Excel Automation – Pharma Inventory Workflow (Power Query)

Automating weekly and monthly inventory checks in a regulated pharmaceutical environment

1. Overview

This project automates multiple recurring Excel reports used in weekly and monthly inventory cycles in a pharmaceutical environment.
Before automation, every export required manual work: renaming columns, sorting, applying formatting, preparing printable layouts and ensuring consistency with GMP documentation requirements.

Using **Power Query**, I created a set of automated transformations that convert raw system exports into clean, sorted, print-ready reports with a single **Refresh**.

2. Inventory Process Context

Weekly checks

- **Labels:** quantity check + correct location
- **Leaflets:** correct location only
- **Raw stock:** quantity + location validation

Monthly checks

- **Cartons:** quantity + location verification

My role in the workflow

1. Generate system exports
2. Print reports
3. Analyze batch prep / warehouse marks on paper
4. Update system quantities or locations
5. Scan and archive final reports for documentation

Before automation, **each report required 15–30 minutes of manual Excel cleanup**.

3. Problem

Raw exports from the internal ERP system were inconsistent between report types:

- technical column names
- no predefined sorting
- different column orders
- no formatting
- print layout needed manual setup
- repetitive work every single week/month
- high chance of GMP-relevant human errors

This meant unnecessary time loss and inconsistent documentation quality.

4. Solution — Power Query Automation

I designed a Power Query workflow that prepares each export automatically.

Power Query steps:

- rename columns
- reorder columns
- add additional fields
- define sorting order
- load cleaned data into a formatted Excel sheet

Final Excel formatting (automated):

- table style
- borders
- standardized header & footer
- correct page orientation
- consistent print layout for documentation

Execution

Now the weekly/monthly workflow is:

download new export → refresh → print-ready report

Time required: **under 1 minute total.**

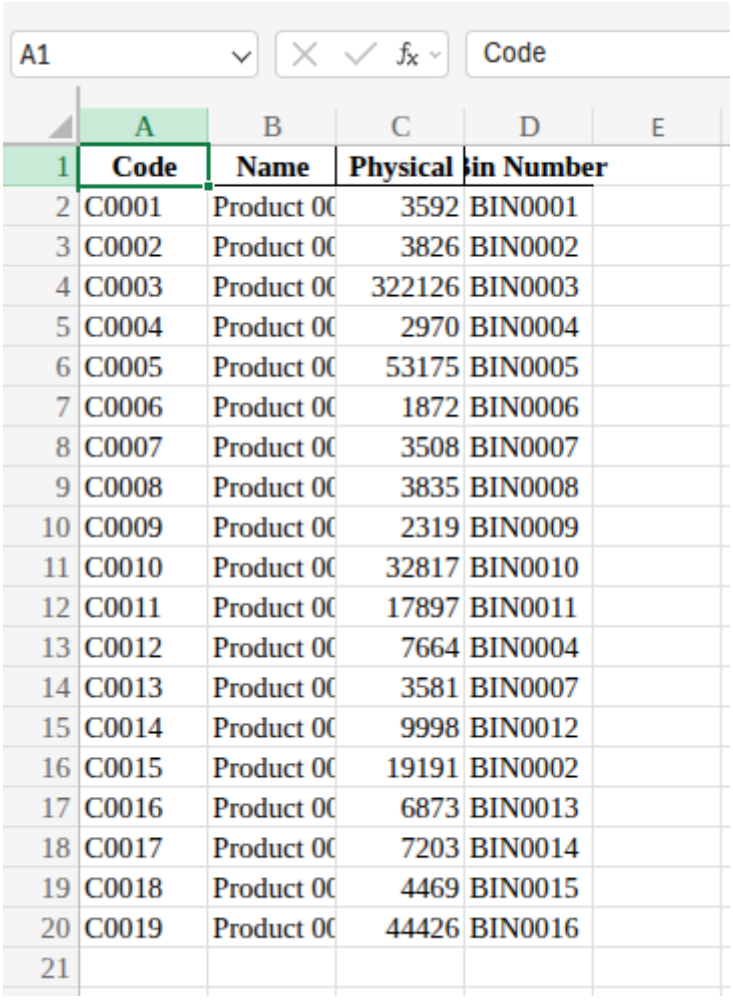
5. Impact

- **The Power Query automation reduced:**
- **data preparation time** from 15–30 minutes to **<2 seconds**,
- **full operator workflow** (download → open → refresh → print) from ~20 minutes to **~1 minute**.
- Consistent visuals and structure
- Lower error rate in GMP documentation
- Faster batch prep / warehouse cycles
- Improved traceability
- Professional and standardized reporting

