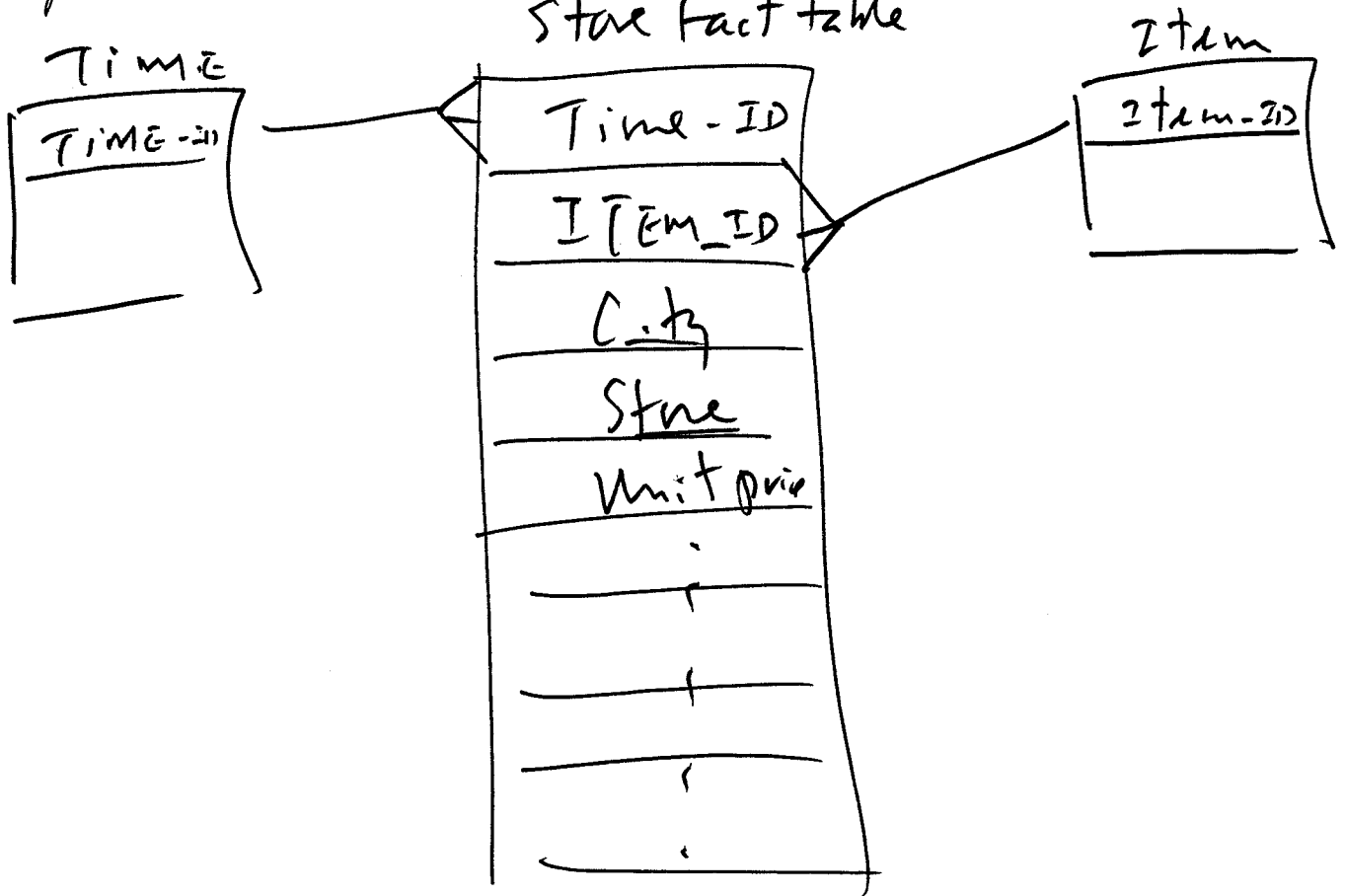
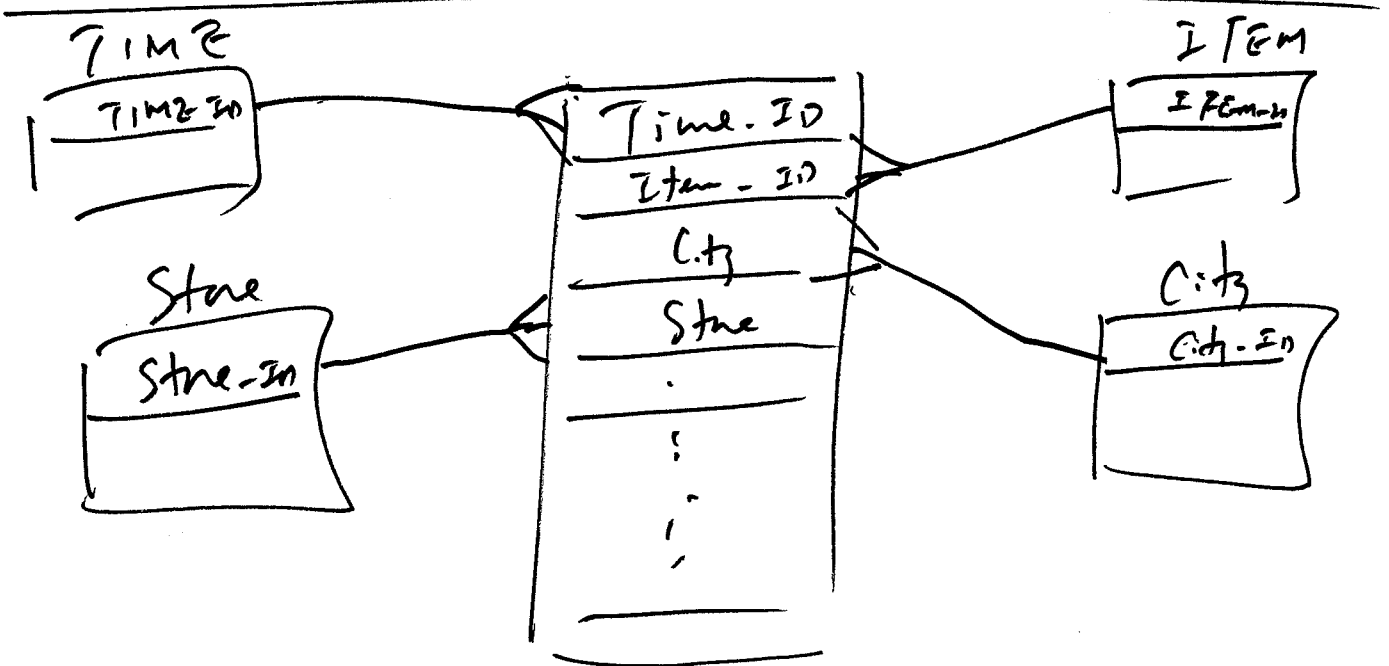


