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Telecommunication Case Modelling – Call Center

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M I N I N G

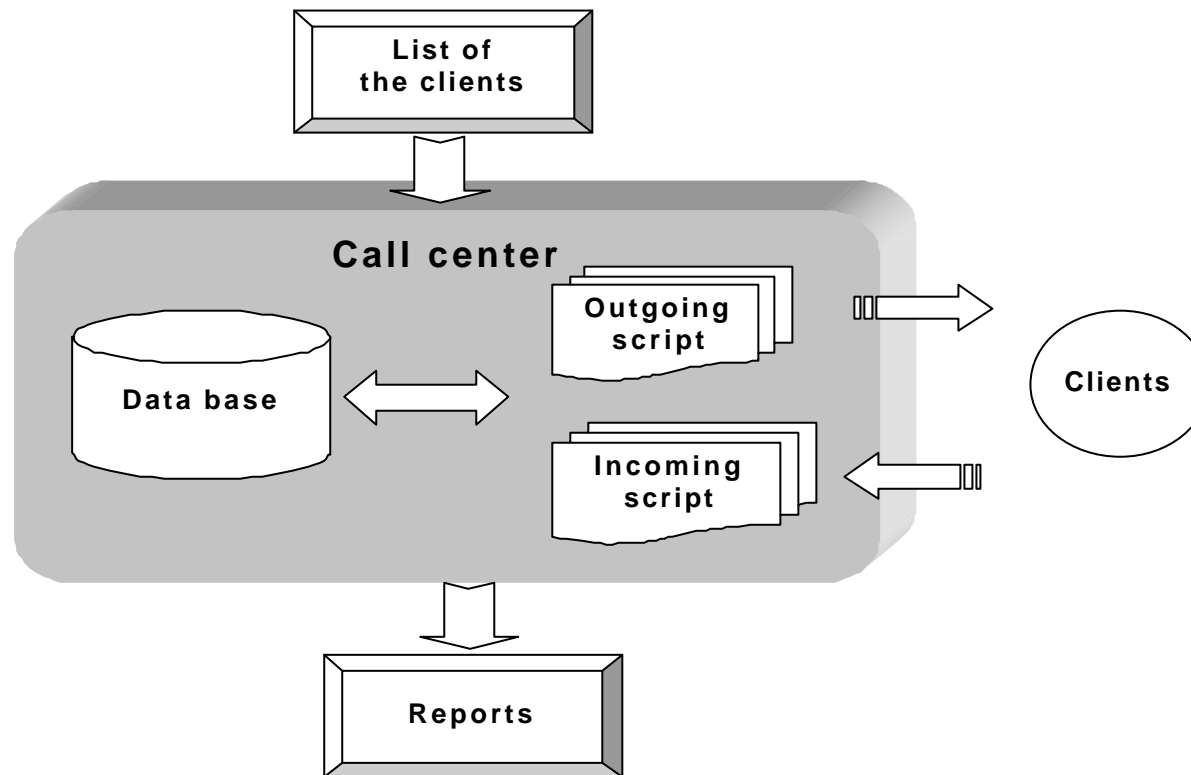
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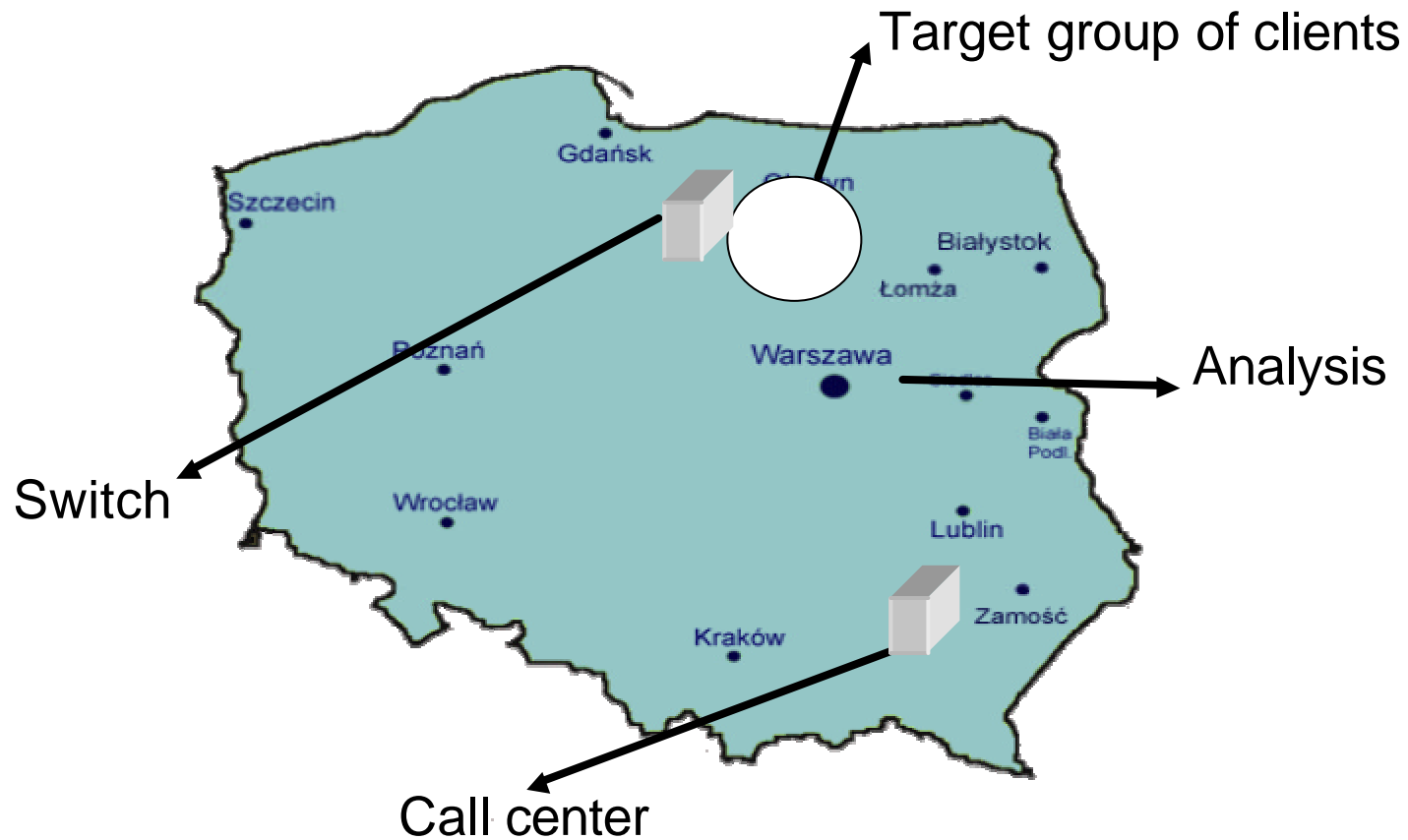
The goal

