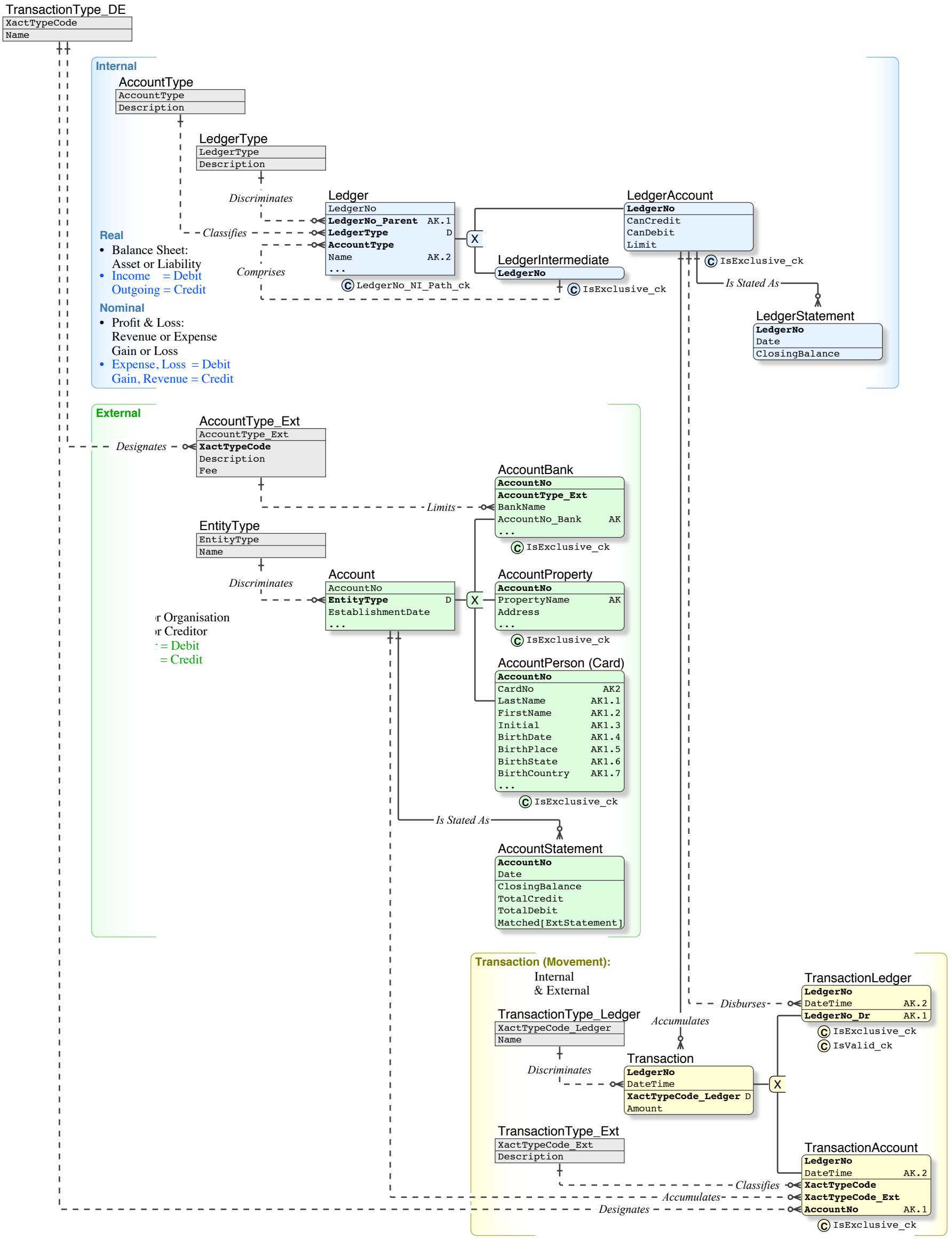
Data Model



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Data Model • Detail

