OAK RIDGE National Laboratory

Generating Database and Display files from Spreadsheets

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U.S. DEPARTMENT OF ENERGY

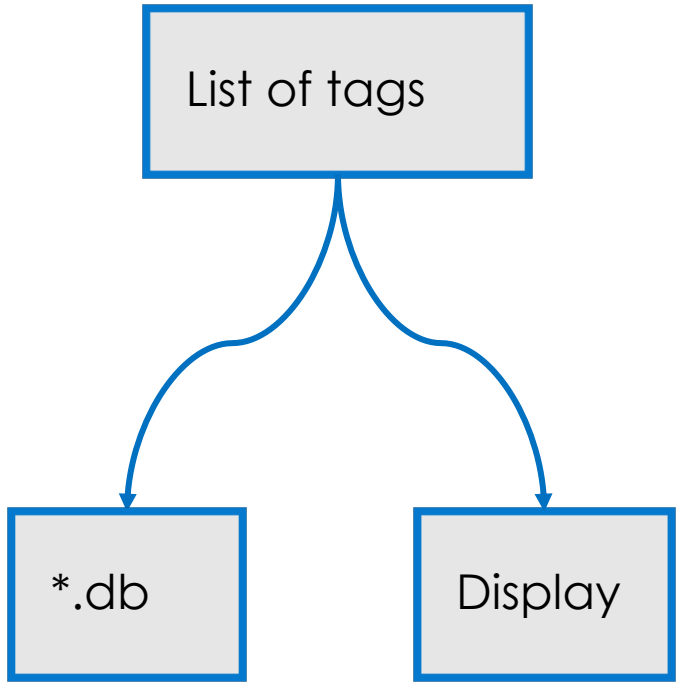
Scenario

You have a lists of 200+ PLC tags

Spreadsheet, text file, …

→ Generate *.db that reads these tags

→ Generate display file that shows them all



Example Spreadsheet

	A	B	C	D	E	F	G	H	I	J	K	L
1	**Internal PLC TAG**	**PLC Tag**	**MailBox TAG**	**Type**	**Register Name**	**Description**	**Units**	**Precision**	**Typical**	**HMI Min**	**HMI Max**	**Actual**
2	E_Total	PPSbplsLR01[0]	PPSmbplsLR01[0]	LREAL	TotalBeamEnergy	Total Beam Energy	eV	4				
3	Ek	PPSbplsLR01[1]	PPSmbplsLR01[1]	LREAL	BeamEnergyeV	Beam Energy in eV	eV	4				
4	Max_Charge	PPSbplsLR01[2]	PPSmbplsLR01[2]	LREAL	BeamChargeMAX	Beam Charge Max	uC	6				
5	Calculated_Beam_Power_A	PPSbplsLR01[3]	PPSmbplsLR01[3]	LREAL	ABeamPower	A Calculated Beam Power	W	6				
6	Calculated_Beam_Power_B	PPSbplsLR01[4]	PPSmbplsLR01[4]	LREAL	BBeamPower	B Calculated Beam Power	W	6				
7	DPU_Trip_Limit_cts_float_A	PPSbplsLR01[5]	PPSmbplsLR01[5]	LREAL	ABeamChargeThreshold	A Beam Charge Threshold	cnt	6				
8	DPU_Trip_Limit_cts_float_B	PPSbplsLR01[6]	PPSmbplsLR01[6]	LREAL	BBeamChargeThreshold	B Beam Charge Threshold	cnt	6				
9	DPU_A_DefaultBeamChargeThreshold	PPSbplsLR01[7]	PPSmbplsLR01[7]	LREAL	ADefaultBCThresholdHMI	A Default Beam Charge ThresholdHMI	cnt	6				
10	DPU_B_DefaultBeamChargeThreshold	PPSbplsLR01[8]	PPSmbplsLR01[8]	LREAL	BDefaultBCThresholdHMI	B Default Beam Charge ThresholdHMI	cnt	6				
11	DPU_ADC_A_m	PPSbplsLR01[9]	PPSmbplsLR01[9]	LREAL	ABeamChargeADCScaleHMI	A ADC Scale Factor from HMI	V/cnt	6	3.05E-05	1.53E-05	4.58E-05	3.07901E-05
12	ADC_S11_A	PPSbplsLR01[10]	PPSmbplsLR01[10]	LREAL	ABeamChargeADCS11HMI	A ADC S11 Reflection from HMI	Units	6	0	-0.1	0.1	0
13	AFE_Const_A	PPSbplsLR01[11]	PPSmbplsLR01[11]	LREAL	ABeamChargeAFETransHMI	A AFE Transmission from HMI	Units	6	0.05	0.025	0.075	0.029735
14	Z_FCT_A	PPSbplsLR01[12]	PPSmbplsLR01[12]	LREAL	ABeamChargeFCTImpedHMI	A FCT Impedance from HMI	V/A	6	0.25	0.225	0.275	0.247401
15	DPU_dt	PPSbplsLR01[13]	PPSmbplsLR01[13]	LREAL	ABeamChargeSmplPerHMI	A ADC Sample Period from HMI	sec	3	1E-08	1.00E-09	1.00E-07	1.00E-08

```
record(ai, "$(S):PLC:ABeamChargeADCS11HMI")
{
    field(DTYP, "EtherIP")
    field(SCAN, "I/O Intr")
