



# An Event-Driven Approach to Data Warehouse Design



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# An Event-Driven Approach to Data Warehouse Design

Introduction.....	2
Event 1 - Set-up Banks and Branches.....	3
Event 2 – Create a new Customer.....	4
Event 3 – Set-up a new Account.....	6
Event 4 – Issue a Credit Card .....	7
Event 5 – Customer deposits money in the Account .....	9
Event 6 – Customer uses new Card in a Retail Store .....	11
Event 7 – Bank issues a Monthly Statement.....	13
Event 8 – Customer Closes Account.....	15
What have we Learned ?.....	17

## Introduction

This Paper describes a simple Event-Driven Approach to Data Warehouse Design.

It also appears on our Database Answers Web Site with this Data Model for Retail Banks :-

- [http://www.databaseanswers.org/data\\_models/retail\\_banks/index.htm](http://www.databaseanswers.org/data_models/retail_banks/index.htm)

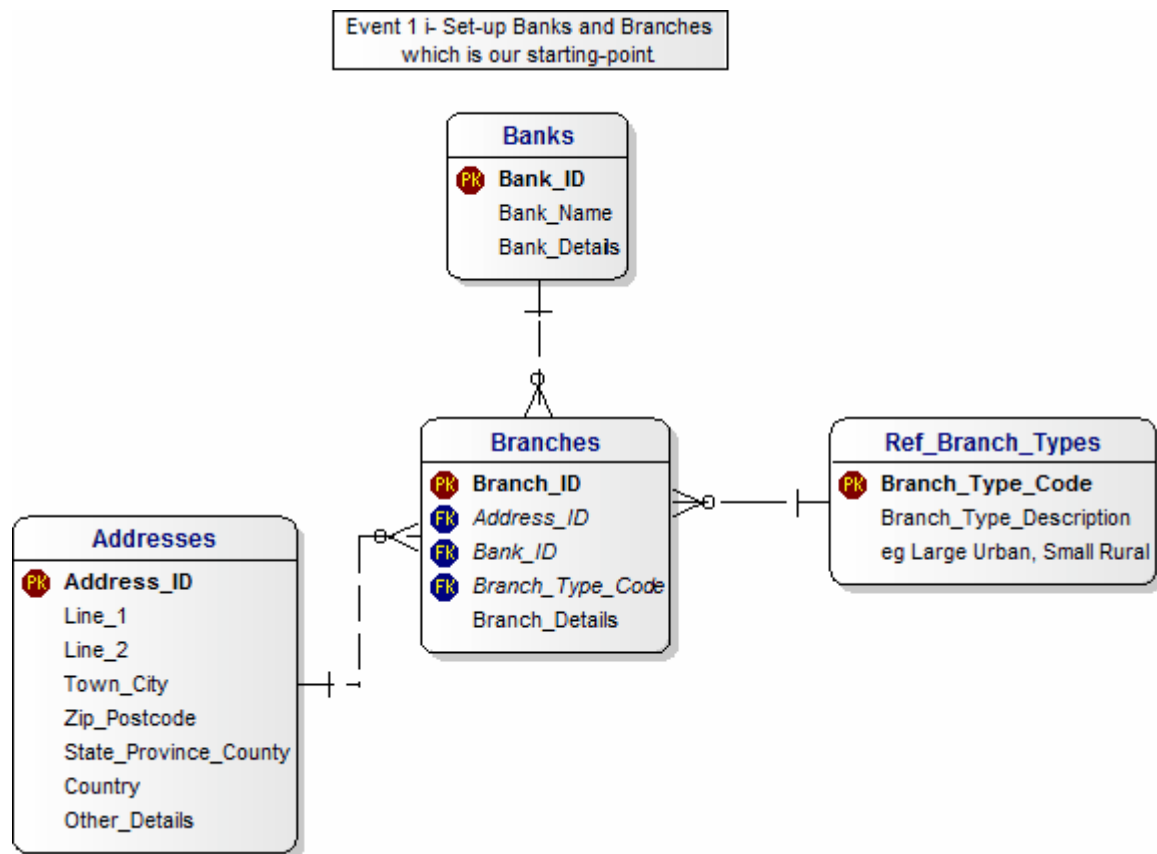
The Steps involved are as follows :-

- Identify the Events involved in the Life Cycle of important Entities
- Define a Message with data for each Event

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## Event 1 - Set-up Banks and Branches

We know that the Bank has Branches so we define our starting-point accordingly.



