

Final Project Iron Hack Data Analyst OCT 2022 Berlin.



Made by Luis Lorman

Project type:

Database management in Cloud

Data source description

- Purchases in Europe 2020-21.
- More than 70K rows and 30 columns in Excel format - Price, Stock, WH, SKUs, Groups, etc.
- 40 Brands in 38 Suppliers.

Challenges

Data classification, NaN, reductions, codify & descodify data in JSON, connect various tools and stabilize it.

- Change of one 1 r/c in Spread = Error -

Used tools:

- Python
- MySQL
- Excel and G.Spreadsheets
- Looker

Library

- import numpy
- matplotlib.
- seaborn
- API
- JSON
- gspread

- reportlab
- os InvoiceGenerator
- mysql.conector
- pandas
- BeautifulSoup
- time

What happens in SPM?

<u>Supply chain management</u>: plenty of tools, outdated data with low adaptability and highly time-consuming.



Still a lot of room for improvement in day-to-day tasks.

- Knowledge workers waste over 40% of their time on manual digital administrative processes.
- Data entry is the most detested manual task.
- Over 75% believe spending time on tasks that could be automated is a poor use of their skills.













Source: https://simplyflows.com/time-wasted-on-repetitive-tasks-is-40-percent/



A perfect balance between automatization and the <u>flexibility</u> of constant manual updates.

Goal

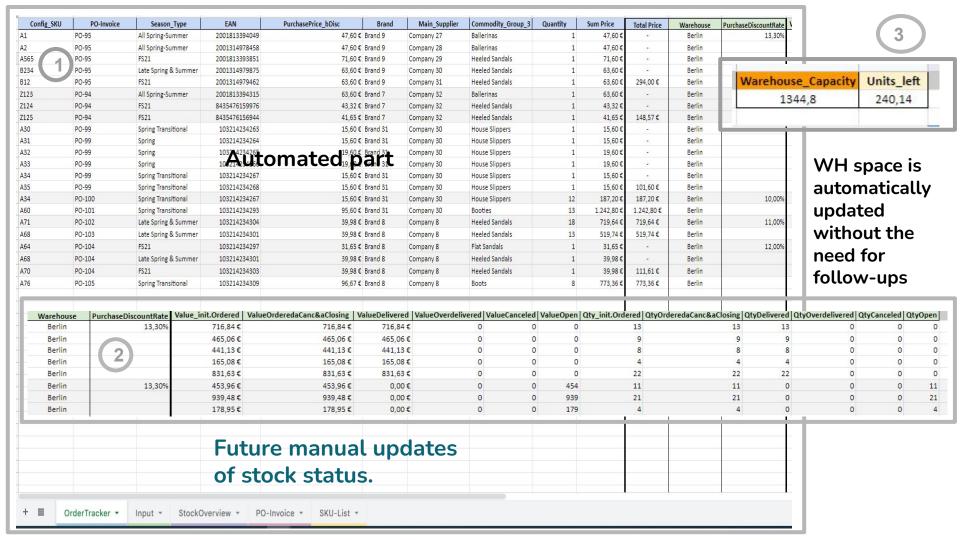


Moving to the cloud

- → A flexible user friendly tool.
- → Extremely adaptable.
- Import & Export automatized data from/into Spreadsheets trough powerful Data programs.
- → Goodbye manual tasks.
- → Reduction of back and forth among teams.
 Procurement Logistic -WH
 Internal vs Third Parties
- → Avoiding human mistakes.
- → Quick invoices in PDF.

Who is the target?

- <u>Coordinators</u> and <u>Teamleads</u>
- Office Workers.



