

Information Systems Concepts



Tutorial: Online Shopping

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Based on Chapter 10 of Maciaszek, L.A.:

Requirements Analysis and System Design (3rd edition) Addison Wesley, 2007



Outline

- Use Case Modelling
- Activity Modelling
- Class Modelling
- Interaction Modelling



Online Shopping: Background (1)

- Buying computers over the Internet
using the manufacturer's web page
- Computers classified into
servers, desktops and laptops
- Customer can select standard configuration
or can configure their own configuration
 - For each new configuration,
the system can calculate its price
- To place an order, the customer must fill in
shipment and payment information



Online Shopping: Background (2)

- The system sends a confirmation e-mail message to the customer with details of the order
- Customer can check the order status online at any time
- Moreover, the system needs to
 - verify the customer's credentials and payment methods
 - request the ordered configuration from the warehouse
 - print an invoice
 - request the warehouse to ship the computer to the customer

Use Case Modelling

- 1.** The customer uses the manufacturer's online shopping web page to view the standard configuration of the chosen server, desktop or laptop. The price is also shown.
- 2.** The customer chooses to view the details of the configuration, perhaps with the intention of buying it as is or to build a more suitable configuration. The price for each configuration can be computed on customer's request.
- 3.** The customer may choose to order a computer online or request a salesperson to contact them to explain details of the order, negotiate the price and so on before the order is actually placed.
- 4.** To place an order, the customer must fill in the online form with shipment and invoice address and payment details (credit card or cheque).
- 5.** After the customer's order has been entered into the system, the salesperson sends an electronic request to the warehouse with details of the configuration ordered.
- 6.** The details of the transaction, including the order number and the customer account number, are e-mailed to the customer so that they can check the status of the order online.
- 7.** The warehouse obtains the invoice from the salesperson and ships the computer to the customer.



Requirements

3. The customer may choose to order a computer online or may request a salesperson to contact them to explain order details, negotiate the price, etc. before the order is actually placed.
7. The warehouse obtains the invoice from the salesperson and ships the computer to the customer.



Step 1: Actors in the Requirements

3. The customer may choose to order a computer online or may request a salesperson to contact them to explain order details, negotiate the price, etc. before the order is actually placed.

7. The warehouse obtains the invoice from the salesperson and ships the computer to the customer.



Customer



Salesperson



Warehouse

NB: The shipment process is **not** part of our system



Step 2: Use Cases in the Requirements

3. The customer may choose to order a computer online or may request a salesperson to contact them to explain order details, negotiate the price, etc. before the order is actually placed.
7. The warehouse obtains the invoice from the salesperson and ships the computer to the customer.

Order Computer

Print Invoice

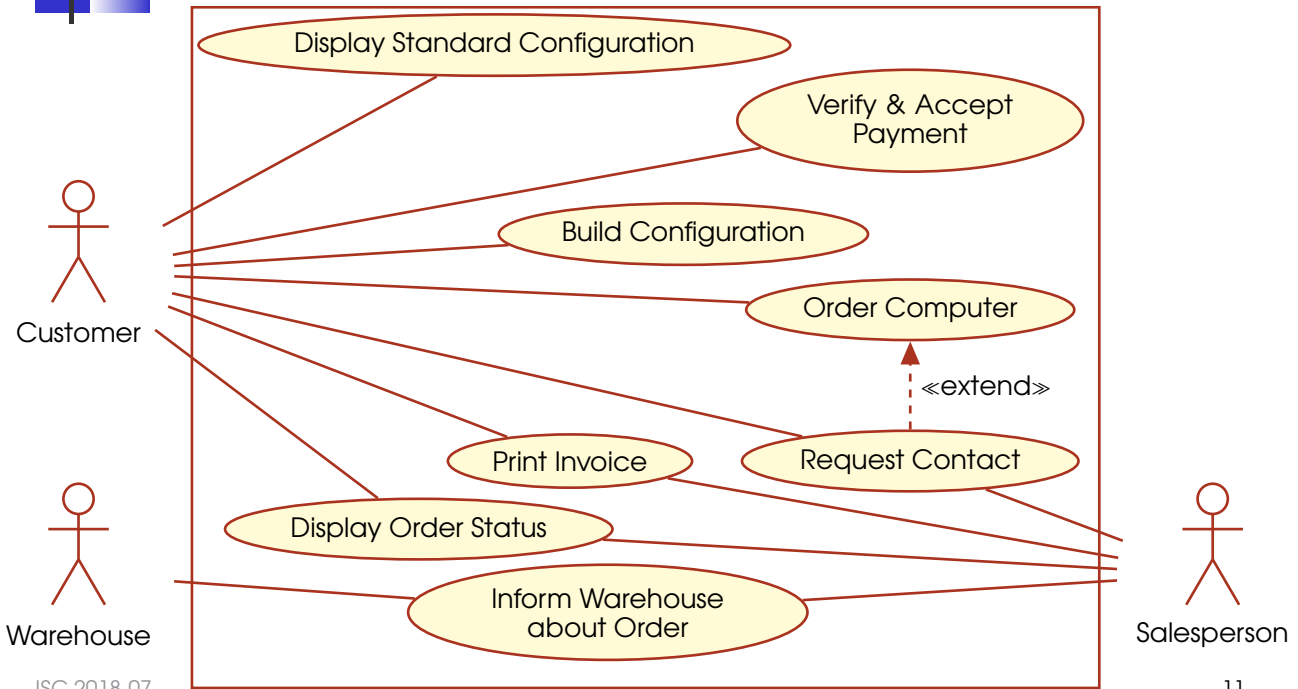
Request Contact



Step 2: Full List of Use Cases in the Requirements

no	actor	use case
1	Customer	Display Standard Configuration
2	Customer	Build Configuration
3	Customer, Salesperson	Order Computer Request Contact
4	Customer	Order Computer Verify & Accept Payment
5	Salesperson, Warehouse	Inform Warehouse about Order
6	Salesperson Customer	Order Computer Display Order Status
7	Salesperson Warehouse	Print Invoice

Step 3: Use Case Diagram





Step 4:

Use Case Description (1)

Order Computer

see p. 3 of OnlineShoppingBackground.pdf

Use case	Order Computer
Brief description	This use case allows a Customer to enter a purchase order. This includes providing a shipment and invoice address as well as payment details.
Actors	Customer
Preconditions	Customer points an Internet browser to the computer manufacturer's order entry web page. The page displays the details of a configured computer together with its price.



Step 4:

Use Case Description (2)

Order Computer

Main flow	<p>(1) The use case begins when the <i>Customer</i> decides to order ...</p> <p>(2) The system requests the <i>Customer</i> to enter ...</p> <p>(3) The <i>Customer</i> chooses the <i>Purchase</i> ...</p> <p>(4) The system assigns a unique order number ...</p> <p>(5) The system e-mails the order number and ...</p>
Alternative flows	<p>(6) The <i>Customer</i> activates the <i>Purchase</i> function before providing all mandatory ...</p> <p>(7) The <i>Customer</i> chooses the <i>Reset</i> function ...</p>
Postconditions	<p>If the use case is successful, the purchase order will be recorded in the system's database. Otherwise, the system state remains unchanged.</p>