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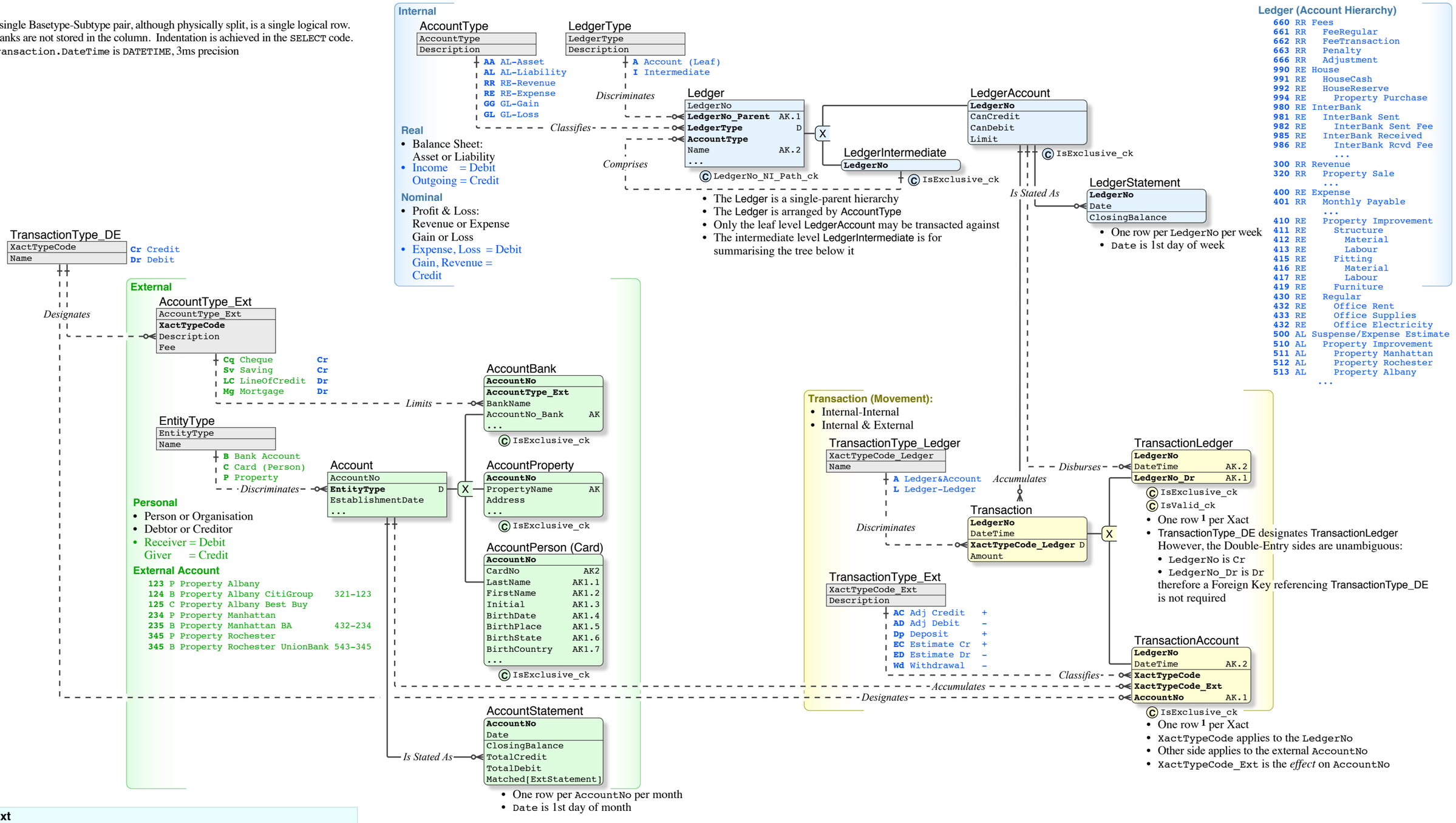
Note