PO-Invoice		Config_SKU	Season_Type	EAN	PurchasePrice_bDisc Brand	Main_Supplier	Commo."+v_Grou
PO-1		A69	All Spring-Summer	103214234234	63,6 Brand 31	Company 30	Ballerinas
PO-2		A2	All Spring-Summer	103214234235	59,6 Brand 31	Company 30	Ballerinas
PO-3		A3	All Spring-Summer	103214234236	63,6 Brand 31	Company 30	Ballerinas
PO-4		<i>A</i> 4	FS21	103214234237	47,6 Brand 31	Company 30	Ballerinas
PO-5	PO-Invoice	A5	FS21	103214234238	43,6 Brand 31	Company 30	Ballerinas
PO-6	PO-IIIVOICE	A6	FS21	1032142342		Company 30	Flat Sandals
PO-7	Code	A7	FS21	1032142342	Index	Company 30	Flat Sandals
PO-8	Oode	A8	FS21	1032142342	macx	Company 30	Flat Sandals
PO-9		A9	All Spring-Summer	103214234242	47,6 Brand 31	Company 30	Ballerinas
PO-10		A10	All Spring-Summer	103214234243	47,6 Brand 31	Company 30	Ballerinas
PO-11		A11	FS21	103214234244	71,6 Brand 31	Company 30	Heeled Sandals
PO-12		A12	Late Spring & Summer	103214234245	63,6 Brand 31	Company 30	Heeled Sandals
PO-13		A13	FS21	103214234246	63,6 Brand 31	Company 30	Heeled Sandals
PO-14		A14	FS21	103214234247	55,6 Brand 31	Company 30	Flat Sandals
PO-15		A15	Spring Transitional	103214234248	79,6 Brand 31	Company 30	Boots
PO-16		A16	Spring Transitional	103214234249	79,6 Brand 31	Company 30	Boots
PO-17		A17	Spring Transitional	103214234250	87,6 Brand 31	Company 30	Boots
PO-18		A18	Spring Transitional	103214234251	91,6 Brand 31	Company 30	Boots
PO-19		A19	Spring Transitional	103214234252	91,6 Brand 31	Company 30	Boots
PO-20		A20	FS21	103214234253	55,6 Brand 31	Company 30	Flat Sandals
PO-21		A21	Spring Transitional	103214234254	87,6 Brand 31	Company 30	Boots
PO-22		A22	Spring Transitional	103214234255	75,6 Brand 31	Company 30	Boots
PO-23		A23	All Spring-Summer	103214234256	59,6 Brand 31	Company 30	Ballerinas
PO-24		A24	All Spring-Summer	103214234257	59,6 Brand 31	Company 30	Ballerinas
PO-25		A25	Spring Transitional	103214234258	87,6 Brand 31	Company 30	Boots
PO-26		A26	Late Spring & Summer	103214234259	59,6 Brand 31	Company 30	Pumps
PO-27		A27	FS21	103214234260	59,6 Brand 31	Company 30	Pumps
PO-28		A28	All Spring-Summer	103214234261	91,6 Brand 31	Company 30	Pumps
PO-29		A29	Spring	103214234262	91,6 Brand 31	Company 30	Pumps
PO-30		A30	Spring Transitional	103214234263	15,6 Brand 31	Company 30	House Slippers
PO-31		A31	Spring	103214234264	15,6 Brand 31	Company 30	House Slippers
PO-32		A32	Spring	103214234265	19,6 Brand 31	Company 30	House Slippers
PO-33		A33	Spring	103214234266	19,6 Brand 31	Company 30	House Slippers
PO-34		A34	Spring Transitional	103214234267	15,6 Brand 31	Company 30	House Slippers
PO-35		A35	Spring Transitional	103214234268	15,6 Brand 31	Company 30	House Slippers
PO-36		A36	Spring Transitional	103214234269	15,6 Brand 31	Company 30	House Slippers
PO-37		A37	Spring Transitional	103214234270	19,6 Brand 31	Company 30	House Slippers
PO-38		38	Spring Transitional	103214234271	19,6 Brand 31	Company 30	House Slippers
PO-39		A. 9	Spring	103214234272	15,6 Brand 31	Company 30	House Slippers
PO-40		A40	Spring	103214234273	15,6 Brand 31	Company 30	House Slippers



OrderTracker -

Input -

StockOverview -

Goodbye to manual filling !!