    field(INP,  "@$(PLC) PPSmbplsLR01[10] S .5")
    field(DESC, "A ADC S11 Reflection from HMI")
    field(EGU,  "Units")
    field(PREC, "6")
}
```

```
# Created by xls2db.py from ../BPLS_PLC_RTBT_EPICS_V20.xlsx, sheet Revised PLC EPICS Arrays
record(ai, "$(S):PLC:TotalBeamEnergy")
{
    field(DTYP, "EtherIP")
    field(SCAN, "I/O Intr")
    field(INP,  "@$(PLC) PPSmbplsLR01[0] S .5")
    field(DESC, "Total Beam Energy")
    field(EGU,  "eV")
    field(PREC, "4")
}
```

Need to agree on Columns and their Usage

	A	B	C	D	E	F	G	H	I	J	K	L
1	**Internal PLC TAG**	**PLC Tag**	**MailBox TAG**	**Type**	**Register Name**	**Description**	**Units**	**Precision**	**Typical**	**HMI Min**	**HMI Max**	**Actual**
2	E_Total	PPSbplsLR01[0]	PPSmbplsLR01[0]	LREAL	TotalBeamEnergy	Total Beam Energy	eV	4				
3	Ek	PPSbplsLR01[1]	PPSmbplsLR01[1]	LREAL	BeamEnergyeV	Beam Energy in eV	eV	4				
4	Max_Charge	PPSbplsLR01[2]	PPSmbplsLR01[2]	LREAL	BeamChargeMAX	Beam Charge Max	uC	6				
5	Calculated_Beam_Power_A	PPSbplsLR01[3]	PPSmbplsLR01[3]	LREAL	ABeamPower	A Calculated Beam Power	W	6				
6	Calculated_Beam_Power_B	PPSbplsLR01[4]	PPSmbplsLR01[4]	LREAL	BBeamPower	B Calculated Beam Power	W	6				
7	DPU_Trip_Limit_cts_float_A	PPSbplsLR01[5]	PPSmbplsLR01[5]	LREAL	ABeamChargeThreshold	A Beam Charge Threshold	cnt	6				
8	DPU_Trip_Limit_cts_float_B	PPSbplsLR01[6]	PPSmbplsLR01[6]	LREAL	BBeamChargeThreshold	B Beam Charge Threshold	cnt	6				
9	DPU_A_DefaultBeamChargeThreshold	PPSbplsLR01[7]	PPSmbplsLR01[7]	LREAL	ADefaultBCThresholdHMI	A Default Beam Charge ThresholdHMI	cnt	6				
10	DPU_B_DefaultBeamChargeThreshold	PPSbplsLR01[8]	PPSmbplsLR01[8]	LREAL	BDefaultBCThresholdHMI	B Default Beam Charge ThresholdHMI	cnt	6				
11	DPU_ADC_A_m	PPSbplsLR01[9]	PPSmbplsLR01[9]	LREAL	ABeamChargeADCScaleHMI	A ADC Scale Factor from HMI	V/cnt	6	3.05E-05	1.53E-05	4.58E-05	3.07901E-05
12	ADC_S11_A	PPSbplsLR01[10]	PPSmbplsLR01[10]	LREAL	ABeamChargeADCS11HMI	A ADC S11 Reflection from HMI	Units	6	0	-0.1	0.1	0
13	AFE_Const_A	PPSbplsLR01[11]	PPSmbplsLR01[11]	LREAL	ABeamChargeAFETransHMI	A AFE Transmission from HMI	Units	6	0.05	0.025	0.075	0.029735
14	Z_FCT_A	PPSbplsLR01[12]	PPSmbplsLR01[12]	LREAL	ABeamChargeFCTImpedHMI	A FCT Impedance from HMI	V/A	6	0.25	0.225	0.275	0.247401
15	DPU_dt	PPSbplsLR01[13]	PPSmbplsLR01[13]	LREAL	ABeamChargeSmplPerHMI	A ADC Sample Period from HMI	sec	3	1E-08	1.00E-09	1.00E-07	1.00E-08