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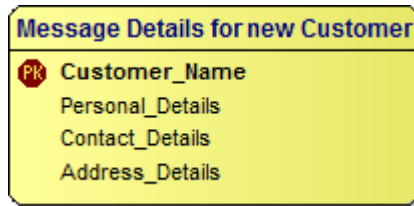
## Event 2 – Create a new Customer

The first Event is to create a Customer.

### 2.1 Message

The Message for this Event includes Personal, Contact and Address Details.

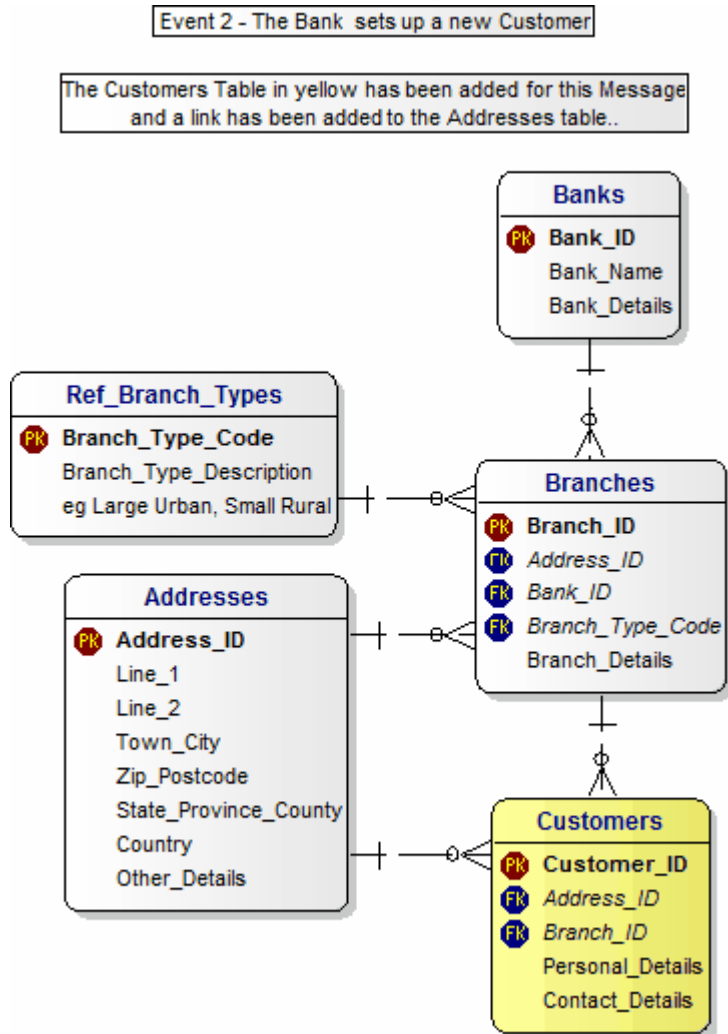
First we create a new Customers Entity, then match the Address to the Address Entity and add the Address\_ID field to the new Customers Entity.



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## 2.1 Enhance the Data Warehouse

This diagram shows the new Customers Entity in yellow.



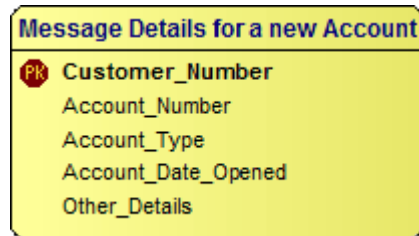
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## Event 3 – Set-up a new Account

The second Event is to set-up a new Account.