This represents a **drastic improvement in efficiency, accuracy and GMP compliance.**

6. Evidence

Raw export (anonymized)



	A	B	C	D	E
1	**Code**	**Name**	**Physical**	**in Number**	
2	C0001	Product 00	3592	BIN0001	
3	C0002	Product 00	3826	BIN0002	
4	C0003	Product 00	322126	BIN0003	
5	C0004	Product 00	2970	BIN0004	
6	C0005	Product 00	53175	BIN0005	
7	C0006	Product 00	1872	BIN0006	
8	C0007	Product 00	3508	BIN0007	
9	C0008	Product 00	3835	BIN0008	
10	C0009	Product 00	2319	BIN0009	
11	C0010	Product 00	32817	BIN0010	
12	C0011	Product 00	17897	BIN0011	
13	C0012	Product 00	7664	BIN0004	
14	C0013	Product 00	3581	BIN0007	
15	C0014	Product 00	9998	BIN0012	
16	C0015	Product 00	19191	BIN0002	
17	C0016	Product 00	6873	BIN0013	
18	C0017	Product 00	7203	BIN0014	
19	C0018	Product 00	4469	BIN0015	
20	C0019	Product 00	44426	BIN0016	
21					

Figure A – screenshot of raw export (anonymized)

Power Query editor

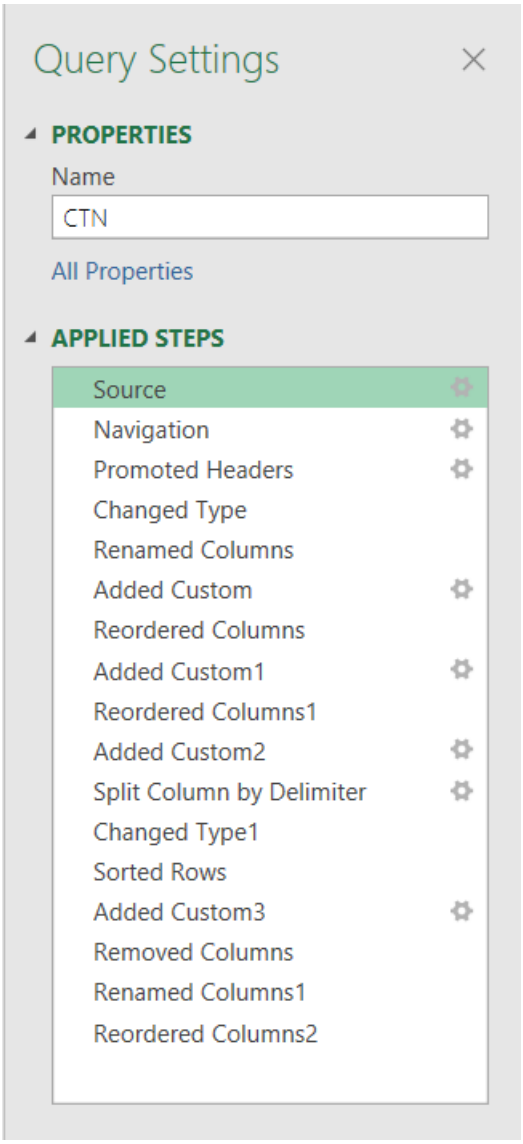
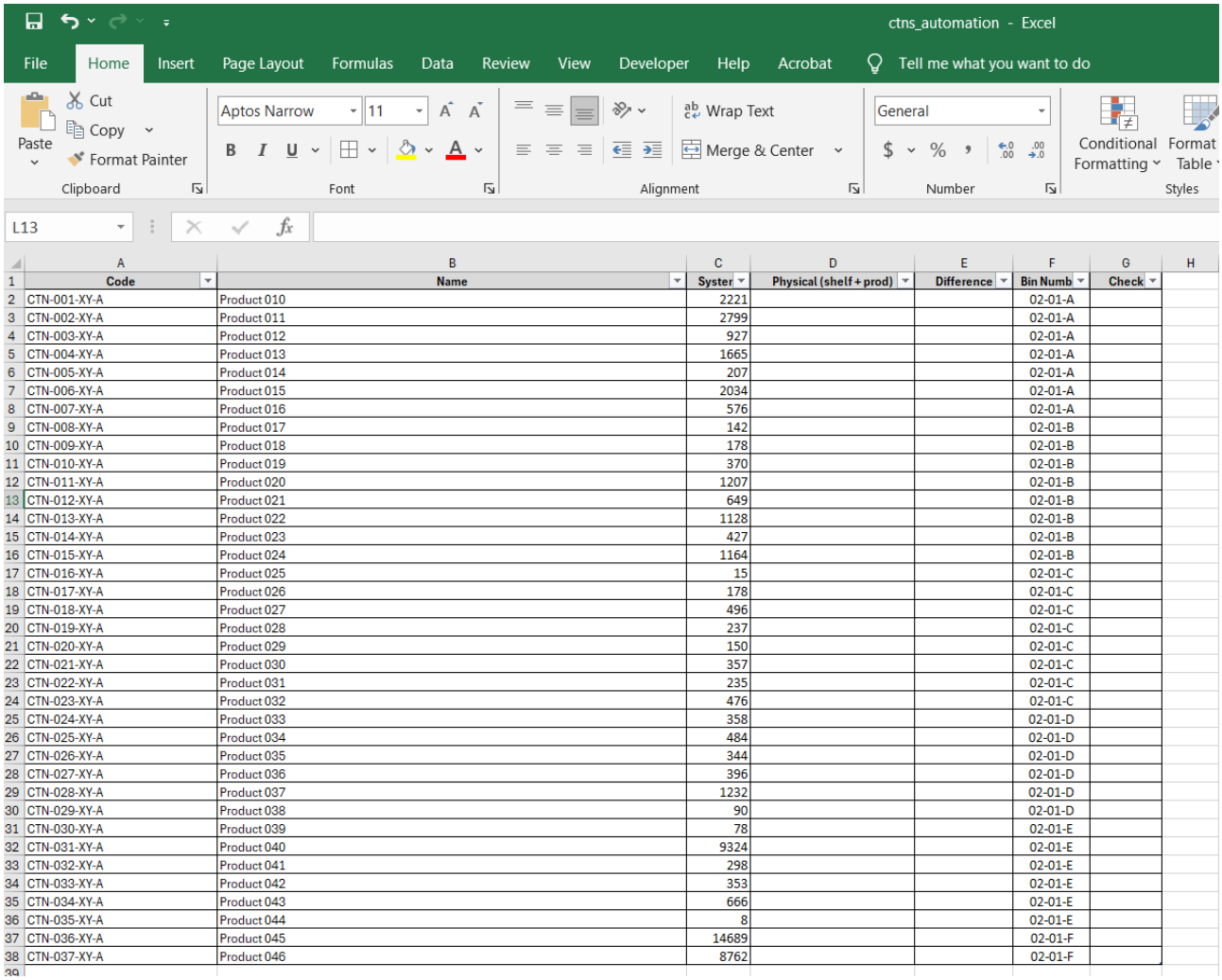