PLC programmer may have started Spreadsheet as signal list helper

```
# Created by xls2db.py from ../BPLS_PLC_RTBT_EPICS_V20.xlsx, sheet Revised PLC EPICS Arrays
record(ai, "$(S):PLC:TotalBeamEnergy")
{
    field(DTYP, "EtherIP")
    field(SCAN, "I/O Intr")
    field(INP,  "@$(PLC) PPSmbplsLR01[0] S .5")
    field(DESC, "Total Beam Energy")
    field(EGU,  "eV")
    field(PREC, "4")
}
```

- **Register Name** will be used in record name
  → No spaces!
- **Type** determines record type
- **Mailbox TAG** will be used for INP
- **Description**, **Units**, **Precision** will be used for DESC, EGU, PREC
- Colors, fonts, anything else is ignored

Creates tabular display of all tags

	A	B	C	D	E	F	G	H	I	J	K	L
1	**Internal PLC TAG**	**PLC Tag**	**MailBox TAG**	**Type**	**Register Name**	**Description**	**Units**	**Precision**	**Typical**	**HMI Min**	**HMI Max**	**Actual**
2	E_Total	PPSbplsLR01[0]	PPSmbplsLR01[0]	LREAL	TotalBeamEnergy	Total Beam Energy	eV	4				
3	Ek	PPSbplsLR01[1]	PPSmbplsLR01[1]	LREAL	BeamEnergyeV	Beam Energy in eV	eV	4				
4	Max_Charge	PPSbplsLR01[2]	PPSmbplsLR01[2]	LREAL	BeamChargeMAX	Beam Charge Max	uC	6				
5	Calculated_Beam_Power_A	PPSbplsLR01[3]	PPSmbplsLR01[3]	LREAL	ABeamPower	A Calculated Beam Power	W	6				
6	Calculated_Beam_Power_B	PPSbplsLR01[4]	PPSmbplsLR01[4]	LREAL	BBeamPower	B Calculated Beam Power	W	6				
7	DPU_Trip_Limit_cts_float_A	PPSbplsLR01[5]	PPSmbplsLR01[5]	LREAL	ABeamChargeThreshold	A Beam Charge Threshold	cnt	6				