Project Report I Simple Star schema

Store Fact table



Multi-star schema



Simple Star schema

Steps for developing Data Warehouse

1.1 RDB \rightarrow EER

1.2 EER(1), EER(2) \rightarrow EER (integrated)

1.3 RDB_{Oracle} \rightarrow RDB_{MS SQL}

1.4 RDB_{MS SQL(1)}, RDB_{MS SQL(2)} \rightarrow RDB (integrated)

1.5 Fact table + dimension table(s)

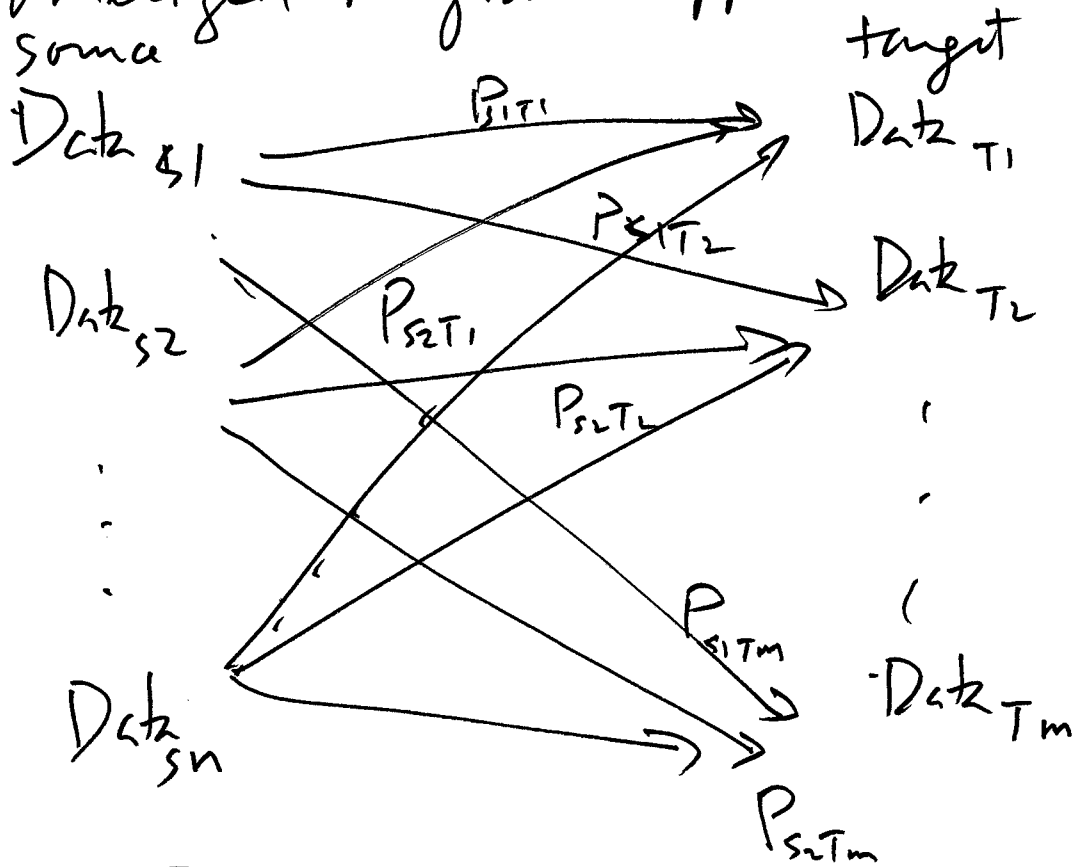
1.6 Data Extraction from source RDB(s)