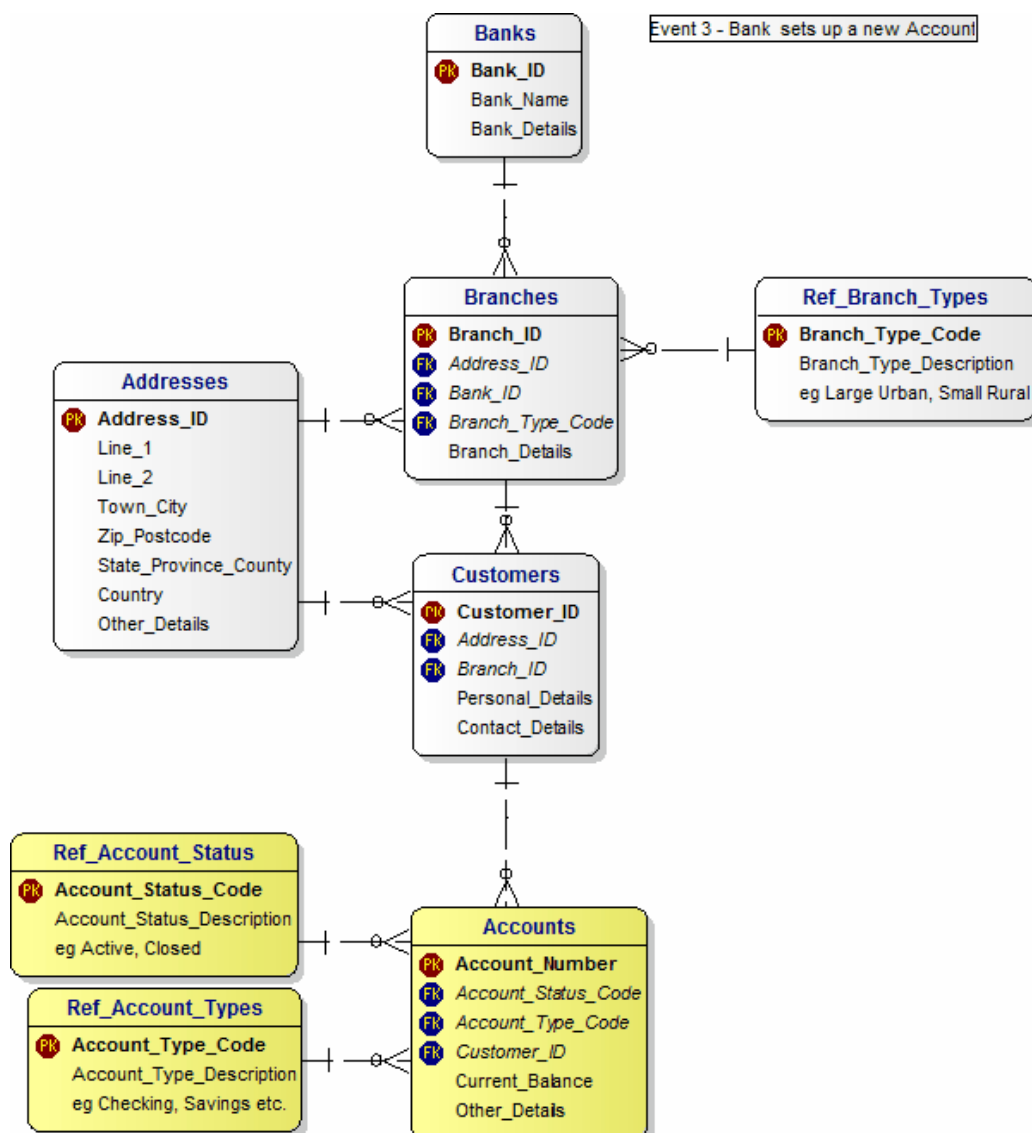
### 3.1 Message

The Message for this Event includes the data required to set up a new Account.



### 3.2 Enhance the Data Warehouse

This diagram shows the new Accounts Entity in yellow.



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## Event 4 – Issue a Credit Card

The fourth Event is to issue a Credit Card.