Config_SKU	PO-Invoice	Season_Type	EAN	PurchasePrice_bDisc	Brand	Main_Supplier	mmodity_Group	Quantity	Sum Price	Total price
A1	PO-95	All Spring-Summ	2001813394049	47,60 €	Brand 9	Company 27	Ballerinas		1 63,60 €	63,60
Config_SKU	PO-Invoice	Season_Type	EAN	PurchasePrice_bDisc	Brand	Main_Supplier	Commodity_Gro	Quantity	Sum Price	Total Price
A565	PO-95	FS21	2001813393851	71,60 €	Brand 9	Company 29	Heeled Sandals		1 63,60 €	-
B234	PO-95	Late Spring & Su	2001314979875	63,60 €	Brand 9	Company 30	Heeled Sandals		1 43,32 €	-
B12	PO-95	FS21	2001314979462	63,60 €	Brand 9	Company 31	Heeled Sandals		1 41,65€	148,57
Config_SKU	PO-Invoice	Season_Type	EAN	PurchasePrice_bDisc	Brand	Main_Supplier	Commodity_Gro	Quantity	Sum Price	Total Price
A12	PO-95	All Spring-Summ	2001813394049	47,60 €	L37	Company 30	Ballerinas		1 47,60 €	-
A234	PO-95	All Spring-Summ	2001314978458	47,60€	L37	Company 30	Ballerinas		1 47,60€	-
F234	PO-95	FS21	2001813393851	71,60€	L37	Company 30	Heeled Sandals		1 71,60€	2
T34	PO-95	Late Spring & Su	2001314979875	63,60€	L37	Company 30	Heeled Sandals		1 63,60€	-
E12	PO-95	FS21	2001314979462	63,60€	L37	Company 30	Heeled Sandals		1 63,60 €	294,00 (
Config_SKU	PO-Invoice	Season_Type	EAN	PurchasePrice_bDisc	Brand	Main_Supplier	Commodity_Gro	Quantity	Sum Price	Total Price
A31	PO-98	Spring	103214234264	15,60€	Brand 31	Company 30	House Slippers		1 15,60 €	-
A51	PO-98	Spring Transition	103214234284	63,60 €	Brand 31	Company 30	Booties		1 63,60€	79,20
Config_SKU	PO-Invoice	Season_Type	EAN	PurchasePrice_bDisc	Brand	Main_Supplier	Commodity_Gro	Quantity	Sum Price	Total Price
A30	PO-99	Spring Transition	103214234263	15,60€	Brand 31	Company 30	House Slippers		1 15,60 €	-
A31	PO-99	Spring	103214234264	15,60€	Brand 31	Company 30	House Slippers		1 15,60 €	-
A32	PO-99	Spring	103214234265	19,60€	Brand 31	Company 30	House Slippers		1 19,60 €	-
A33	PO-99	Spring	103214234266	19,60€	Brand 31	Company 30	House Slippers		1 19,60 €	-
A34	PO-99	Spring Transition	103214234267	15,60 €	Brand 31	Company 30	House Slippers		1 15,60 €	-
A35	PO-99	Spring Transition	103214234268	15,60 €	Brand 31	Company 30	House Slippers		1 15,60 €	101,60
Config_SKU	PO-Invoice	Season_Type	EAN	PurchasePrice_bDisc	Brand	Main_Supplier	Commodity_Gra	Quantity	Sum Price	Total price
A34	PO-100	Spring Transition	103214234267	15,60 €	Brand 31	Company 30	House Slippers		12 187,20 €	187,20
Config_SKU	PO-Invoice	Season_Type	EAN	PurchasePrice_bDisc	Brand	Main_Supplier	Commodity_Gro	Quantity	Sum Price	Total price
A60	PO-101	Spring Transition	103214234293	95,60 €	Brand 31	Company 30	Booties		13 1.242,80€	1.242,80
Config_SKU	PO-Invoice	Season_Type	EAN	PurchasePrice_bDisc	Brand	Main_Supplier	Commodity_Gro	Quantity	Sum Price	Total price
A71	PO-102	Late Spring & Su	103214234304	39,98 €	Brand 8	Company 8	Heeled Sandals		18 719,64 €	719,64
Config_SKU	PO-Invoice	Season_Type	EAN	PurchasePrice_bDisc	Brand	Main_Supplier	Commodity_Gro	Quantity	Sum Price	Total price
A68	PO-103	Late Spring & Su	103214234301	39,98 €	Brand 8	Company 8	Heeled Sandals		13 519,74 €	519,74
Config SKU	PO-Invoice	Season_Type	EAN	PurchasePrice_bDisc	Brand	Main Supplier	Commodity Gro	Quantity	Sum Price	Total Price
A64	PO-104	FS21	103214234297	31,65€	Brand 8	Company 8	Flat Sandals		1 31,65 €	-
A68	PO-104	Late Spring & Su	103214234301	39,98 €	Brand 8	Company 8	Heeled Sandals		1 39,98 €	-
A70	PO-104	FS21	103214234303	39,98€	Brand 8	Company 8	Heeled Sandals		1 39,98 €	111,61
Config SKU	PO-Invoice	Season Type	EAN	PurchasePrice bDisc	Brand	Main Supplier	Commodity Gro	Quantity	Sum Price	Total price
A76	PO-105	Spring Transition	103214234309	96,67 €	Brand 8	Company 8	Boots		8 773,36 €	773,36
Config_SKU	PO-Invoice	Season_Type	EAN	PurchasePrice_bDisc	Brand	Main_Supplier	Commodity_Gro	Quantity	Sum Price	Total Price
44	PO-106	FS21	103214234237		Brand 31	Company 30	Ballerinas		1 47,60 €	-
A11	PO-106	FS21	103214234244	71.60 €	Brand 31	Company 30	Heeled Sandals		1 71,60 €	-
A20	PO-106	FS21	103214234253	55,60€	Brand 31	Company 30	Flat Sandals		1 55,60 €	-
A25	PO-106	Spring Transition	103214234258	87 60 £	Brand 31	Company 30	Boots		1 87,60 €	2

