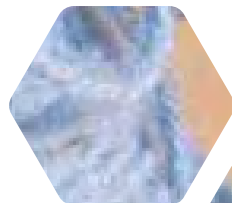












Data Lineage

Wohin gehen meine Daten?





Dokumentation von Hand

Name	Änderungsdatum	Typ	Größe
 DWH_Dokumentation.1.2_Endgültig.docx	04.09.2022 11:35	Microsoft Word-D...	12 KB
 DWH_Dokumentation.1.2_Final.docx	04.09.2022 11:34	Microsoft Word-D...	12 KB
 DWH_Dokumentation.1.2_FinalFinal.docx	04.09.2022 11:34	Microsoft Word-D...	12 KB
 DWH_Dokumentation.1.2_NEW.docx	04.09.2022 11:34	Microsoft Word-D...	12 KB
 DWH_Dokumentation.1.2_NEW1.docx	04.09.2022 11:35	Microsoft Word-D...	12 KB
 DWH_Dokumentation.docx	04.09.2022 11:33	Microsoft Word-D...	12 KB
 DWH_Dokumentation.V1.2.docx	04.09.2022 11:33	Microsoft Word-D...	12 KB
 DWH_Dokumentation_V1.2.docx	04.09.2022 11:33	Microsoft Word-D...	12 KB

Masterprogramm

SAS-Programm

Kommentare
entfernen

SAS-Programm

SAS-Programm

Client Programm

Proc Contents IN

Datastep

Proc Contents OUT

SAS Tabelle

ausführen

SAS Tabelle

analysieren

Data Lineage Prozess

Code einlesen, Kommentare entfernen

Code in SAS-Tabelle und Metadaten erzeugen

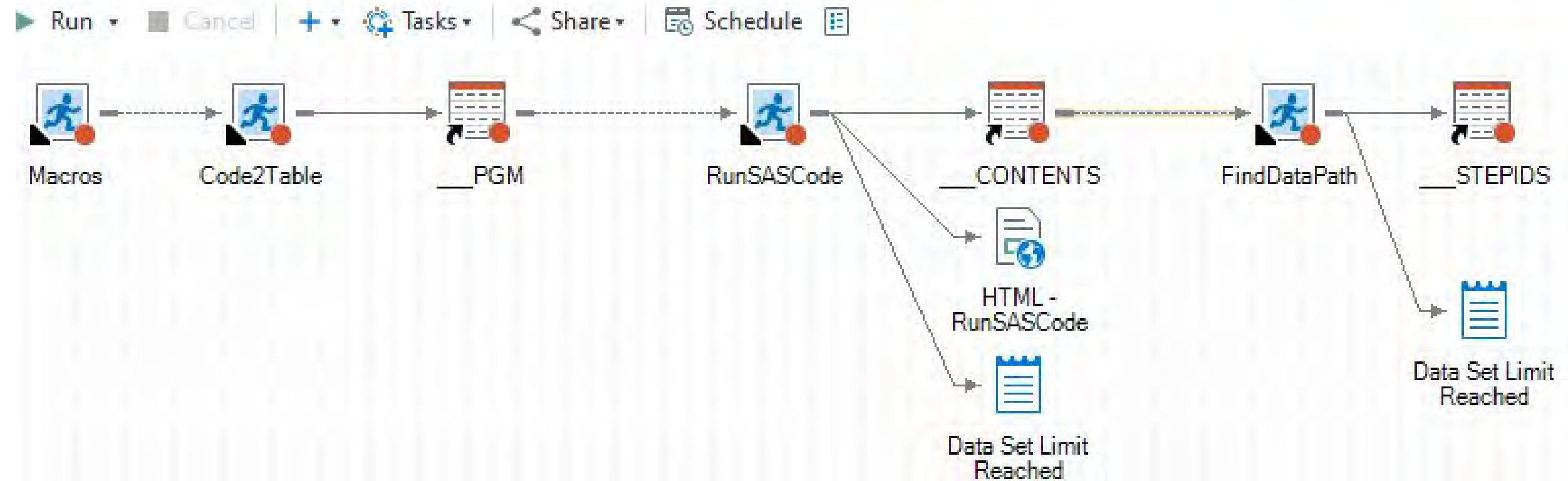
Code Run Step by Step, IN und OUT Felder identifizieren