### 4.1 Message

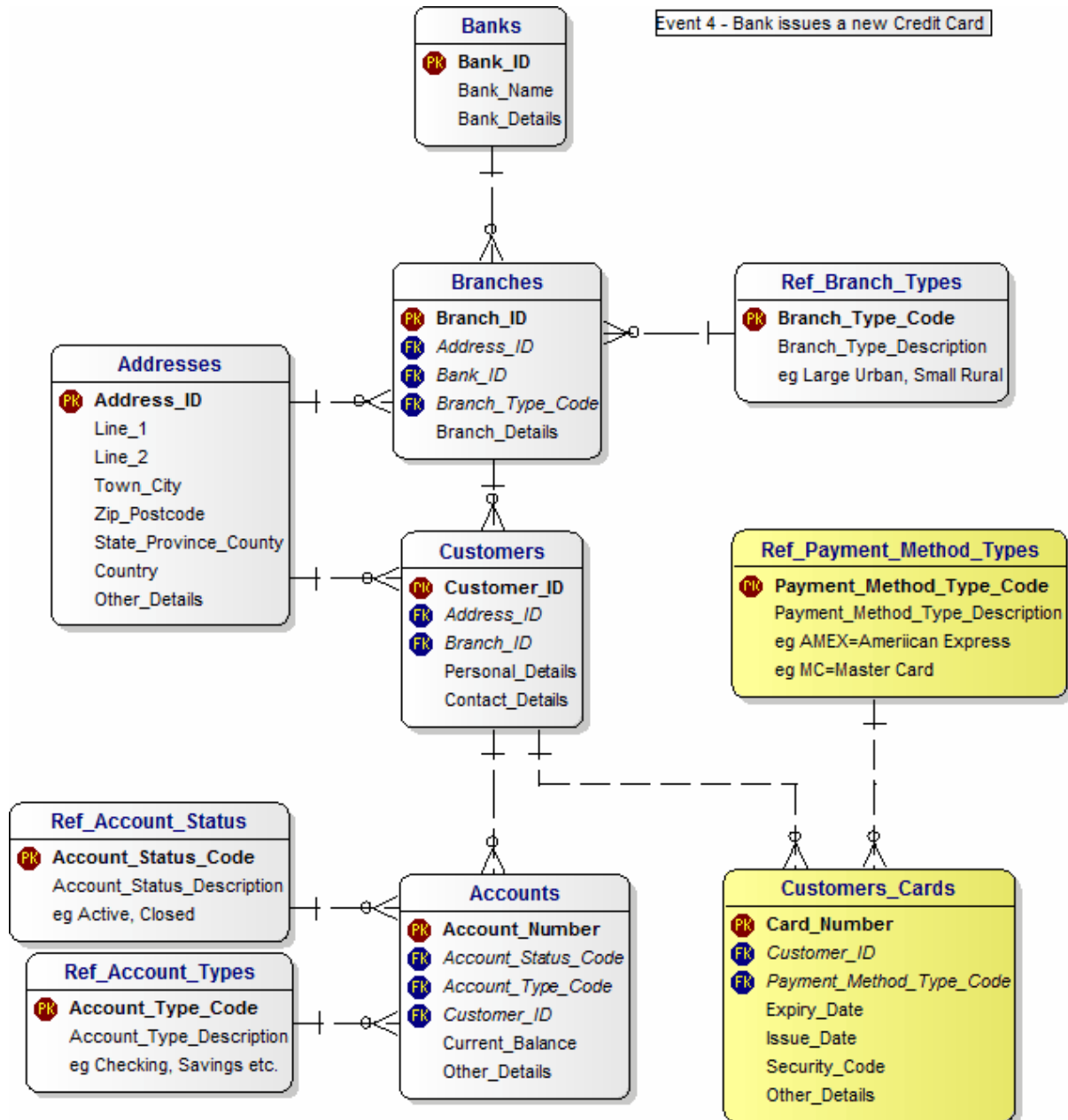
The Message for this Event includes the Credit Card number and type and the Account Number that the Card is associated with, and the opening date and expiry dates

Message Details for a new Credit Card
Card_Number
Customer_Number
Payment_Method_Type_Code
Expiry_Date
Issue_Date
Security_Code
Other_Details

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## 4.2 Enhance the Data Warehouse

This diagram shows the two new Entities in yellow.





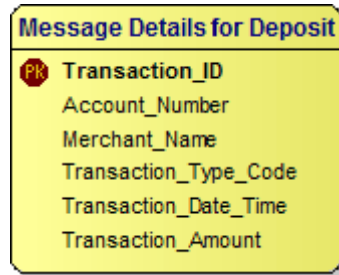
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## Event 5 – Customer deposits money in the Account

The fifth Event is for the Customer to deposit money into the new Account.