PO-Invoice ▼

SKU-List -

Input sheet

Last human check

The user's SKU entries in Python will be automatically exported to G.Spreadsheets.

			- U		'		11
Brand	%cancel	%open_value	%canceled_waiting_VS_initial_or	der	Total cancelled value over initial Order	Total open stock value vs Original Order (cancellations included)	Open stock value after removing cancelations vs Original Order
Brand 1	38,21	37,81	76,02	76	20,28	34,21	42,91
Brand 10	4,75	10,56	15,31			Source Stock before being 'cleaned'	
Brand 11	29,72	37,12	66,83				
Brand 12	1,87	44,79	46,66				
Brand 14	4,33	93,46	97,78				
Brand 15	1,86	85,8	87,66				
Brand 16	8,76	33,75	42,51				
Brand 17	5,19	56,73	61,91				
Brand 18	54,36	7,49	61,85	10	AVG -Column D	Sum - Column D	Count - Column D
Brand 19	34,47	37,61	72,08		52,69	2054,94	39
Brand 2	8,03	27,89	35,92				
Brand 20	14,46	53,69	68,14				
Brand 21	4,6		21,16				
Brand 22	5,89	0,35	6,24				
Brand 23	48,77	8,11	56,87				
Brand 24	2,8		62,52				
Brand 25	0,12	13,64	13,76				
Brand 26	0,12	9,29	9,41				
Brand 27	35,38	3,68	39,06		*Companies (left) with clarification		
Brand 28	9,91	20,17	30,08		Left table: stock not canceled by User Co	mpany or Supplier Company before delivery.	
Brand 29	7,11	28,66	35,77				
Brand 3	9,02	15,46	24,48	- 39			
Brand 30	7,59	38,02	45,61				
Brand 31	0,06	10,57	10,63		All data from	the OrderTracker sheet wil	l bo
Brand 32	7,76	80,79	88,55	(6	All dala mom	the Order Hacker Sheet wit	t be
Brand 33 Brand 34	1,68	75,55 55,7	77,23		auto analyzas	land experted to this shoe	t for the
Brand 34 Brand 35	0,57 1.15	69,37	56,26 70.52		auto-anatyzeo	I and exported to this shee	t for the
Brand 36	1,15		32,19		whole team G	oodbye Pivot tables!	
Brand 37	22,11	31.78	52,19		Whole team. G	oodbye Fivot tables:	
Brand 38	22,11		40,14	- 12			
Brand 39	0		100	-/-			
Brand 4	11,84	18,14	29,98				
Brand 40	1.42	56.19	57.61				
Brand 5	7,13	88,96	96.09				
Brand 6	7,92	55,38	63,31	7			
Brand 7	5.35	27,99	33.34	T)			
Brand 8	4	69,65	73,65				
Brand 9	3,26	90,67	93,92	0.00			
	7,00	- 3,01	,				
(
+ ≣	OrderTracker	▼ Input	▼ StockOverview ▼	PO-Invoice *	SKU-List -		