1 A single Basetype-Subtype pair, although physically split, is a single logical row.
2 Blanks are not stored in the column. Indentation is achieved in the `SELECT` code.
3 `Transaction.DateTime` is `DATETIME`, 3ms precision



Context

- There are three levels of Q & A that are involved. Nevertheless, I have attempted to maintain the whole in three increments
- Following StackOverflow rules, each Answer is limited to the context of the Question. Each Answer includes a data model

1 **Derived account balance vs stored account balance for a simple bank account**
2 **Relational model for double entry accounting**
3 **Relational model for double entry accounting with Job Costing**
This third level data model provides the full Accounting context:
- the Ledger is a fully expanded single-parent hierarchy
  Refer to **Hierarchy** for a full definition of Relational Hierarchies
- Transaction is further Normalised
- Account is further Normalised
- All `CONSTRAINTS` are shown

```
AccountBank.IsExclusive_ck
    CHECK ( Account_IsExclusive_fn( AccountNo, "B" ) = 1 )
AccountPerson.IsExclusive_ck
    CHECK ( Account_IsExclusive_fn( AccountNo, "P" ) = 1 )
AccountProperty.IsExclusive_ck
    CHECK ( Account_IsExclusive_fn( AccountNo, "p" ) = 1 )
LedgerAccount.IsExclusive_ck
    CHECK ( Ledger_IsExclusive_fn( LedgerNo, "A" ) = 1 )
LedgerIntermediate.IsExclusive_ck
    CHECK ( Ledger_IsExclusive_fn( LedgerNo, "I" ) = 1 )
```

```
LedgerNo_NI_Path_ck
    CHECK LedgerNo NOT IN Ledger_Path_fn( LedgerNo_Parent )
TransactionAccount.IsExclusive_ck
    CHECK ( Transaction_IsExclusive_fn( LedgerNo, "A" ) = 1 )
TransactionLedger.IsExclusive_ck
    CHECK ( Transaction_IsExclusive_fn( LedgerNo, "L" ) = 1 )
TransactionLedger.IsValid_ck
    CHECK ( TransactionLedger_IsValid_fn( LedgerNo, LedgerNo_Dr ) = 1 )
    -- check LedgerNo NE LedgerNo_Dr
    -- check LedgerNo & LedgerNo_Dr are valid re CanCredit/CanDebit
```

Table Type
Ledger (Internal)
Account (External)
Transaction

Internal `PrimaryKey` `AlternateKey`
External `PrimaryKey` `AlternateKey` Attribute `Attribute`