Mailbox PLC

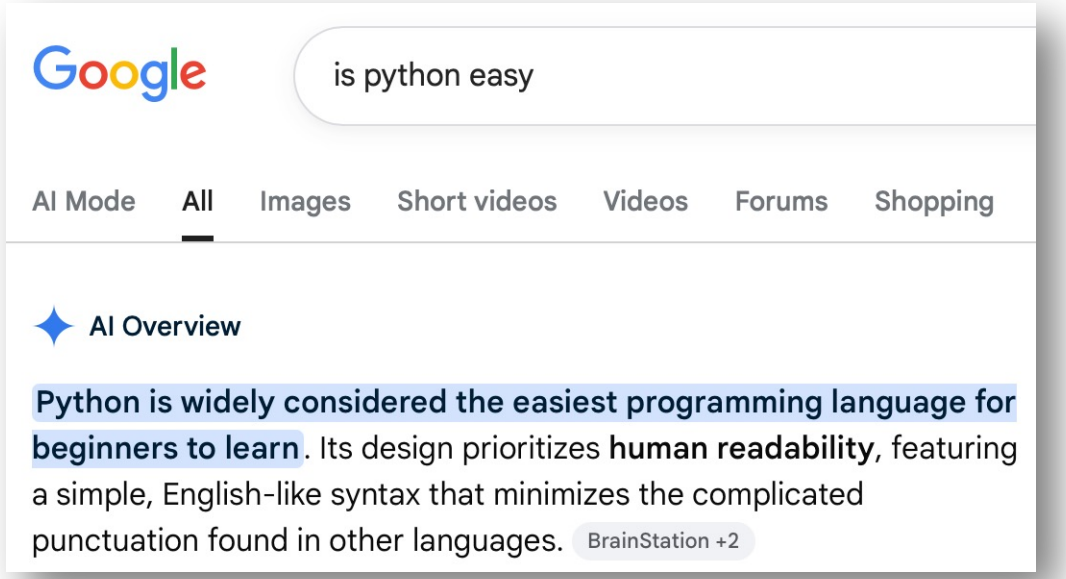
Total Beam Energy:	2.2360E9 eV	MPS PSI B AFE Transmission from HMI:	0.029451	Spare Rack 1 Slot 4 Ch 7 Scaled:	0.000000E0 A	DCCT 2A (4) Slope from HMI:	500.645 A/mA	A Minor Fault Input Rack 2 Slot 1 Ch 5:	OK	B Spare Input Rack 3 Slot 2 Ch 7:	Off	B BPLS Major Fault Output Rack 6 Slot 4 Ch 1:	OK
Beam Energy in eV:	1.2978E9 eV	MPS PSI A ADC S11 Reflection from HMI:	0.966621	A MWA +3.3V Rack 4 Slot 1 Ch 0:	3.298 V	DCCT 2A (4) Intercept from HMI:	-6021.627 A	A Test Pulse Ok Input Rack 2 Slot 1 Ch 6:	Off	B Fault Reset Output Rack 3 Slot 3 Ch 0:	Off	B BPLS Calibration Mode Output Rack 6 Slot 4 Ch 2:	Off
Beam Charge Max:	1.618176E-3 uC	MPS PSI B ADC S11 Reflection from HMI:	0.966621	A MWA -3.3V Rack 4 Slot 1 Ch 1:	-3.322 V	DCCT 2B (5) Slope from HMI:	498.009 A/mA	A Spare Input Rack 2 Slot 1 Ch 7:	Off	B Test Mode Enable Output Rack 3 Slot 3 Ch 1:	Off	B BPLS Bypass Active Output Rack 6 Slot 4 Ch 3:	Off
A Calculated Beam Power:	1.345409E6 W	DCCT 1 Rack 1 Slot 3 Ch 0 RAW:	7.262 mA	A MWA +5V Rack 4 Slot 1 Ch 2:	5.030 V	DCCT 2B (5) Intercept from HMI:	-5988.384 A	A Test Mode Input Rack 2 Slot 2 Ch 0:	Off	B Test Pulse Request Output Rack 3 Slot 3 Ch 2:	Off	B Spare Output Rack 6 Slot 4 Ch 4:	Off
B Calculated Beam Power:	1.349708E6 W	DCCT 2 Rack 1 Slot 3 Ch 1 RAW:	7.281 mA	A MWA -5V Rack 4 Slot 1 Ch 3:	-5.044 V	DCCT 2C (6) Slope from HMI:	501.816 A/mA	A Run Mode Input Rack 2 Slot 2 Ch 1:	On	B Watchdog Status Output Rack 3 Slot 3 Ch 3:	Off	B Spare Output Rack 6 Slot 4 Ch 5:	Off
A Beam Charge Threshold:	2.065220E+9 cnt	DCCT 3 Rack 1 Slot 3 Ch 2RAW:	7.289 mA	A PVM +12V (6V) Rack 4 Slot 2 Ch 0:	12.018 V	DCCT 2C (6) Intercept from HMI:	-6019.642 A	A Maintenance Mode Input Rack 2 Slot 2 Ch 2:	Off	B Test Voltage Enable Output Rack 3 Slot 3 Ch 4:	Off	B Spare Output Rack 6 Slot 4 Ch 6:	Off
B Beam Charge Threshold:	2.069831E+9 cnt	Spare Rack 1 Slot 3 Ch 3RAW:	0.000 mA	A PVM +5V Rack 4 Slot 2 Ch 1:	5.008 V	DCCT Agree bits:	0x7F	A Spare Input Rack 2 Slot 2 Ch 3:	Off	B A/B FIR Select Output Rack 3 Slot 3 Ch 5:	2	B Spare Output Rack 6 Slot 4 Ch 7:	Off
A Default Beam Charge ThresholdHMI:	8.000000E+6 cnt	Spare Rack 1 Slot 3 Ch 4RAW:	0.000 mA	A PVM +500V Scaled:	485.1 V			A Calibration Off Input Rack 2 Slot 2 Ch 4:	On	B FCT FIR Bypass Output Rack 3 Slot 3 Ch 6:	Off	Run Mode:	On