### 5.1 Message

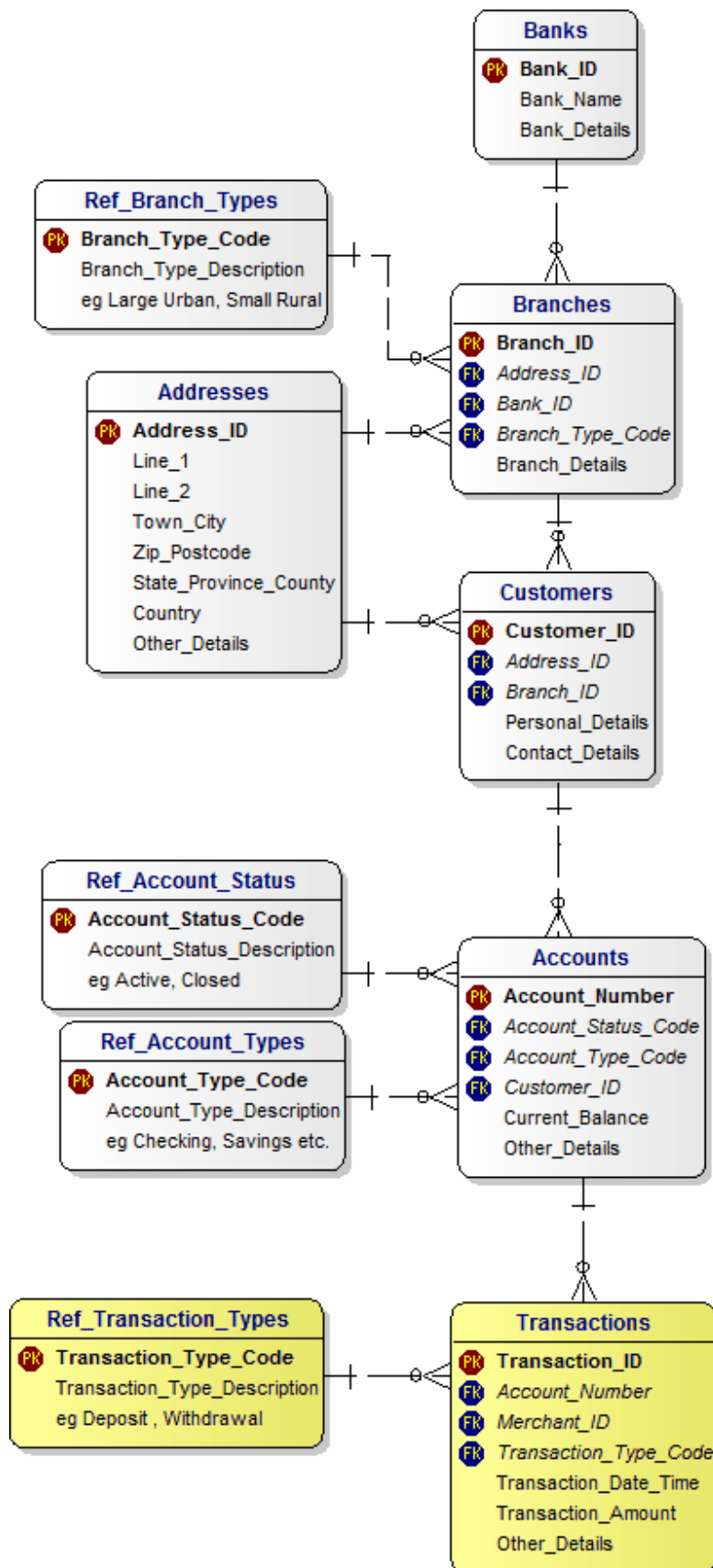
The Message for this Event includes the Account number, the date and the amount of the deposit



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## 5.2 Enhance the Data Warehouse

This diagram shows the new Transactions Entity in yellow.



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## Event 6 – Customer uses new Card in a Retail Store

### 6.1 Message

The Message for this Event includes the Card Number, Merchant Name, Amount, Date and Time of Purchase.