IDEF1X Notation

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Data Model • Batch

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1 A single Basetype-Subtype pair, although physically split, is a single logical row.
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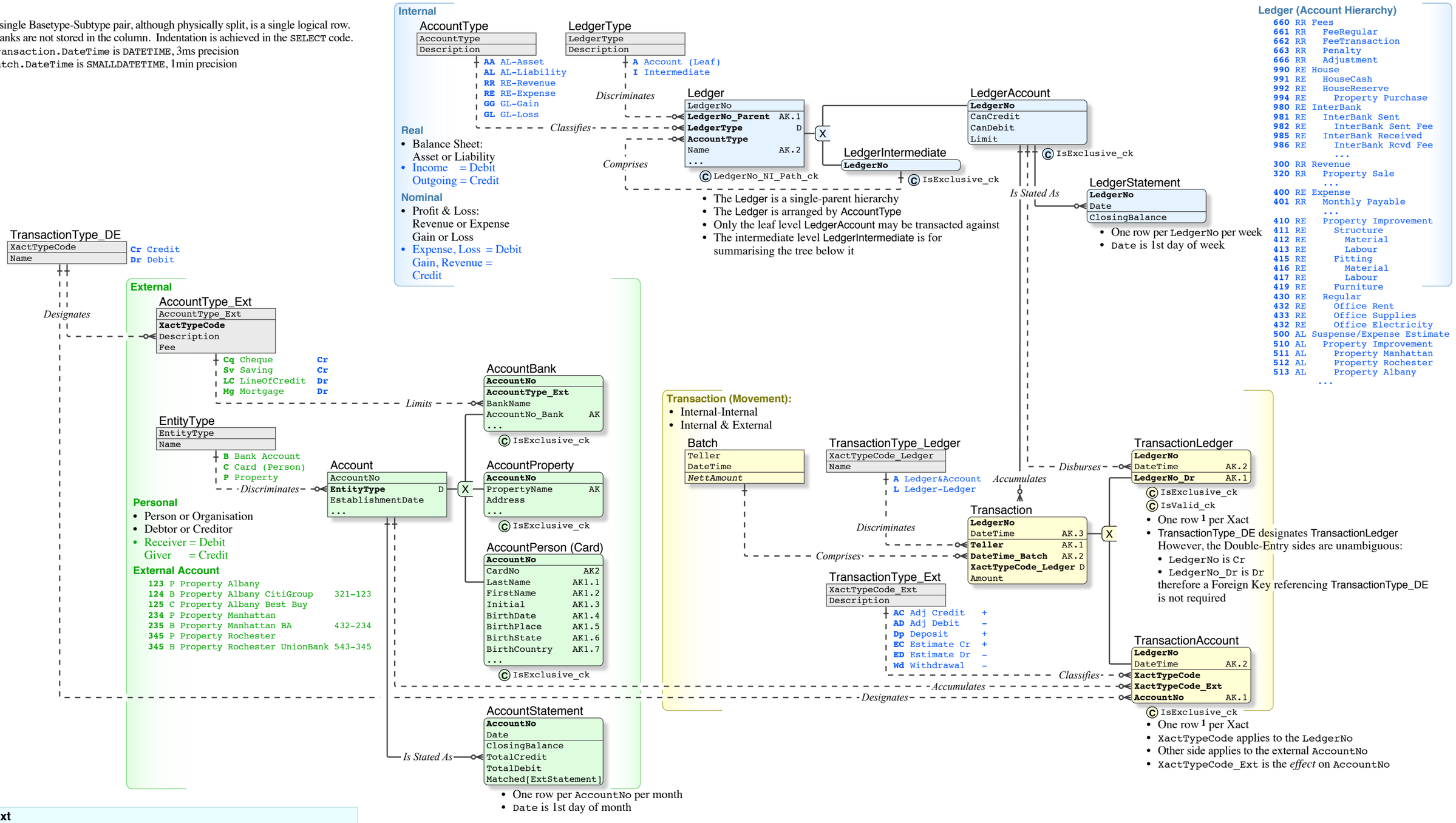
3 `Transaction.DateTime` is `DATETIME`, 3ms precision
4 `Batch.DateTime` is `SMALLDATETIME`, 1min precision



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LedgerAccount.IsExclusive_ck
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LedgerIntermediate.IsExclusive_ck
    CHECK ( Ledger_IsExclusive_fn( LedgerNo, "I" ) = 1 )
```

```
LedgerNo_NI_Path_ck
    CHECK LedgerNo NOT IN Ledger_Path_fn( LedgerNo_Parent )
TransactionAccount.IsExclusive_ck
    CHECK ( Transaction_IsExclusive_fn( LedgerNo, "A" ) = 1 )
TransactionLedger.IsExclusive_ck
    CHECK ( Transaction_IsExclusive_fn( LedgerNo, "L" ) = 1 )
TransactionLedger.IsValid_ck
    CHECK ( TransactionLedger_IsValid_fn( LedgerNo, LedgerNo_Dr ) = 1 )
    -- check LedgerNo NE LedgerNo_Dr
    -- check LedgerNo & LedgerNo_Dr are valid re CanCredit/CanDebit
```

Table Type
Ledger (Internal)
Account (External)
Transaction

Internal: `PrimaryKey` `AlternateKey`
External: `PrimaryKey` `AlternateKey` `Attribute`

IDEF1X Notation

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