IN und OUT pro Step mergen

IN und OUT der Steps mergen

Visualisieren

Prozessfluss im Enterprise Guide



```

/*=====
We need a reporting, showing the stocks sum per business.
private customers only.

stocks      : T1WPBEST (Keys: stocks  (WPKENN)
                  customer (FILNR KDLFDNR)

business    : relation(BRANCHE)
amount      : stocks(AUSMBETR)
customer type: customers(KDBETRKZ)
=====*/
libname ref1 'C:\KK\DWH';

*** xxx ***;
proc sort data=ref1.T1WPBEST
      out =T1WPBEST;
by FILNR KDLFDNR;

* -----
  Kommentar
-----;;
proc sort data=ref1.T6KUBA
      out =T6KUBA;
by FILNR KDLFDNR;

data mergedata (keep= WPKENN FILNR KDLFDNR AUSMBETR KDBETRKZ);
  merge T1WPBEST
        T6KUBA;
  by FILNR KDLFDNR;
run;

data Privatedata;
  set mergedata;
  where KDBETRKZ='P'
        and WPKENN is not missing;
run;

```

```

proc sort data=Privatedata;
  by WPKENN;

proc sort data=ref1.T3WPBEZ;
  by WPKENN;
run;

*** xxx ***;
Filename x 'C:\tmp';
%LET X=X;

data BPdata (keep= WPKENN FILNR KDLFDNR AUSMBETR KDBETRKZ
                  BRANCHE);
  merge Privatedata ref1.T3WPBEZ;
  by WPKENN; if FILNR NE .;run;
  %* Macrocode;

proc means data=BPdata sum;
  var AUSMBETR;
  class BRANCHE;
run;

```

Beispielcode

```

libname refl 'C:\KK\DWH';

proc sort data=refl.T1WPBEST
    out =T1WPBEST;
by FILNR KDLFDNR;
;
proc sort data=refl.T6KUBA
    out =T6KUBA;
    by FILNR KDLFDNR;

data mergedata (keep= WPKENN FILNR KDLFDNR AUSMBETR KDBETRKZ);
    merge T1WPBEST
          T6KUBA;
    by FILNR KDLFDNR;
run;

data Privatedata;
    set mergedata;
    where KDBETRKZ='P'
          and WPKENN is not missing;
run;

```

```

proc sort data=Privatedata;
    by WPKENN;

proc sort data=refl.T3WPBEZ;
    by WPKENN;
Run;

Filename x 'C:\tmp';
%LET X=X;

data BPdata (keep= WPKENN FILNR KDLFDNR AUSMBETR KDBETRKZ
                 BRANCHE);
    merge Privatedata refl.T3WPBEZ;
    by WPKENN; if FILNR NE .;run;

proc means data=BPdata sum;
    var AUSMBETR;
    class BRANCHE;
run;

```

Beispielcode ohne Kommentare

Beispielcode

Ergebnis

The SAS System

The MEANS Procedure

Analysis Variable : AUSMBETR AUSMACHENDER BETRAG SALDO		
BRANCHENSCHLUESSEL	N Obs	Sum
0000	1	52.4075987
0020	19	135627.17
0021	25	50808689.12
0022	23	104366.03
0030	20	541121.75
0031	34	48864.97
0032	2	1331.28
0033	2	3006.75
0034	1	10.4403801
0041	9	124886.23
0042	3	10120.85
0050	9	33178.41
0051	3	1702.22
0070	2	1396.59
0071	9	11132.70
0072	7	199311.61
0073	7	6583084.86
0074	5	6495.05
0076	5	6376.93
0077	4	7106.25
0078	2	3813.61
0079	32	245857.09