B Default Beam Charge ThresholdHMI:	8.000000E+6 cnt	Spare Rack 1 Slot 3 Ch 5RAW:	0.000 mA	A Spare Rack 4 Slot 2 Ch 3:	0.000 V	A PLC I/O Status bits:	0xD234	A Calibration On Input Rack 2 Slot 2 Ch 5:	Off	B Cable FIR Bypass Output Rack 3 Slot 3 Ch 7:	Off	Maintenance Mode:	Off
A ADC Scale Factor from HMI:	3.127680E-5 V/cnt	Spare Rack 1 Slot 3 Ch 6RAW:	0.000 mA	A MWA +3.3V Rack 5 Slot 1 Ch 0:	3.318 V			A Spare Input Rack 2 Slot 2 Ch 6:	On	B BPLS to RTST Fault Reset Input Rack 6 Slot 1 Ch 0:	Off	A Calibration Mode ON:	Off
A ADC S11 Reflection from HMI:	0.968582 Units	Spare Rack 1 Slot 3 Ch 7RAW:	27.357 mA	A MWA -3.3V Rack 5 Slot 1 Ch 1:	-3.308 V	B PLC I/O Status bits:	0x201234	A Spare Input Rack 2 Slot 2 Ch 7:	Off	B Fault Reset Output Rack 3 Slot 3 Ch 0:	Off	A Bypass Active:	Off
A AFE Transmission from HMI:	0.029468 Units	Spare Rack 1 Slot 4 Ch 0RAW:	0.000 mA	A MWA +5V Rack 5 Slot 1 Ch 2:	5.026 V			A Fault Reset Output Rack 2 Slot 3 Ch 1:	Off	A BPLS Bypass Allowed Input Rack 6 Slot 1 Ch 2:	Off	B Calibration Mode OFF:	On
A FCT Impedance from HMI:	0.247450 V/A	DCCT 5 Rack 1 Slot 3 Ch 4RAW:	0.000 mA	B MWA -5V Rack 5 Slot 1 Ch 3:	-5.035 V	PPS I/O Status bits:	0x30A030A	A Test Mode Enable Output Rack 2 Slot 3 Ch 1:	Off	A Spare Input Rack 6 Slot 1 Ch 3:	On	B Calibration Mode ON:	Off
A ADC Sample Period from HMI:	1.000E-8 sec	Spare Rack 1 Slot 4 Ch 2RAW:	16.772 mA	B PVM +12V (6V) Rack 5 Slot 2 Ch 0:	11.982 V			A Test Pulse Request Output Rack 2 Slot 3 Ch 2:	Off	A Spare Input Rack 6 Slot 1 Ch 4:	Off	A Bypass Active:	Off
A Integration Period from HMI:	56.0 sec	Spare Rack 1 Slot 4 Ch 3RAW:	0.000 mA	B PVM +5V Rack 5 Slot 2 Ch 1:	5.010 V	PLC Logic Status bits:	0x29	A Watchdog Status Output Rack 2 Slot 3 Ch 3:	Off	A Spare Input Rack 6 Slot 1 Ch 5:	Off	B Bypass Active:	Off
B ADC Scale Factor from HMI:	3.127680E-5 V/cnt	Spare Rack 1 Slot 4 Ch 4RAW:	0.000 mA	B PVM +500V Scaled:	485.1 V			A Test Voltage Enable Output Rack 2 Slot 3 Ch 4:	Off	A Spare Input Rack 6 Slot 1 Ch 6:	Off	A Local Reset:	Off
B ADC S11 Reflection from HMI:	0.968582 Units	Spare Rack 1 Slot 4 Ch 5RAW:	0.000 mA	B Spare Rack 5 Slot 2 Ch 3:	0.000 V	PLC Logic Minor Faults bits:	0x0	A A/B FIRs Select Output Rack 2 Slot 3 Ch 5:	1	A Spare Input Rack 6 Slot 1 Ch 7:	Off	B Local Reset:	Off