Selecting prospective clients for targeting a marketing campaign based on the existing data (call center data, billing data and others).

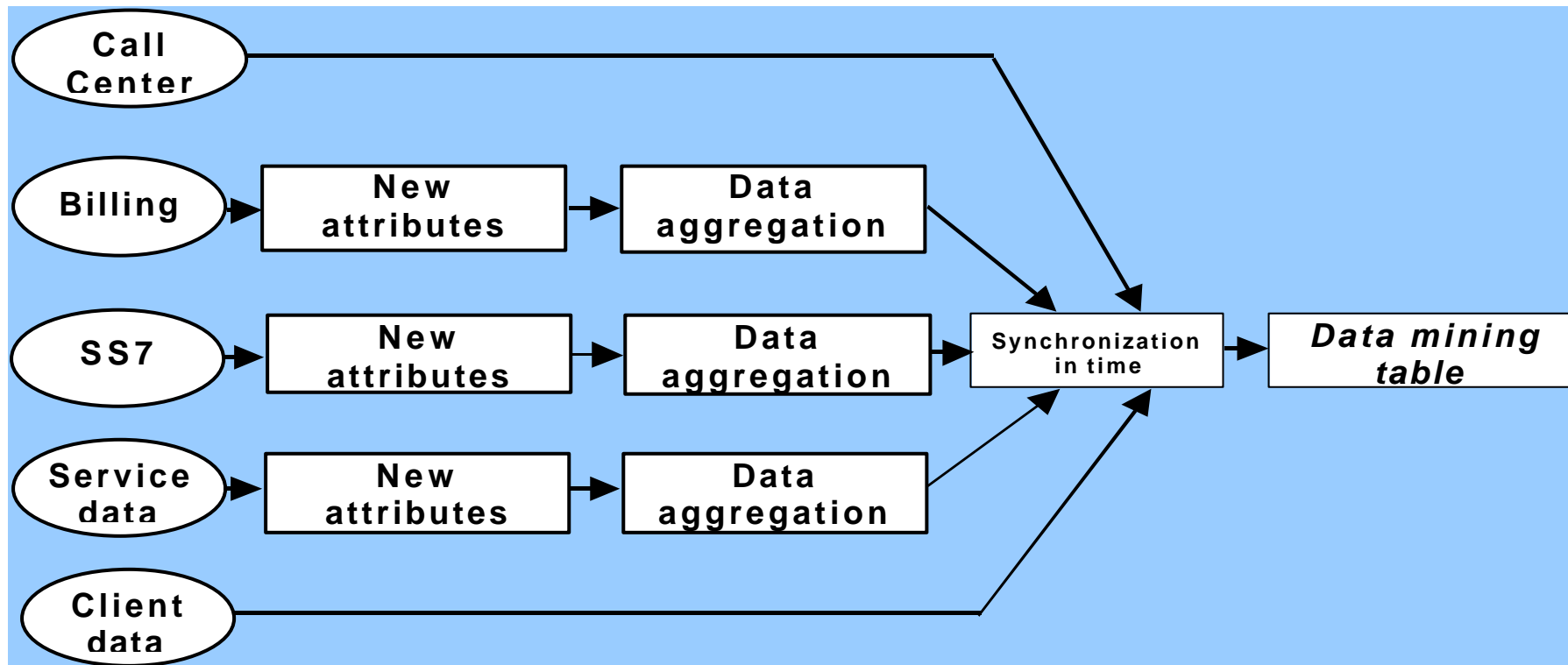
Model of the call center



The data is distributed

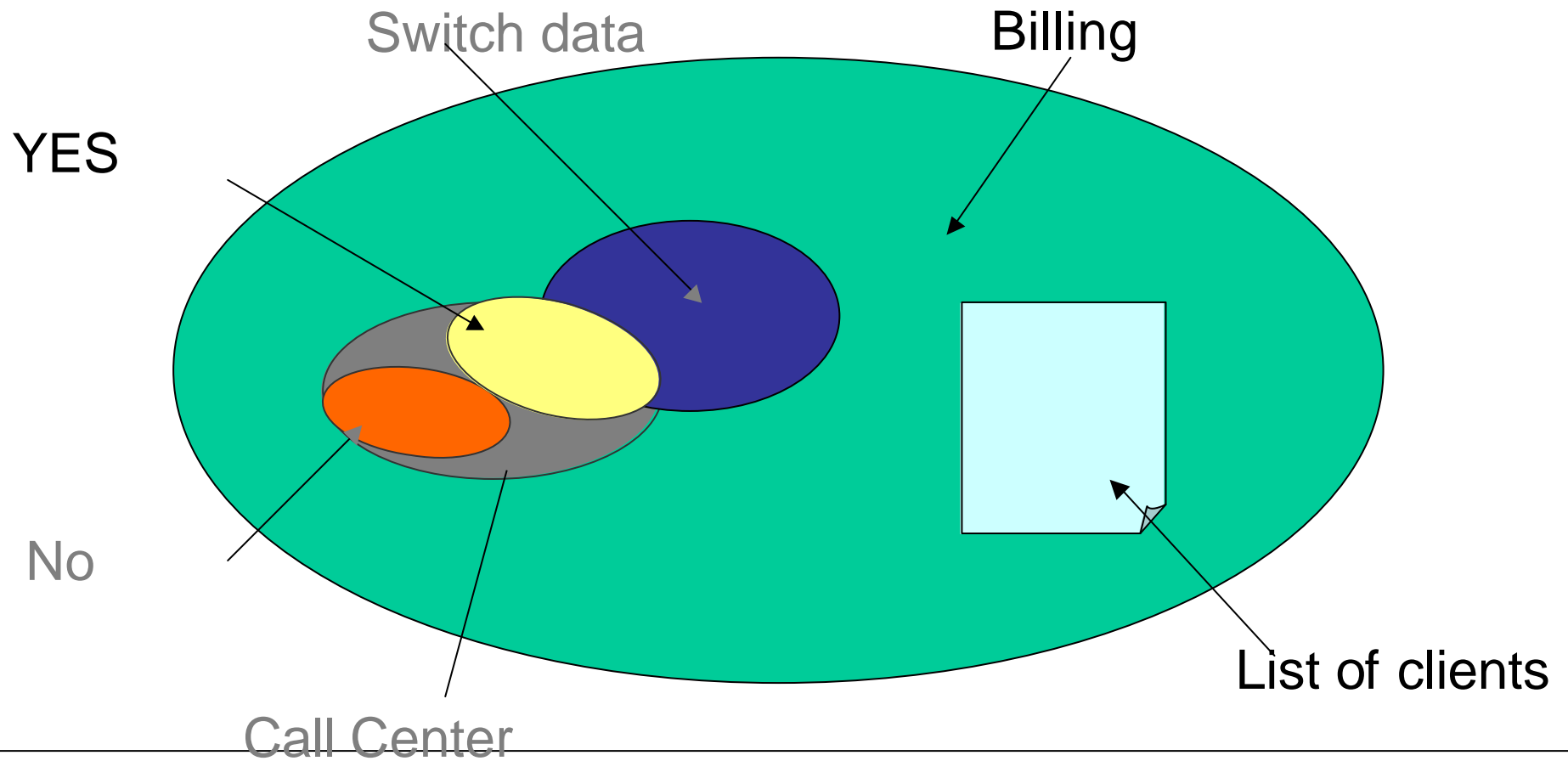