Line	Status	StepID	Procname	OutData	InData
1 LIBNAME REF1 'C:\KK\DWH';	Open Code	1			
2 PROC SORT DATA=REF1.T1WPBEST OUT =T1WPBEST;	Proc	2	SORT	T1WPBEST	REF1.T1WPBEST
3 BY FILNR KDLFDNR;	Proc running	2	SORT		
4 ;	Proc running	2	SORT		
5 PROC SORT DATA=REF1.T6KUJBA OUT =T6KUJBA;	Proc	3	SORT	T6KUJBA	REF1.T6KUJBA
6 BY FILNR KDLFDNR;	Proc running	3	SORT		
7 DATA MERGEDATA (KEEP= WPKENN FILNR KDLFDNR AUSMBETR KDBETRKZ);	Datastep	4	Data	MERGEDATA	
8 MERGE T1WPBEST T6KUJBA;	Step running	4	Data		T1WPBEST T6KUJBA
9 BY FILNR KDLFDNR;	Step running	4	Data		
10 RUN;	Run	4	Data		
11 DATA PRIVATEDATA;	Datastep	5	Data	PRIVATEDATA	
12 SET MERGEDATA;	Step running	5	Data		MERGEDATA
13 WHERE KDBETRKZ='P' AND WPKENN IS NOT MISSING;	Step running	5	Data		
14 RUN;	Run	5	Data		
15 PROC SORT DATA=PRIVATEDATA;	Proc	6	SORT		PRIVATEDATA;
16 BY WPKENN;	Proc running	6	SORT		
17 PROC SORT DATA=REF1.T3WPBEZ;	Proc	7	SORT		REF1.T3WPBEZ;
18 BY WPKENN;	Proc running	7	SORT		
19 RUN;	Run	7	SORT		
20 FILENAME X 'C:\TMP';	Open Code	8			
21 %LET X=X;	Open Code	8			
22 DATA Bpdata (KEEP= WPKENN FILNR KDLFDNR AUSMBETR KDBETRKZ BRAN...);	Datastep	9	Data	Bpdata	
23 MERGE PRIVATEDATA REF1.T3WPBEZ;	Step running	9	Data		PRIVATEDATA REF1.T3WPBEZ
24 RUN;	Run	9	Data		
25 PROC MEANS DATA=Bpdata SUM;	Proc	10	MEANS		
26 VAR AUSMBETR;	Proc running	10	MEANS		
27 CLASS BRANCHE;	Proc running	10	MEANS		
28 RUN;	Run	10	MEANS		











Beispielcode
als
SAS Tabelle

Metadaten

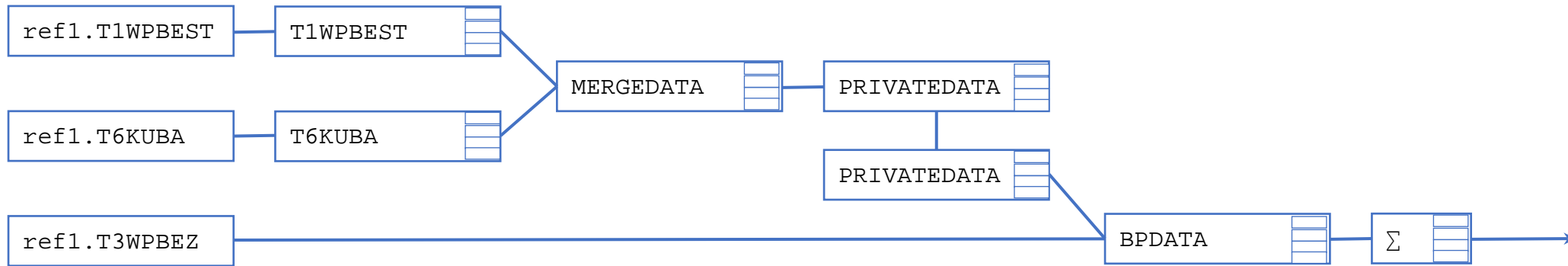
	#	StepID	IO	LIBNAME	MEMNAME	NAME	#	TYPE	#	LENGTH	LABEL
09		4	IN	REF1	T6KUUBA	SPRACHSL	2		3		SPRACHEN-SCHLUESSEL
10		4	IN	REF1	T6KUUBA	STRASSE	2		29		STRASSE
11		4	IN	REF1	T6KUUBA	UMSKAT	2		1		UMSATZKATEGORIE-SCHLUESSEL
12		4	IN	REF1	T6KUUBA	WERBESL	2		2		WERBESCHLUESSEL
13		4	IN	REF1	T6KUUBA	WOHNBZK	1		8		WOHNBEZIRKS-KENNZIFFER
14		4	IN	REF1	T6KUUBA	WOHNS2KZ	2		1		KENNZEICHEN 2-TER WOHNSTZ
15		4	OUT	WORK	MERGEDATA	AUSMBETR	1		8		AUSMACHENDER BETRAG SALDO
16		4	OUT	WORK	MERGEDATA	FILNR	2		5		FILIALNUMMER 5-STELLIG
17		4	OUT	WORK	MERGEDATA	KDBETR KZ	2		1		KUNDENBETREUUNGS-KZ AFP O. AFK
18		4	OUT	WORK	MERGEDATA	KDLFDNR	2		5		KUNDENNUMMER STELLE 6 BIS 10
19		4	OUT	WORK	MERGEDATA	WPKENN	1		8		WERTPAPIERKENN- NR.
20		5	IN	WORK	MERGEDATA	AUSMBETR	1		8		AUSMACHENDER BETRAG SALDO
21		5	IN	WORK	MERGEDATA	FILNR	2		5		FILIALNUMMER 5-STELLIG
22		5	IN	WORK	MERGEDATA	KDBETR KZ	2		1		KUNDENBETREUUNGS-KZ AFP O. AFK