B AFE Transmission from HMI:	0.029468 Units	Spare Rack 1 Slot 4 Ch 6RAW:	0.000 mA	DCCT A 1 and 4 Ave:	2.380680E3 A			A FCT FIR Bypass Output Rack 2 Slot 3 Ch 6:	Off	A BPLS System Fault Output Rack 6 Slot 2 Ch 0:	OK	PLC Minor Fault Active:	OK
B FCT Impedance from HMI:	0.247450 V/A	Spare Rack 1 Slot 4 Ch 7RAW:	0.000 mA	DCCT B 2 and 5 Ave:	2.402871E3 A	DCCT AB Agree:	OK	A Cable FIR Bypass Output Rack 2 Slot 3 Ch 7:	Off	A BPLS Major Fault Output Rack 6 Slot 2 Ch 1:	OK	Force Active 0:	OK
B ADC Sample Period from HMI:	1.000E-8 sec	DCCT 1A Rack 1 Slot 3 Ch 0 Scaled:	2371.252686 A	DCCT C 3 and 6 Ave:	2.391679E3 A	DCCT AC Agree:	OK	B Watchdog Reset Input Rack 3 Slot 1 Ch 0:	Off	A BPLS Calibration Mode Output Rack 2 Slot 3 Ch 2:	Off	Force Active 1:	OK
B Integration Period from HMI:	56.000 sec	DCCT 1B Rack 1 Slot 3 Ch 1 Scaled:	2394.943604 A	DCCTs Ave Good Values:	2.391743E3 A	DCCT BA Agree:	OK	B Spare Input Rack 3 Slot 1 Ch 1:	Off	A BPLS Bypass Active Output Rack 6 Slot 2 Ch 3:	Off	PLC Key Position 0:	OK
DH13 Polynomial Fit Constant 3 order:	-4.132325E-12 Uni	DCCT 1C Rack 1 Slot 3 Ch 2 Scaled:	2386.411377 A	DCCT 1 vs 4 Vote Win Upper:	1010.0 A	DCCT BC Agree:	OK	B Power Good Translation Input Rack 3 Slot 1 Ch 2:	OK	A Spare Rack 6 Slot 2 Ch 4:	Off	PLC Key Position 1:	OK
DH13 Polynomial Fit Constant 2 order:	8.768298E-9 Units	Spare Rack 1 Slot 3 Ch 3 Scaled:	0.000000E0 A	DCCT 1 vs 4 Vote Win Lower:	990.0 A	DCCT CA Agree:	OK	B Spare Input Rack 3 Slot 1 Ch 3:	Off	A Spare Rack 6 Slot 2 Ch 5:	Off	Lost Comunication With IO:	OK
DH13 Polynomial Fit Constant 1 order:	8.327199E-4 Units	Spare Rack 1 Slot 3 Ch 4 Scaled:	0.000000E0 A	DCCT 2 vs 5 Vote Win Upper:	1010.0 A	DCCT CB Agree:	OK	B Major Fault Input Rack 3 Slot 1 Ch 4:	OK	A Spare Rack 6 Slot 2 Ch 6:	Off	DPU A Minor Fault:	OK
DH13 BL Polynomial Result:	1.985356 T-m	Spare Rack 1 Slot 3 Ch 5 Scaled:	0.000000E0 A	DCCT 2 vs 5 Vote Win Lower:	990.0 A	All DCCT Agree:	OK	B Minor Fault Input Rack 3 Slot 1 Ch 5:	OK	A Spare Rack 6 Slot 2 Ch 7:	Off	DPU B MinorFault:	OK