Process of building a table for data mining

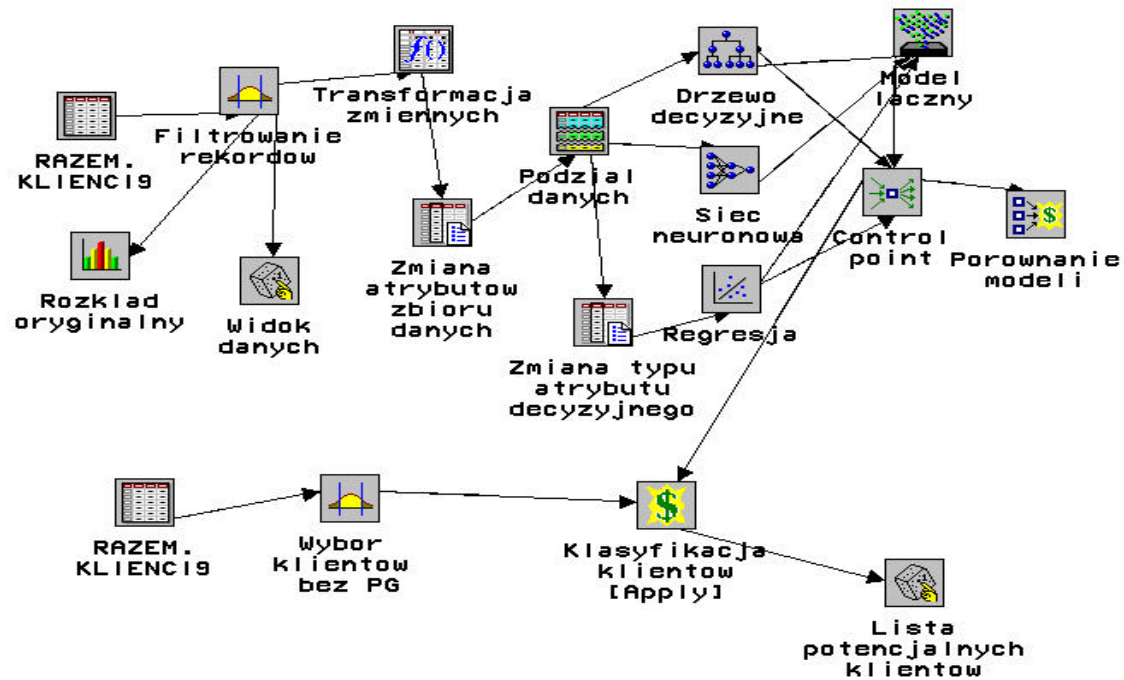




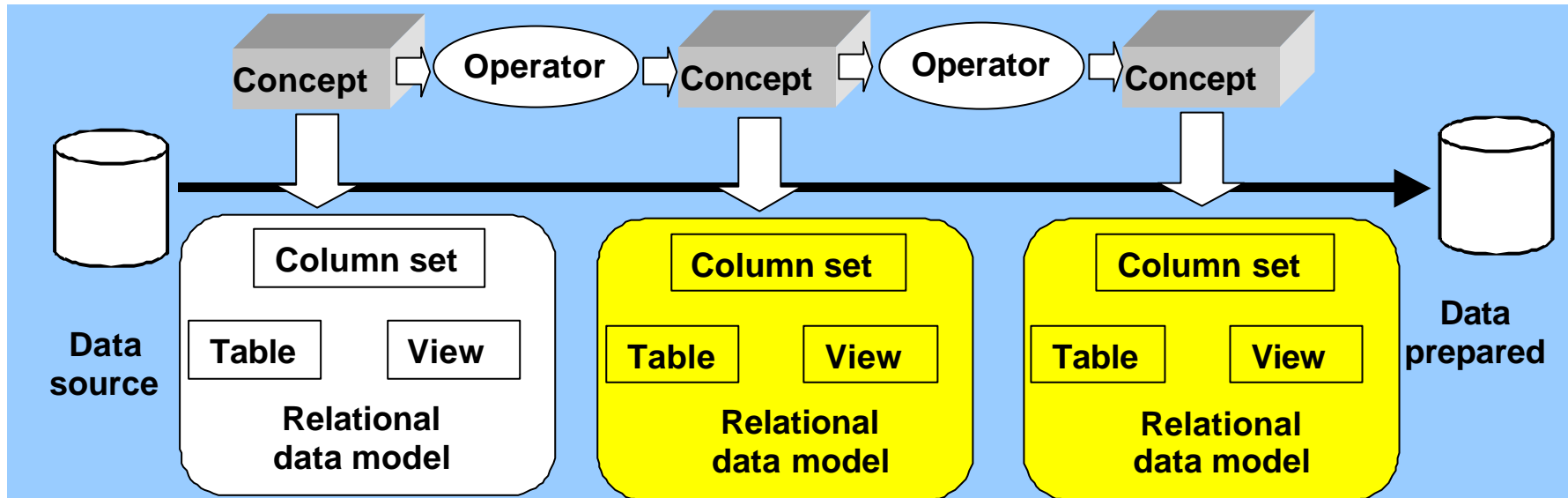
Classification of clients