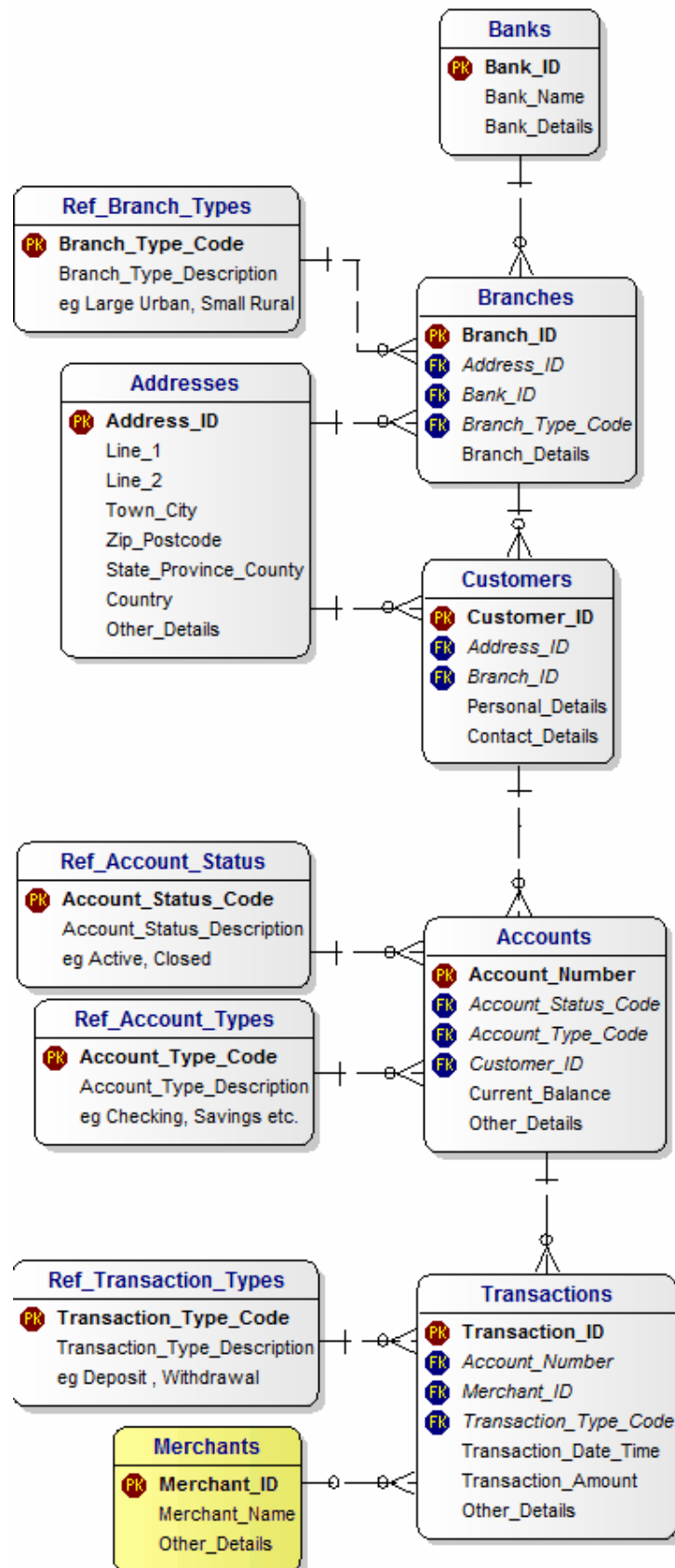
The Message Details shows the data that is printed on a typical Sales Receipt for a purchase in a retail store.

Message Details for Sales Receipt
Receipt_ID
Merchant_Name
Purchase_Date_Time
Purchase_Amount
Card_Number_last_4_digits
Other_Details

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## 6.2 Enhance the Data Warehouse

This diagram shows the new Merchants Entity in yellow.



