

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 (1)

- Use Case Modelling

Step 1 Find actors from the above requirements.

Step 2 Find use cases from the above requirements.

Step 3 Draw a use case diagram.

Step 4 Write a use case description for the use case “Order configured computer”. Use your general knowledge of typical order processing tasks to derive details not stated in the requirements.

- Activity Modelling

Step 5 Find actions from the above use case description.

Step 6 Draw an activity diagram for the use case “Order configured computer”.



Outline (2)

- Class Modelling

Step 7 Find entity classes from the above requirements.

Step 8 Think about the attributes for the above classes. Consider only attributes with primitive types.

Step 9 Add associations to the class model. Consider what access paths between these classes are required by the use cases.

Step 10 Add aggregations or compositions to the class model.

Step 11 Add generalizations to the class model. Consider how you can extract any common attributes in the existing classes into a high-level class.

Step 12 Draw a class diagram for the online shopping application. Modify the attribute content of classes as necessary due to the generalization hierarchy.



Outline (3)

- Interaction Modelling

Step 13 Draw a sequence diagram for the action
“Display current configuration”.

Step 14 Convert the above sequence diagram into
a communication diagram.

Step 15 Add operations to the class diagram according to the
messages in the above sequence or communication
diagram.



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

- 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.

Interaction Modelling

Display Current
Configuration

SonyStyle USA - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail News RSS

Address http://www.sonymstyle.com/is-bin/INTERSHOP.enfinity/eCS/Store/en/-/USD/SY_Configurator-St... Go Norton AntiVirus Links

enter search term

GO all of Sony Style

GO in Computers and Peripherals

computers and peripherals

Hot Picks

Great Deals

VAIO® Notebooks

VAIO® Desktops

RZ Series

Customized RZ40C

Customized RZ40CG

Media Center Edition

Ready to Ship

RS Series

V Series

W Series

Clearance

Displays

Projectors

CD/DVD Burners

Sony PC Accessories

VAIO Select Accessories & Software

Clearance

computers and peripherals

handhelds/PDAs

wireless solutions

digital cameras/camcorders

televisions

home audio/video


portable audio

accessories

entertainment robots


custom configuration

VAIO® Desktops > RZ Series > Customized RZ40C


PCV-RZ40C Series
 Price as configured: **\$2597.99**
 as low as \$66.00/ mo
[Financing Details](#)
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 Monitor sold separately

FREE Ground Shipping on ALL VAIO® PC orders!

Sony Recommends Microsoft® Windows® XP Professional.

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[specifications](#)

Operating System [more info >](#)

☒ Microsoft® Windows® XP Professional
☐ Microsoft® Windows® XP Home Edition [subtract \$75.00]

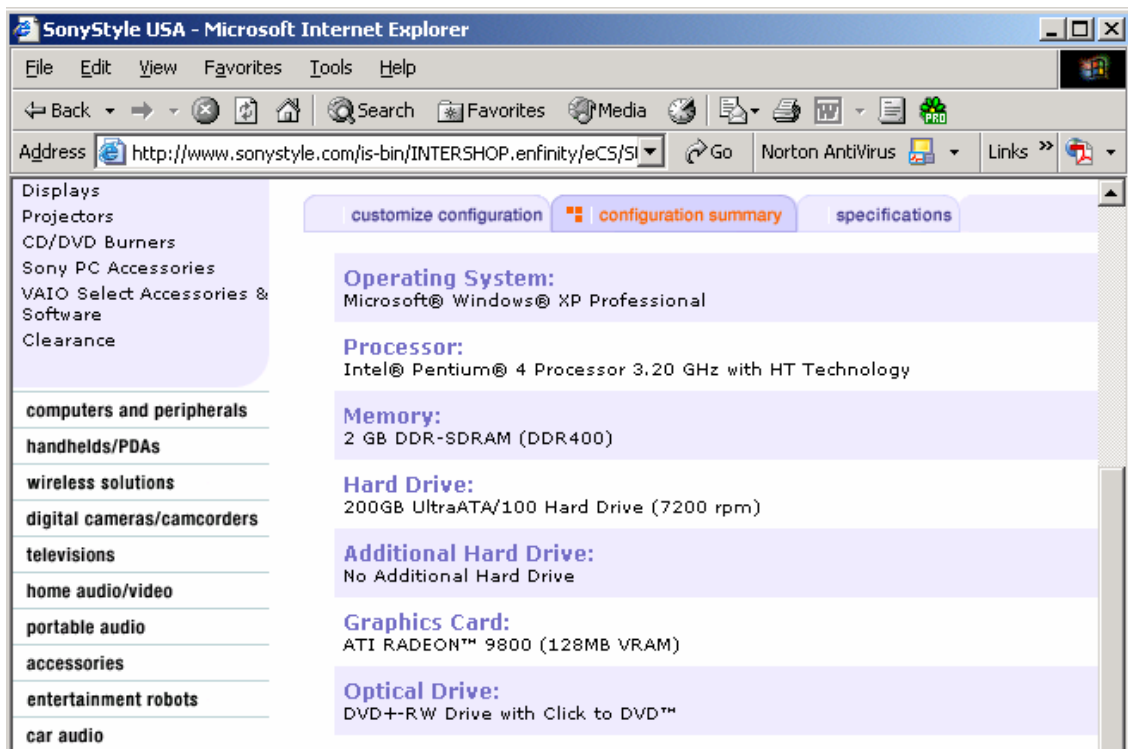
Processor [more info >](#)