Invoice num.: PO-105

Provider Company 8	
Payment information	Customer Brand 8
Account n.:	

List of items			
Description	Units	Price per one	Total price
SKU: A76, EAN: 103214234309	8	96,67 Euros	773,36 Euros
	Total: 77	3,36 Euros	

<u>Invoices</u>

PO-Invoice: 'PO-106'

Season_Type	EAN	PurchasePrice_bDisc	Brand	Main_Supplier	Commodity_Group_3	Quantity	Sum Price	Total Price
FS21	103214234237	47.6	Brand 31	Company 30	Ballerinas	1	47.6	
FS21	103214234244	71.6	Brand 31	Company 30	Heeled Sandals	1	71.6	
FS21	103214234253	55.6	Brand 31	Company 30	Flat Sandals	1	55.6	
Spring Transitional	103214234258	87.6	Brand 31	Company 30	Boots	1	87.6	
Late Spring & Summer	103214234259	59.6	Brand 31	Company 30	Pumps	1	59.6	322.0

ayment information	Account number
Visa 123456	123456
Mastercard 456789	456789
Discover 901234	901234

Creator: 2022-12-14

Final SKU Local Input()

Please, enter the total number of items in the order, in order to check the WH space: 5

Space available in WH: 97.92% by 235 units left.

Space left: 1316.8 Sqm left

Enter SKU: A4

Enter a number: 1

C:\Users\Stephan\AppData\Local\Temp\ipykernel_6168\652438876.py:110: FutureWarning: The frame.append method is deprecated and w ill be removed from pandas in a future version. Use pandas.concat instead.

df = df.append({'Config_SKU': x, "Quantity":n_sku}, ignore_index=True)

Do you want to add another SKU? yes/no y

Enter SKU: A11 Enter a number: 1

C:\Users\Stephan\AppData\Local\Temp\ipykernel_6168\652438876.py:110: FutureWarning: The frame.append method is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.

df = df.append({'Config_SKU': x, "Quantity":n_sku}, ignore_index=True)

Do you want to add another SKU? yes/no y

Enter SKU: A20

Enter a number: 1

C:\Users\Stephan\AppData\Local\Temp\ipykernel_6168\652438876.py:110: FutureWarning: The frame.append method is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.

df = df.append('Config_SKU': x, "Quantify:"n_sku', 'gonore_indew=True')

Do you want to add another SKU? yes/no y

Enter SKU: A25

Enter a number: 1

C:\Users\Stephan\AppData\Local\Temp\ipykernel_6168\652438876.py:110: FutureWarning: The frame.append method is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.

df = df.append({ 'Config SKU': x, "Quantity":n sku}, ignore index=True)

Do you want to add another SKU? yes/no y

Enter SKU: A26

Enter a number: 1

C:\Users\Stephan\AppData\Local\Temp\ipykernel_6168\652438876.py:110: FutureWarning: The frame.append method is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.

df = df.append(f'config SKU': x, "Quantity": n skuy, ignore index=True)

Do you want to add another SKU? yes/no no

C:\Users\Stephan\AppData\Local\Temp\ipykernel_6168\652438876.py:203: SettingWithCopyWarning:

A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-ve-rsus-a-copy

df merged['Total Price'].iloc[:-1] = '-'