Figure B – screenshot of Power Query settings

Final results



	A	B	C	D	E	F	G	H
1	Code	Name	Syster	Physical (shelf + prod)	Difference	Bin Numb	Check	
2	CTN-001-XY-A	Product 010	2221			02-01-A		
3	CTN-002-XY-A	Product 011	2799			02-01-A		
4	CTN-003-XY-A	Product 012	927			02-01-A		
5	CTN-004-XY-A	Product 013	1665			02-01-A		
6	CTN-005-XY-A	Product 014	207			02-01-A		
7	CTN-006-XY-A	Product 015	2034			02-01-A		
8	CTN-007-XY-A	Product 016	576			02-01-A		
9	CTN-008-XY-A	Product 017	142			02-01-B		
10	CTN-009-XY-A	Product 018	178			02-01-B		
11	CTN-010-XY-A	Product 019	370			02-01-B		
12	CTN-011-XY-A	Product 020	1207			02-01-B		
13	CTN-012-XY-A	Product 021	649			02-01-B		
14	CTN-013-XY-A	Product 022	1128			02-01-B		
15	CTN-014-XY-A	Product 023	427			02-01-B		
16	CTN-015-XY-A	Product 024	1164			02-01-B		
17	CTN-016-XY-A	Product 025	15			02-01-C		
18	CTN-017-XY-A	Product 026	178			02-01-C		
19	CTN-018-XY-A	Product 027	496			02-01-C		
20	CTN-019-XY-A	Product 028	237			02-01-C		
21	CTN-020-XY-A	Product 029	150			02-01-C		
22	CTN-021-XY-A	Product 030	357			02-01-C		
23	CTN-022-XY-A	Product 031	235			02-01-C		
24	CTN-023-XY-A	Product 032	476			02-01-C		
25	CTN-024-XY-A	Product 033	358			02-01-D		
26	CTN-025-XY-A	Product 034	484			02-01-D		
27	CTN-026-XY-A	Product 035	344			02-01-D		
28	CTN-027-XY-A	Product 036	396			02-01-D		
29	CTN-028-XY-A	Product 037	1232			02-01-D		
30	CTN-029-XY-A	Product 038	90			02-01-D		
31	CTN-030-XY-A	Product 039	78			02-01-E		
32	CTN-031-XY-A	Product 040	9324			02-01-E		
33	CTN-032-XY-A	Product 041	298			02-01-E		
34	CTN-033-XY-A	Product 042	353			02-01-E		
35	CTN-034-XY-A	Product 043	666			02-01-E		
36	CTN-035-XY-A	Product 044	8			02-01-E		
37	CTN-036-XY-A	Product 045	14689			02-01-F		
38	CTN-037-XY-A	Product 046	8762			02-01-F		