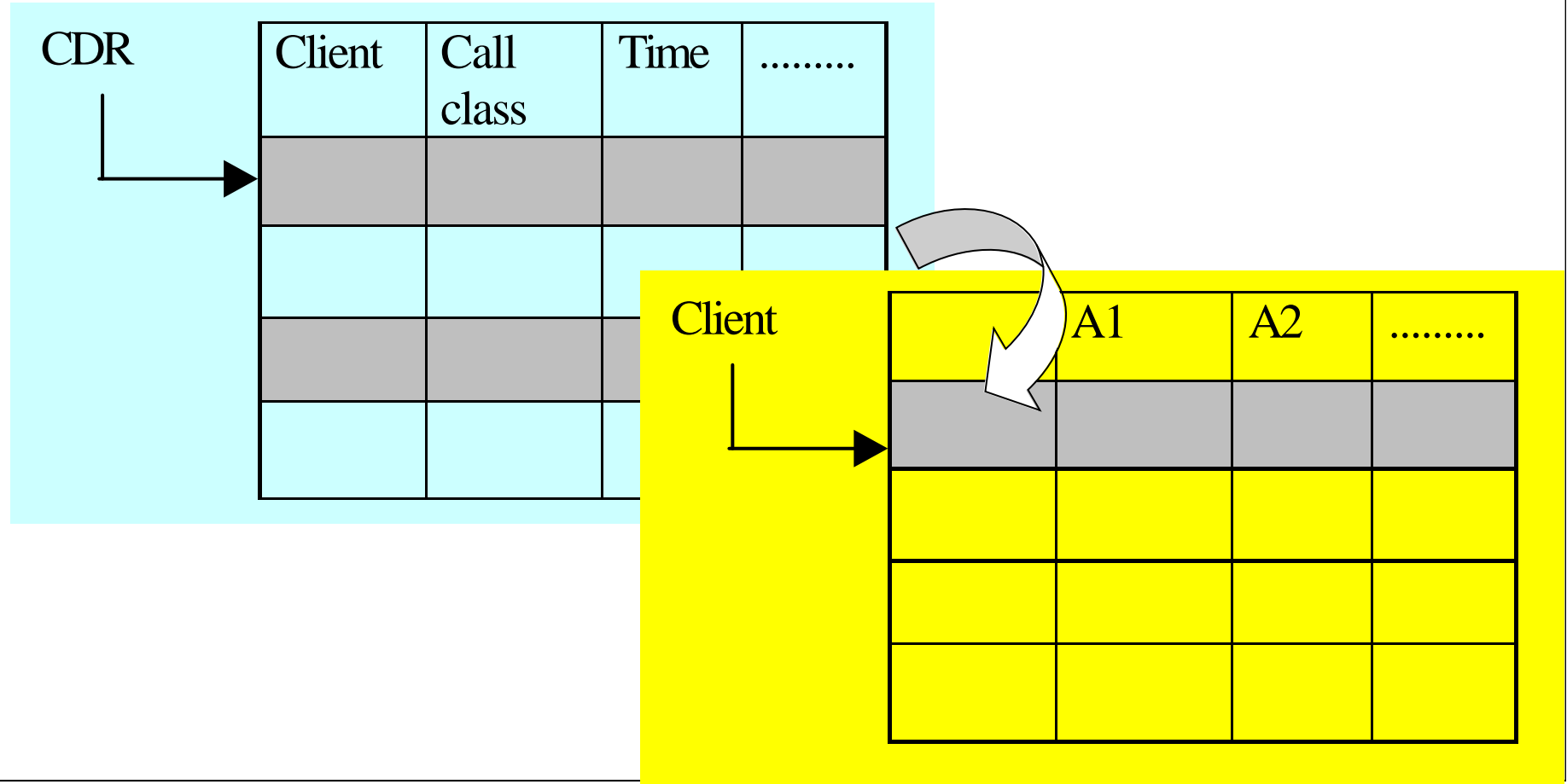
SAS Enterprise Miner



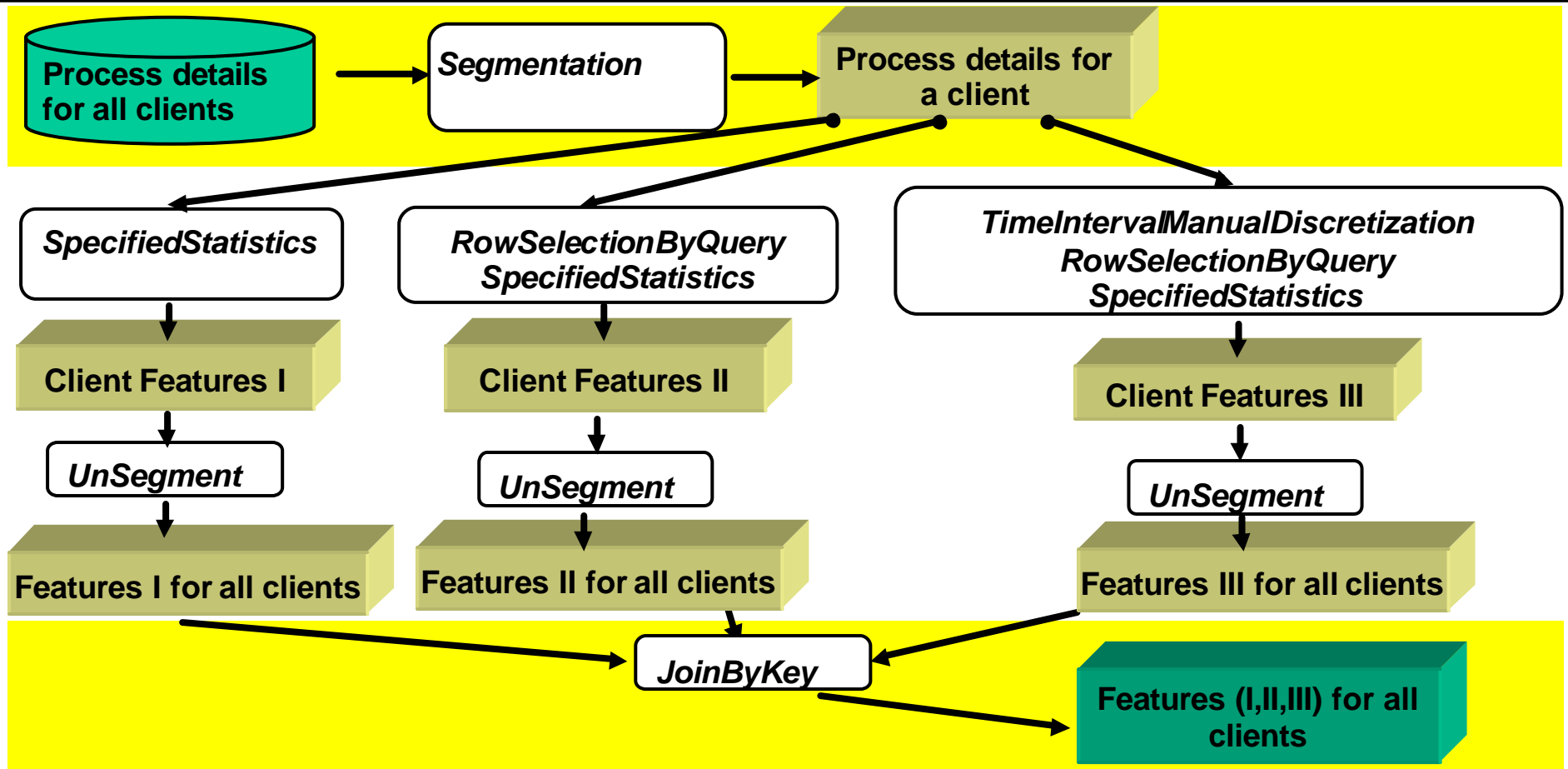
MiningMart requirements



