar date (YYYYMMDD).
- **Date**: Calendar date.
- **Day**: Day of the month (1–31).
- **Month**: Month number (1–12).
- **Quarter**: Quarter of the year (1–4).
- **Year**: Calendar year (e.g., 2025).
- **Shift**: Shift label (e.g., Day).

Dim_Machine

- **MachineID**: Surrogate key for the machine.
- **MachineName**: Human-readable machine name (e.g., Machine A, Machine B, Machine C).
- **Line**: Production line name.
- **Location**: Plant or site where the machine is installed.