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## Event 7 – Bank issues a Monthly Statement

### 7.1 Message

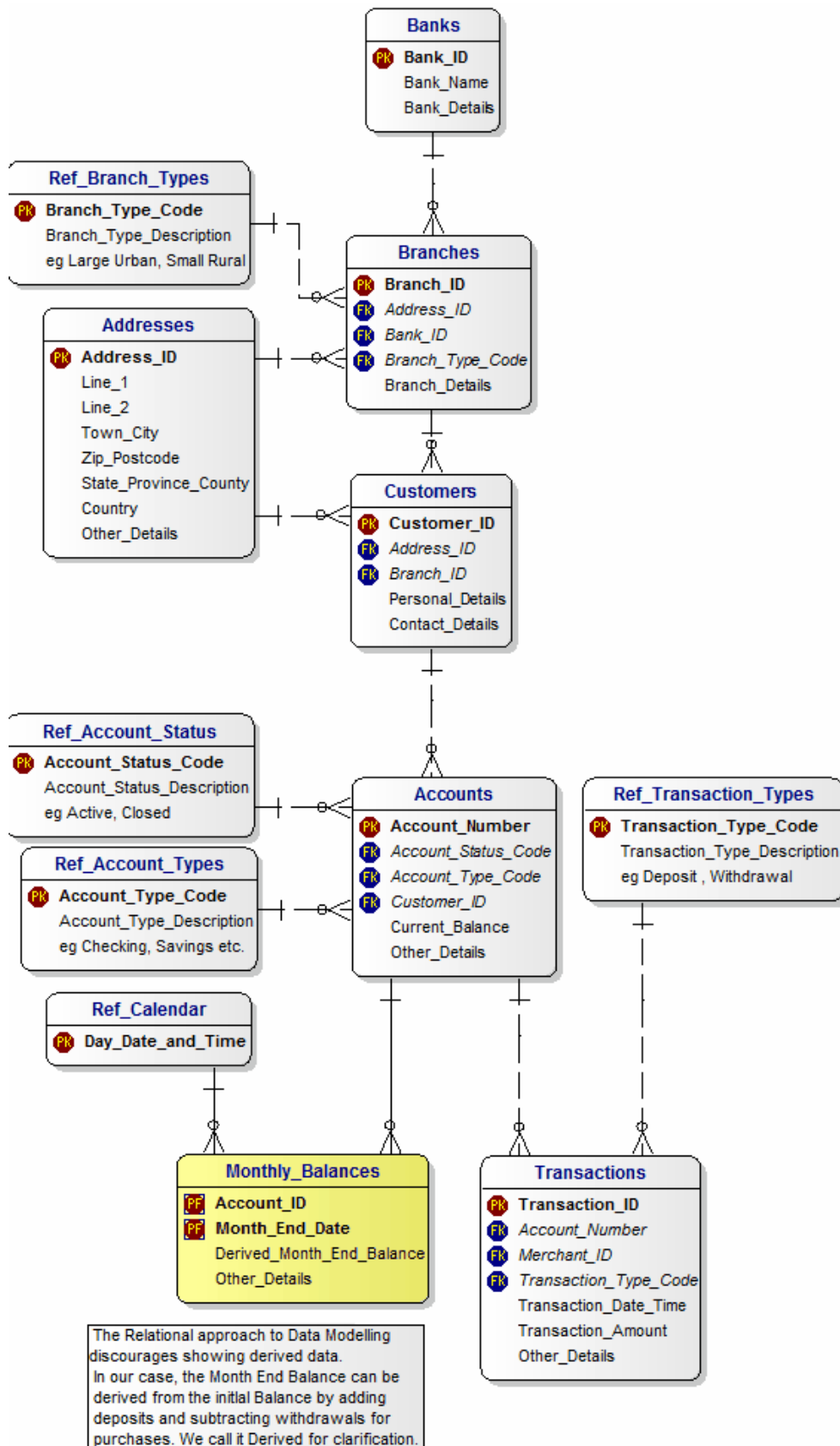
The Message for this Event includes Customer name, Account Number, Date and Amount of Statement.

Message Details for a Monthly Statement
Customer Name
Account_Number
Month_End_Date
Derived_Month_End_Balance
Other_Details

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## 7.2 Enhance the Data Warehouse

This diagram shows the new Monthly Balance Entity in yellow.