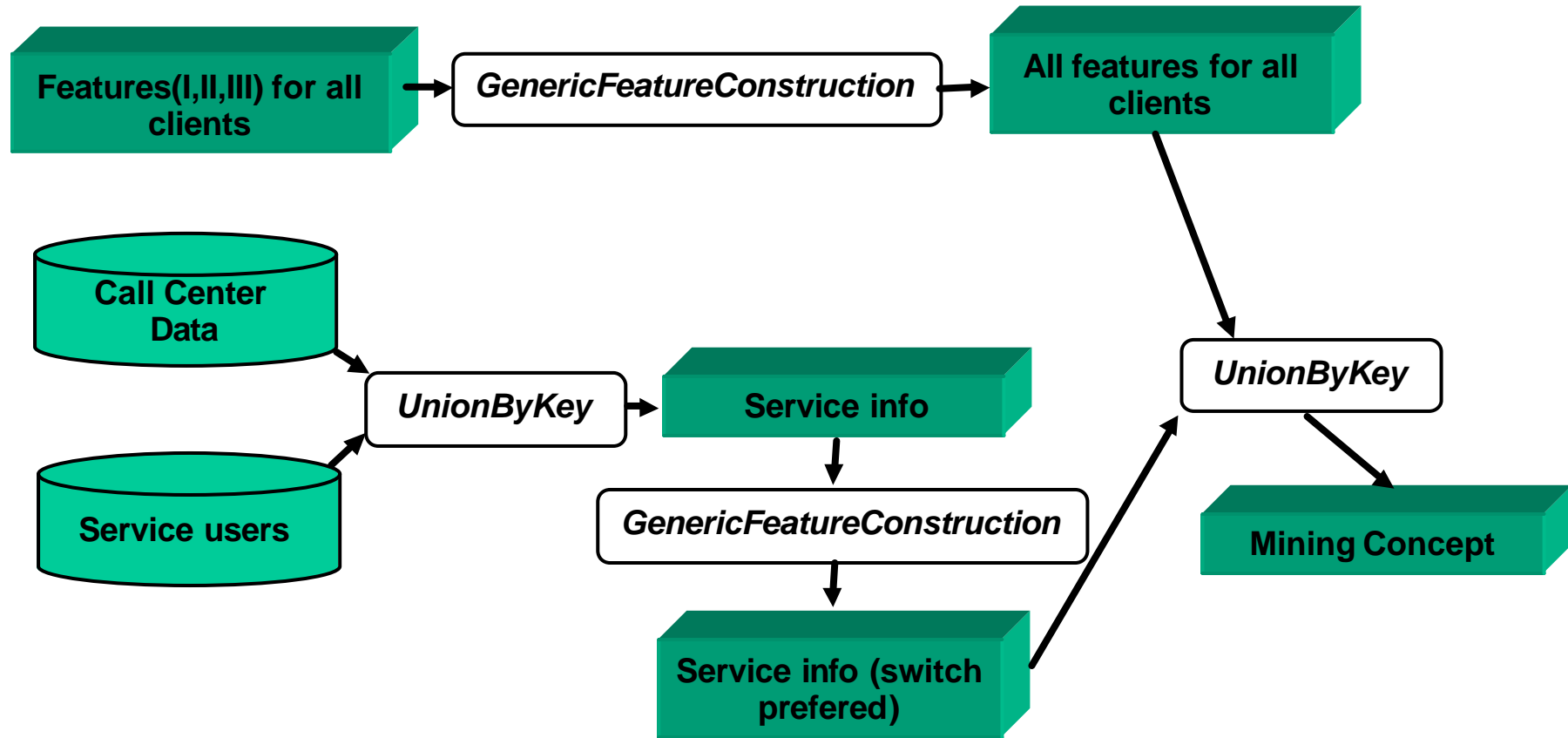
The set of operators



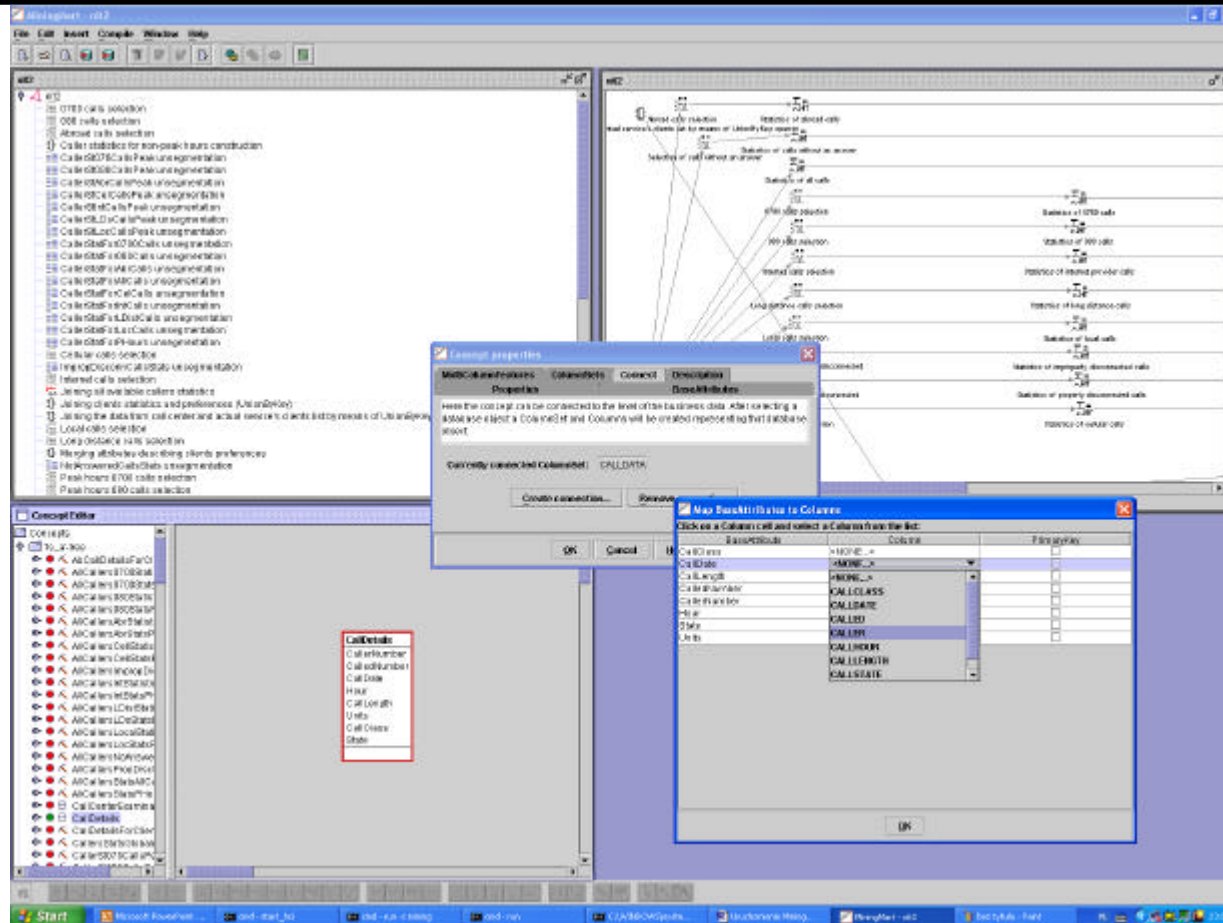
Preprocessing (part I)



Preprocessing (part II)