(Config_SKU	PO- Invoice	Season_Type	EAN	PurchasePrice_bDisc	Brand	Main_Supplier	Commodity_Group_3	Quantity	Sum	Total Price
0	A4	PO-106	FS21	103214234237	47.6	Brand 31	Company 30	Ballerinas	1	47.6	
1	A11	PO-106	FS21	103214234244	71.6	Brand 31	Company 30	Heeled Sandals	1	71.6	
2	A20	PO-108	FS21	103214234253	55.6	Brand 31	Company 30	Flat Sandals	1	55.6	
3	A25	PO-106	Spring Transitional	103214234258	87.6	Brand 31	Company 30	Boots	1	87.6	-
4	A26	PO-106	Late Spring & Summer	103214234259	59.6	Brand 31	Company 30	Pumps	1	59.6	322.0

```
storage()
```

12

Space available in WH: 96.64% by 345 units left.

Space left: 1932.8 Sqm left

```
def WH_capacity (wh_total):
    import gspread #getting access
    gc= gspread.service_account(filename = "mythic-delight-370211-09579ff6aae2.json")
    sh= gc.open("Final Project").worksheet("OrderTracker")
    sh.update("AG2",wh_total) #updating cell with updated space left
    wh_total=wh_total
```

WH capacity(2000) # add into Sheet WH space



BI Overview in StockOverview (Final Project)

introudce file name and process everything

```
def Stock file Spread(): # SOL Purchase Order Report.xlsx # New Purchase Order Report.xlsx.xlsx
   import pandas as pd
   x=input()
   Excel file = pd.read excel(x)
   Copy 1= Excel file
   Sorted copy = Copy 1[["Brand", "Supplier Supplier Name", "Cancellation Reason (PO Position Number)", "Value init Ordered", "Value
   New_sorted = Sorted_copy[Sorted_copy["Cancellation Reason (PO Position Number)"] != "INTERNAL_MISTAKE"]
   New sorted =Sorted copy[Sorted copy["Cancellation Reason (PO Position Number)"] != "CANCELED BY ZALANDO"]
   New sorted =Sorted copy[Sorted copy["Cancellation Reason (PO Position Number)"] != "OTHER"]
   New sorted brand =New sorted.groupby(['Brand']).sum().reset index()
   Sorted_nan=New_sorted_brand.dropna()
                                                                               In [42]: Stock file Spread() # New Purchase Order Report.xLsx.xLsx #Sorted copy 2 Open
    ### cancelations per brand
                                                                                      New Purchase Order Report.xlsx.xlsx
                                                                                      It ran well
    Sorted nan cancellations= pd.DataFrame(((Sorted nan["Value Canceled"])/Sor
    Sorted_nan_cancellations = round(Sorted_nan_cancellations,2)
   Sorted nan cancellations.index = New sorted brand.Brand
    Sorted nan cancellations, columns = ["%cancel"]
   Sorted nan cancellations = Sorted nan cancellations.reset index() #reset the index again, brand are settled as index, and not
   Sorted_nan_cancellations=pd.DataFrame(Sorted_nan cancellations)
    #Sorted nan cancellations
    #OPEN VALUE per brand
    Sorted nan open=pd.DataFrame(Sorted nan["Value Open"]/Sorted nan["Value init Ordered"]*100)
   Sorted_nan_open= round(Sorted_nan_open,2)
   Sorted_nan_open.index = New_sorted_brand.Brand
   Sorted nan open.columns = ["%open value"]
   Sorted_nan_open = Sorted_nan_open.reset_index() #reset the index again, brand are settled as index, and not show in G.Spread,
   Sorted nan open=pd.DataFrame(Sorted nan open)
    #Sorted nan open
    #inicial cancel and open üper brand
   InicialVSperbrand= ((Sorted_nan["Value_Canceled"]+Sorted_nan["Value_Open"])/Sorted_nan["Value_init_Ordered"])*100
    InicialVSperbrand.index = New sorted brand.Brand
    InicialVSperbrand=pd.DataFrame(InicialVSperbrand)
```