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## Event 8 – Customer Closes Account

### 8.1 Message

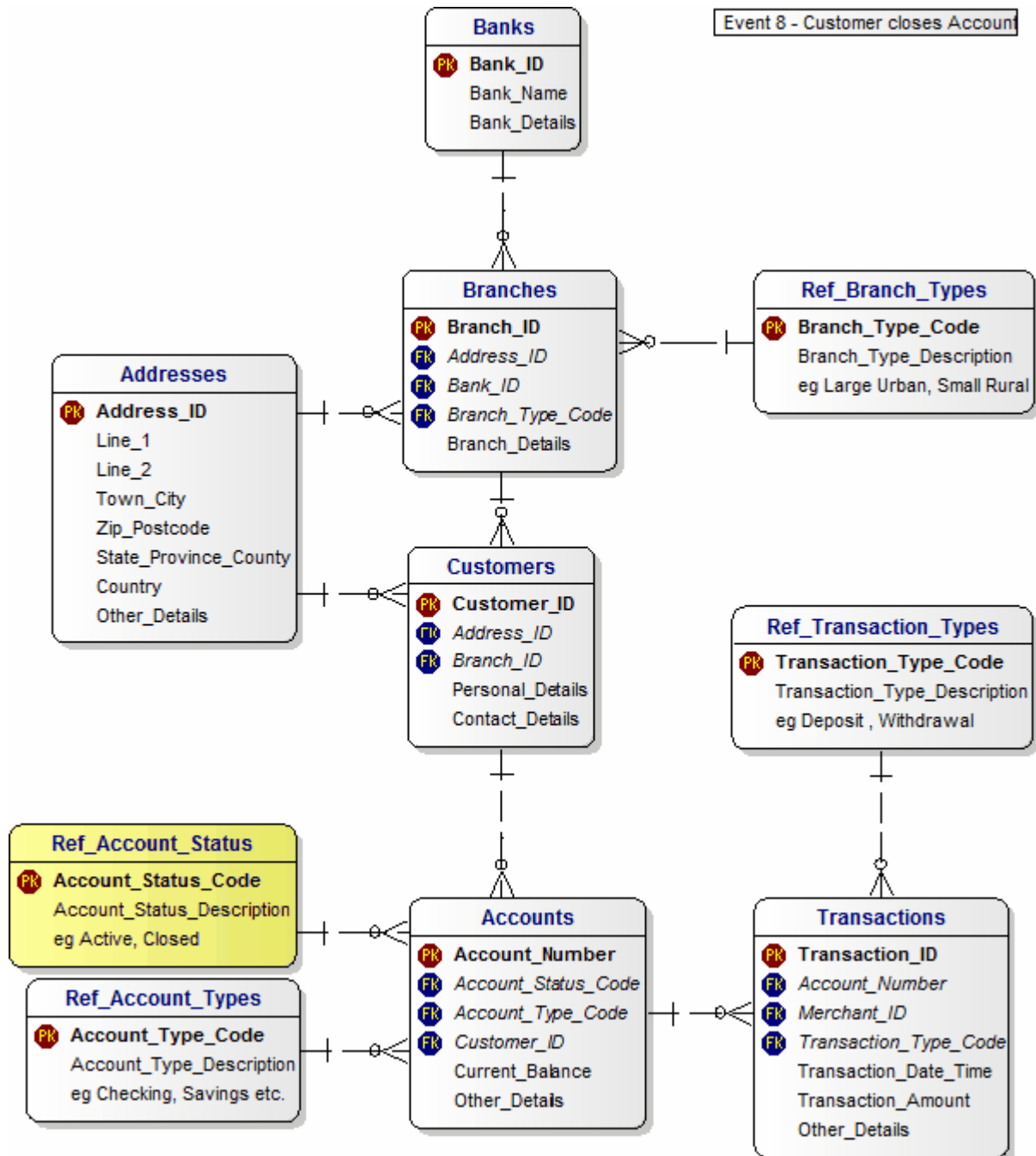
The Message for this Event includes Account Number and Date to be Closed.

Message Details for closing an Account
Event : Change Account Status
Account Number
New Account Status Code
Date to be Closed

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## 8.2 Enhance the Data Warehouse

This diagram shows the new Account Status Entity in yellow.





## **An Event-Driven Approach to Data Warehouse Design**

### **What have we Learned ?**

In this Tutorial we have learned how to follow a simple Step-by-Step approach to the design of a Third Normal Form Data Warehouse.

We would work with the business users and Subject Matter Experts to establish the important Events and then to agree the data items that should appear in each Message.

Our starting-point is that we know the Approach because we have used it before.

Therefore we might consider running Facilitated Workshops to guide users to a successful conclusion.