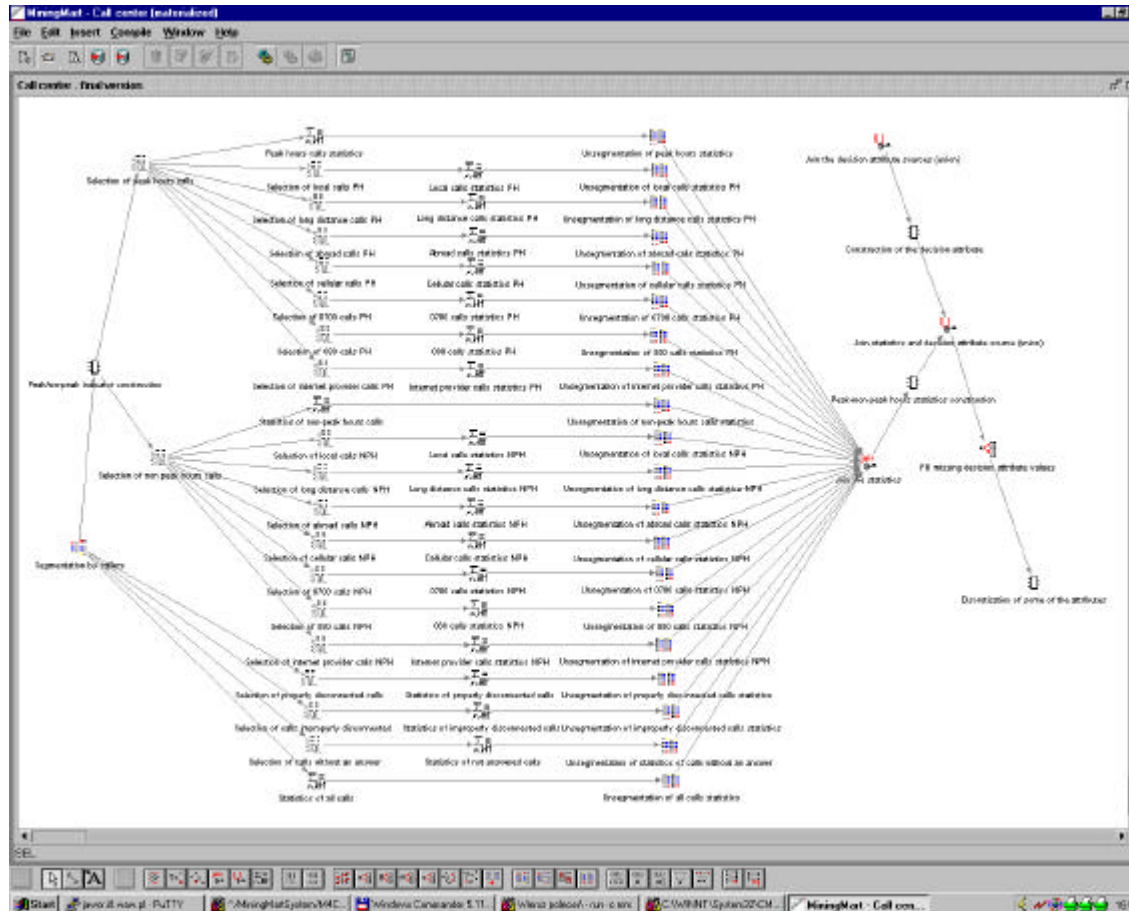
NIT case - HCI view



Business data

CALLER	CALLED	CALLDATE	CALLBOOR	CALLERNOY	CALLERNOY2	CALLCLASS	CALLSTATE
787336058	787336058	2000-10-06	2002-12-01	276	2 12	0	
660824262	660824262	2000-10-05	2002-12-01	124	12 19	0	
787168154	787168154	2000-10-30	2002-12-01	250	2 12	0	
0602089242	0602089242	2000-10-21	2002-12-01	180	6 19	0	
787475895	787475895	2000-10-18	2002-12-01	271	2 12	0	
787296494	787296494	2000-10-05	2002-12-01	283	2 12	0	
6605288614	6605288614	2000-10-05	2002-12-01	142	12 19	0	
6607045442	6607045442	2000-10-20	2002-12-01	186	12 19	0	
787309460	787309460	2000-10-18	2002-12-01	310	2 12	0	
787092112	787092112	2000-10-20	2002-12-01	211	2 12	0	
0801108435	0801108435	2000-10-21	2002-12-01	0	0 50	0	
091875543	091875543	2000-10-20	2002-12-01	303	0 14	0	
085618424	085618424	2000-10-01	2002-12-01	225	4 15	0	
787808972	787808972	2000-10-25	2002-12-01	284	2 12	0	
787128784	787128784	2000-10-16	2002-12-01	280	2 12	0	
787857366	787857366	2000-10-15	2002-12-01	277	2 12	0	
787289745	787289745	2000-10-07	2002-12-01	236	2 12	0	
029201000	029201000	2000-10-04	2002-12-01	210	0 15	0	
787458268	787458268	2000-10-10	2002-12-01	280	2 12	0	
787957987	787957987	2000-10-13	2002-12-01	190	2 12	0	
0801108435	0801108435	2000-10-18	2002-12-01	15	3 11	0	
787758951	787758951	2000-10-27	2002-12-01	294	2 12	0	
787905442	787905442	2000-10-17	2002-12-01	249	2 12	0	
787905442	787905442	2000-10-18	2002-12-01	320	2 12	0	
787338478	787338478	2000-10-18	2002-12-01	492	2 12	0	
787666610	787666610	2000-10-14	2002-12-01	252	2 12	0	
787338478	787338478	2000-10-18	2002-12-01	210	2 12	0	
086993200	086993200	2000-10-07	2002-12-01	305	0 14	0	
787864767	787864767	2000-10-01	2002-12-01	300	2 12	0	