Figure C – screenshot of final, formatted spreadsheet (anonymized)

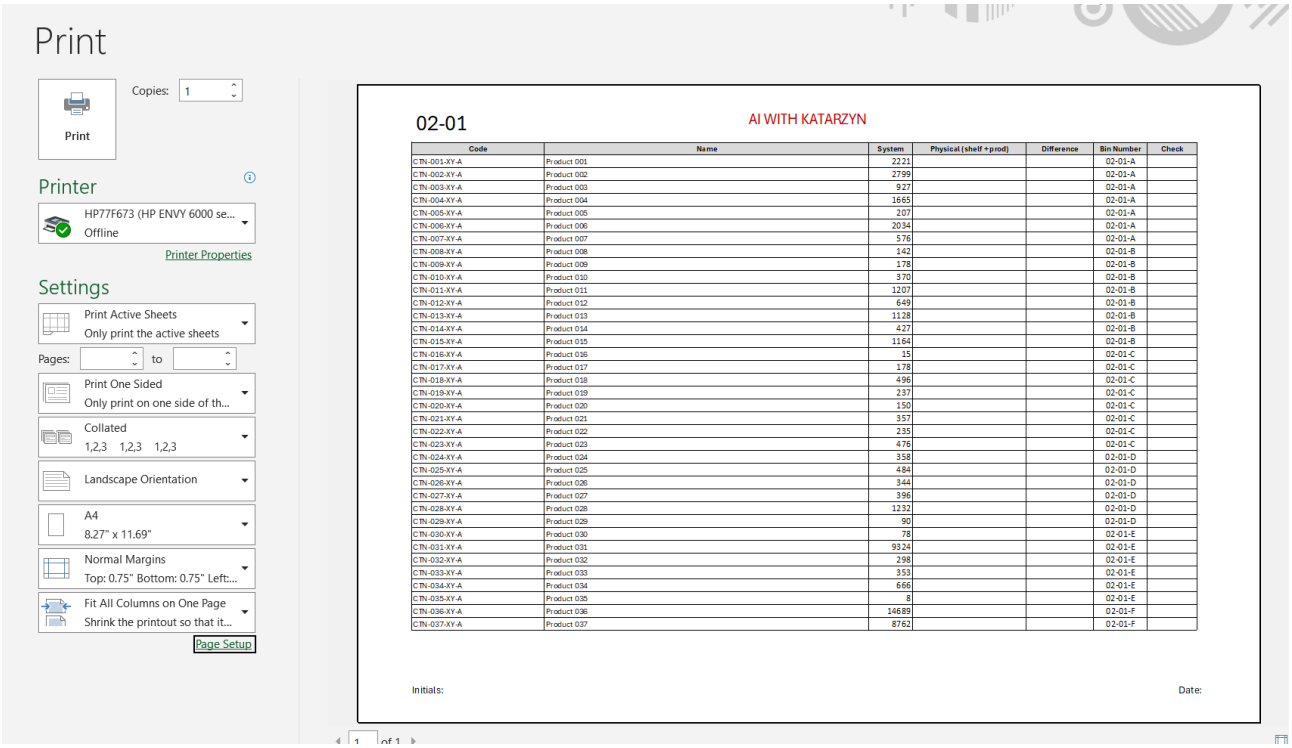


Figure D – screenshot of ready to print report (anonymized)

This automation eliminated repetitive manual work, ensured GMP-compliant data processing, and standardized reporting across weekly and monthly cycles.