Code und Logs

Name	Date modified	Type	Size
 step000001	9/6/2022 2:27 PM	SAS Program	1 KB
 step000002	9/6/2022 2:27 PM	SAS Program	1 KB
 step000003	9/6/2022 2:27 PM	SAS Program	1 KB
 step000004	9/6/2022 2:27 PM	SAS Program	1 KB
 step000005	9/6/2022 2:27 PM	SAS Program	1 KB
 step000006	9/6/2022 2:27 PM	SAS Program	1 KB
 step000007	9/6/2022 2:27 PM	SAS Program	1 KB
 step000008	9/6/2022 2:27 PM	SAS Program	1 KB
 step000009	9/6/2022 2:27 PM	SAS Program	1 KB
 step000010	9/6/2022 2:27 PM	SAS Program	1 KB

Name	Date modified	Type	Size
 Steplog000001	9/6/2022 2:27 PM	Text Document	1 KB
 Steplog000002	9/6/2022 2:27 PM	Text Document	1 KB
 Steplog000003	9/6/2022 2:27 PM	Text Document	1 KB
 Steplog000004	9/6/2022 2:27 PM	Text Document	1 KB
 Steplog000005	9/6/2022 2:27 PM	Text Document	1 KB
 Steplog000006	9/6/2022 2:27 PM	Text Document	1 KB
 Steplog000007	9/6/2022 2:27 PM	Text Document	1 KB
 Steplog000008	9/6/2022 2:27 PM	Text Document	1 KB
 Steplog000009	9/6/2022 2:27 PM	Text Document	1 KB
 Steplog000010	9/6/2022 2:27 PM	Text Document	1 KB

Was das Programm tut



The SAS System
The MEANS Procedure

Analysis Variable : AUSMBETR
AUSMACHENDER BETRAG SALDO

BRANCHENSCHLUESSEL	N Obs	Sum
0000	1	52.4075987
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0021	25	50808689.12
0022	23	104366.03
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0031	34	48864.97
0032	2	1331.28
0033	2	3006.75
0034	1	10.4403801
0041	9	124886.23
0042	3	10120.85
0050	9	33178.41
0051	3	1702.22
0070	2	1396.59
0071	9	11132.70
0072	7	199311.61
0073	7	6583084.86
0074	5	6495.05
0076	5	6376.93
0077	4	7106.25
0078	2	3813.61
0079	32	245857.09

Weiter entwickeln

- Macros (MPRINT)
- PROC SQL
- verkettten
- visualisieren



...dann hat die Katze
keine Chance mehr



Klaus Kepert

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Mobil: 0176 618 168 59