1.7 Data Loading into data cube
{ (A) Stored Procedure with SQL
(B) Software facilities

1.8 OLAP $\left\{ \begin{array}{l} \text{MDX} \\ \text{SQL} \\ \text{Stored Procedure} \end{array} \right.$

1.9. Verification $\left\{ \begin{array}{l} \text{Drill through} \\ \text{SQL by source RDB} \end{array} \right.$

Customized Program Approach



needs P $m \times n$ Programs

Pros: Simple solution

Cons: too costly for one-time effort

Logical level approach

① pros: no need for physical data type conversion because all data type are defined in source & target database scheme

② In case of no compatible (incompatible) data type between source & target database, then use customized data type conversion.

Customized data type \rightarrow allow one to define data type

One must perform schema translation before data conversion.

ID \Rightarrow Inclusion Dependency

ID: Foreign key \subseteq Referred Primary key
~~data conversion logical level~~

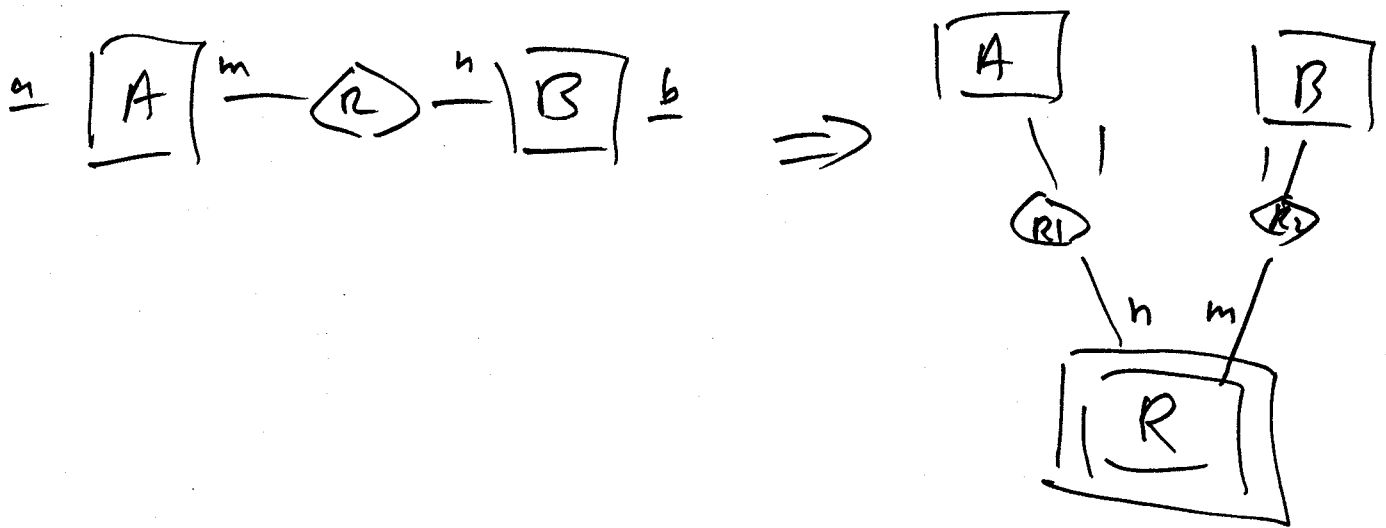
- ① Download data from source database
 - ② Upload downloaded data into target database by using SQL insert statement (portable) and SQL update statement to update the foreign key.
-

data integration

- ① data is integrated according to integrated schema
- ② Use Null to represent missing data
- ③ Foreign key is always on the "many" side.

Data Conversion from RDB into XML

- ① Read XML schema DTD from top down i.e. read root element first, followed by child elements down to the leave of the XML tree structure.
 - ② Load data from Relational table into correspondent XML element.
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