

10 - DOMAIN MODEL: VISUALIZING CONCEPTS

Conceptual Class Category	Examples
physical or tangible objects	<i>Register</i> <i>Airplane</i>
specifications, designs, or descriptions of things	<i>ProductSpecification</i> <i>FlightDescription</i>
places	<i>Store</i> <i>Airport</i>
transactions	<i>Sale, Payment</i> <i>Reservation</i>
transaction line items	<i>SalesLineItem</i>
roles of people	<i>Cashier</i> <i>Pilot</i>
containers of other things	<i>Store, Bin</i> <i>Airplane</i>
things in a container	<i>Item</i> <i>Passenger</i>
other computer or electro-mechanical systems external to the system	<i>CreditPaymentAuthorizationSystem</i> <i>AirTrafficControl</i>
abstract noun concepts	<i>Hunger</i> <i>Acrophobia</i>
organizations	<i>SalesDepartment</i> <i>ObjectAirline</i>
events	<i>Sale, Payment, Meeting</i> <i>Flight, Crash, Landing</i>
processes (often <i>not</i> represented as a concept, but may be)	<i>SellingAProduct</i> <i>BookingASeat</i>
rules and policies	<i>RefundPolicy</i> <i>CancellationPolicy</i>
catalogs	<i>ProductCatalog</i> <i>PartsCatalog</i>

CONCEPTUAL CLASS IDENTIFICATION

Conceptual Class Category	Examples
records of finance, work, contracts, legal matters	<i>Receipt, Ledger, EmploymentContract MaintenanceLog</i>
financial instruments and services	<i>LineOfCredit Stock</i>
manuals, documents, reference papers, books	<i>DailyPriceChangeList RepairManual</i>

Table 10.1 Conceptual Class Category List.

### *Finding Conceptual Classes with Noun Phrase Identification*

Another useful technique (because of its simplicity) suggested in [Abbot83] is linguistic analysis: identify the nouns and noun phrases in textual descriptions of a domain, and consider them as candidate conceptual classes or attributes.

Care must be applied with this method; a mechanical noun-to-class mapping isn't possible, and words in natural languages are ambiguous.

Nevertheless, it is another source of inspiration. The fully dressed use cases are an excellent description to draw from for this analysis. For example, the current scenario of the *Process Sale* use case can be used.

**Main Success Scenario (or Basic Flow):**

1. **Customer** arrives at a **POS checkout** with **goods** and/or **services** to purchase.
2. **Cashier** starts a new **sale**.
3. **Cashier** enters **item identifier**.
4. System records **sale line item** and presents **item description, price**, and running **total**. Price calculated from a set of price rules.  
Cashier repeats steps 2-3 until indicates done.
5. System presents total with **taxes** calculated.
6. Cashier tells Customer the total, and asks for **payment**.
7. Customer pays and System handles payment.
8. System logs the completed **sale** and sends sale and payment information to the external **Accounting** (for accounting and **commissions**) and **Inventory** systems (to update inventory).
9. System presents **receipt**.
10. Customer leaves with receipt and goods (if any).

Extensions (or Alternative Flows):

- 7a. Paying by cash:
  1. Cashier enters the cash **amount tendered**.