Proton Rest Energy part of the E total:	0.938272E9 eV	DPU Rack Humidity:	36.2 %RH	DCCT 3 vs 6 Vote Win Upper:	1010.0 A	DCCT Group A Error:	OK	B Test Pulse Ok Input Rack 3 Slot 1 Ch 6:	Off	B BPLS Fault Reset Input Rack 6 Slot 3 Ch 0:	Off	A DPU PLC RS485 Watchdog OK:	OK
ce in eV Speed Of Light part of the E total calculation:	299.792458E6 m/s	DPU Rack Temperature:	27.4 °C	DCCT 3 vs 6 Vote Win Lower:	990.0 A	DCCT Group B Error:	OK	B Spare Input Rack 3 Slot 1 Ch 7:	Off	B Spare Input Rack 6 Slot 3 Ch 1:	On	B DPU PLC RS485 Watchdog OK:	OK
DH13 bending Angle in radians:	2.932502E-1 R	DCCT 2A Rack 1 Slot 4 Ch 0 Scaled:	2390.613281 A	DCCT Offset Voting:	1.000E-3 A	DCCT Group B Error:	OK	B Test Mode Input Rack 3 Slot 2 Ch 0:	Off	B BPLS Bypass Allowed Input Rack 6 Slot 3 Ch 2:	Off		
Beam Power Max Allowed:	2.100000E+6 W	DCCT 2B Rack 1 Slot 4 Ch 1 Scaled:	2411.017090 A	DCCT 1A (1) Slope from HMI:	-499.853 A/mA	2 out of 3 DCCTS Agree:	YES	B Run Mode Input Rack 3 Slot 2 Ch 1:	On	B Spare Input Rack 6 Slot 3 Ch 3:	On		
A Calculated Beam Charge:	1.014538E3 uC	DCCT 2C Rack 1 Slot 4 Ch 2 Scaled:	2397.003418 A	DCCT 1A (1) Intercept from HMI:	6000.839 A	A Watchdog Reset Input Rack 2 Slot 1 Ch 0:	Off	B Maintenance Mode Input Rack 3 Slot 2 Ch 2:	Off	B Spare Input Rack 6 Slot 3 Ch 4:	Off		
B Calculated Beam Charge:	1.018223E3 uC	Spare Rack 1 Slot 4 Ch 3 Scaled:	0.000000E0 A	DCCT 1B (2) Slope from HMI:	-503.658 A/mA	A Spare Input Rack 2 Slot 1 Ch 1:	Off	B Spare Input Rack 3 Slot 2 Ch 3:	Off	B Spare Input Rack 6 Slot 3 Ch 5:	Off		
MPS PSI A ADC Scale Factor from HMI:	3.120180E-5 V/cnt	Spare Rack 1 Slot 4 Ch 4 Scaled:	0.000000E0 A	DCCT 1B (2) Intercept from HMI:	6062.331 A	A Power Good Translation Input Rack 2 Slot 1 Ch 2:	OK	B Calibration Off Input Rack 3 Slot 2 Ch 4:	On	B Spare Input Rack 6 Slot 3 Ch 6:	Off		
MPS PSI A AFE Transmission from HMI:	0.029532	Spare Rack 1 Slot 4 Ch 5 Scaled:	0.000000E0 A	DCCT 1C (3) Slope from HMI:	-502.418 A/mA	A Spare Input Rack 2 Slot 1 Ch 3:	Off	B Calibration On Input Rack 3 Slot 2 Ch 5:	Off	B Spare Input Rack 6 Slot 3 Ch 7:	Off		
MPS PSI B ADC Scale Factor from HMI:	3.114200E-5 V/cnt	Spare Rack 1 Slot 4 Ch 6 Scaled:	0.000000E0 A	DCCT 1C (3) Intercept from HMI:	6048.276 A	A Major Fault Input Rack 2 Slot 1 Ch 4:	OK	B Spare Input Rack 3 Slot 2 Ch 6:	Off	B BPLS System Fault Output Rack 6 Slot 4 Ch 0:	OK		