0604014030	0604014030	2000-10-07	2002-12-01	180	12 19	0	
787148150	787148150	2000-10-22	2002-12-01	212	2 12	0	
071894624	071894624	2000-10-11	2002-12-01	235	0 14	0	
043675768	043675768	2000-10-20	2002-12-01	216	0 15	0	
787957987	787957987	2000-10-12	2002-12-01	229	2 12	0	
787498417	787498417	2000-10-18	2002-12-01	314	2 12	0	
6606792672	6606792672	2000-10-20	2002-12-01	127	6 19	0	
787802112	787802112	2000-10-27	2002-12-01	310	2 12	0	
787730681	787730681	2000-10-21	2002-12-01	320	2 12	0	
787508661	787508661	2000-10-24	2002-12-01	220	2 12	0	
091875543	091875543	2000-10-16	2002-12-01	211	0 14	0	
0607348216	0607348216	2000-10-21	2002-12-01	187	12 19	0	
077879612	077879612	2000-10-23	2002-12-01	220	0 14	0	
6605082295	6605082295	2000-10-06	2002-12-01	185	12 19	0	
787308527	787308527	2000-10-09	2002-12-01	221	2 12	0	
0601828495	0601828495	2000-10-09	2002-12-01	133	6 19	0	
071894624	071894624	2000-10-29	2002-12-01	219	0 15	0	
787323993	787323993	2000-10-24	2002-12-01	283	2 12	0	
787632129	787632129	2000-10-19	2002-12-01	243	2 12	0	
787666610	787666610	2000-10-13	2002-12-01	223	2 12	0	
6601779874	6601779874	2000-10-28	2002-12-01	131	12 19	0	
787296494	787296494	2000-10-28	2002-12-01	314	2 12	0	
787276995	787276995	2000-10-17	2002-12-01	262	2 12	0	
0602549847	0602549847	2000-10-15	2002-12-01	136	12 19	0	
787379810	787379810	2000-10-18	2002-12-01	230	2 12	0	
071378562	071378562	2000-10-13	2002-12-01	309	0 14	0	

NIT case – preprocessing steps



Conclusions

Conceptual modeling improves:

- the understanding of the data preparation process
- maintenance of the data preparation process
- Knowledge transfer for other people

We do not need to use programming language



Questions & discussion



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