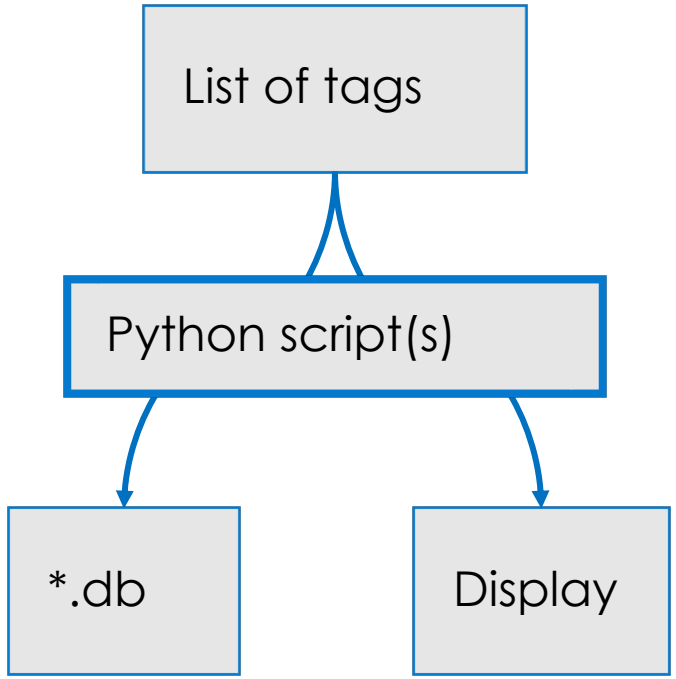
In this case, plain "engineering display" table was all that's needed.

Only sophistication: Type DINT shown as hex number and bits

How?

Python scripts!





Fine print:

While it's easy to start such helper scripts, they're typically very specific to each given spreadsheet.
Small changes to the spreadsheet will break the conversion.
Column names, column order matter!
Comment "Don't use this one!" or "Scale by 10!" in adjacent cell won't be recognized by your script.

Create *.db and displays from spreadsheets?

- ✓ Useful from a certain number of tags on
- ✓ Will reliably create records for all tags
- ✓ Good enough for “engineering displays”, can be starting point for end user displays
- ❑ Needs disciplined spreadsheet updates to prevent breaking the conversion