☒ Intel® Pentium® 4 Processor 3.20 GHz with HT Technology -**Maximum performance!**
☐ Intel® Pentium® 4 Processor 3 GHz with HT Technology -**Great value vs performance!** [subtract \$224.00]

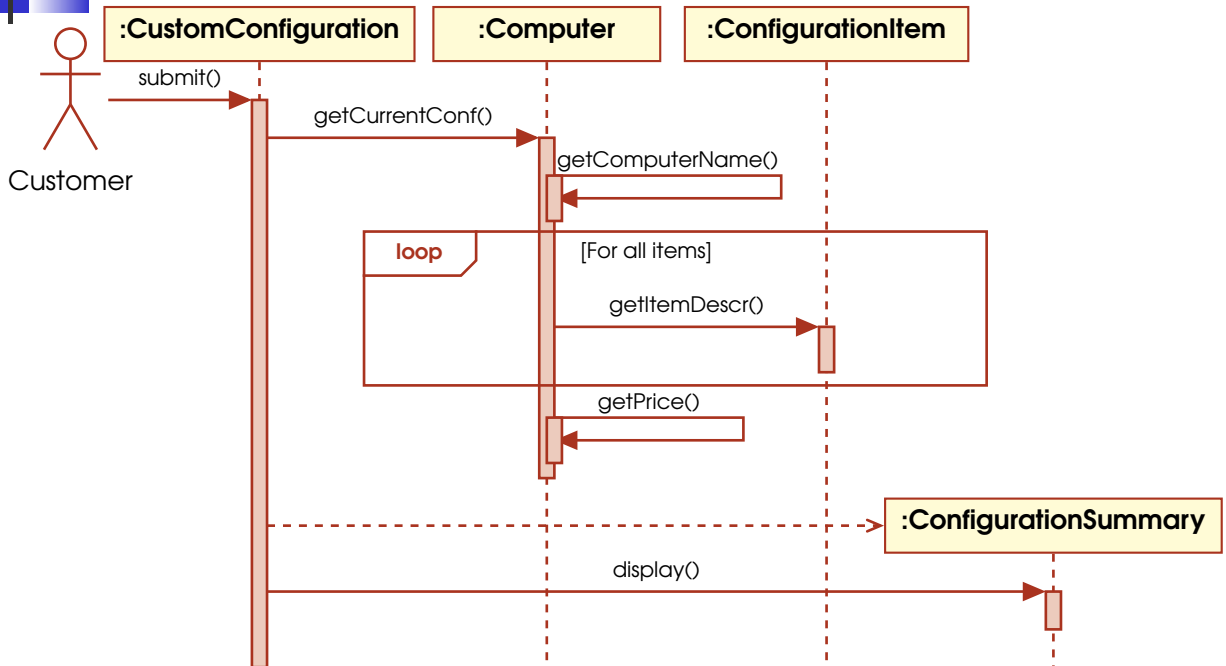
Memory [more info >](#)

☒ 2 GB
☐ 1 GB [subtract \$190.00]

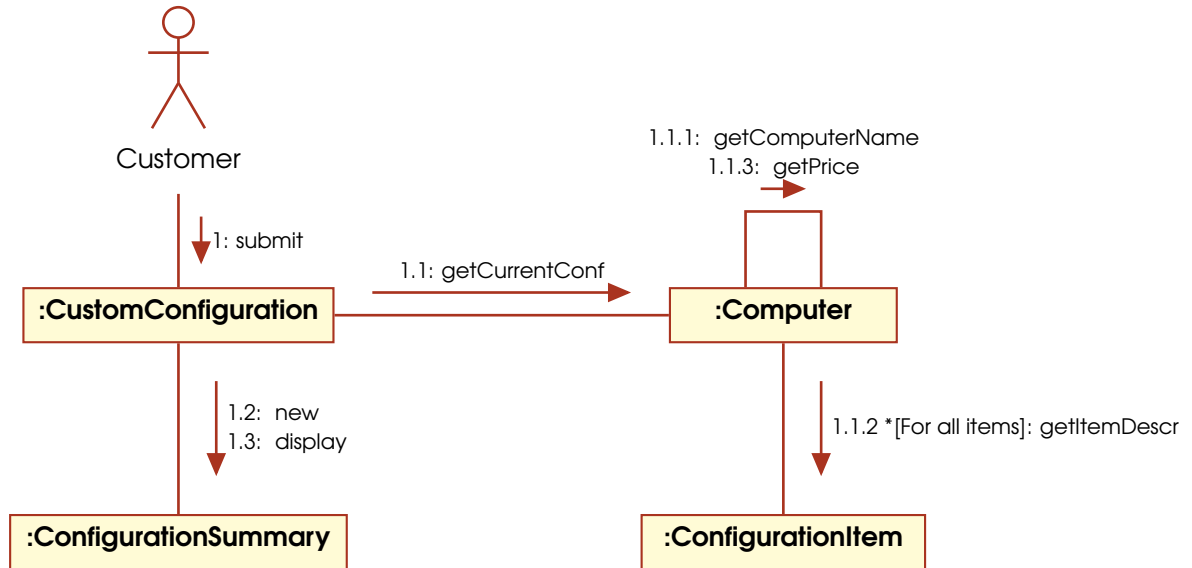
Internet



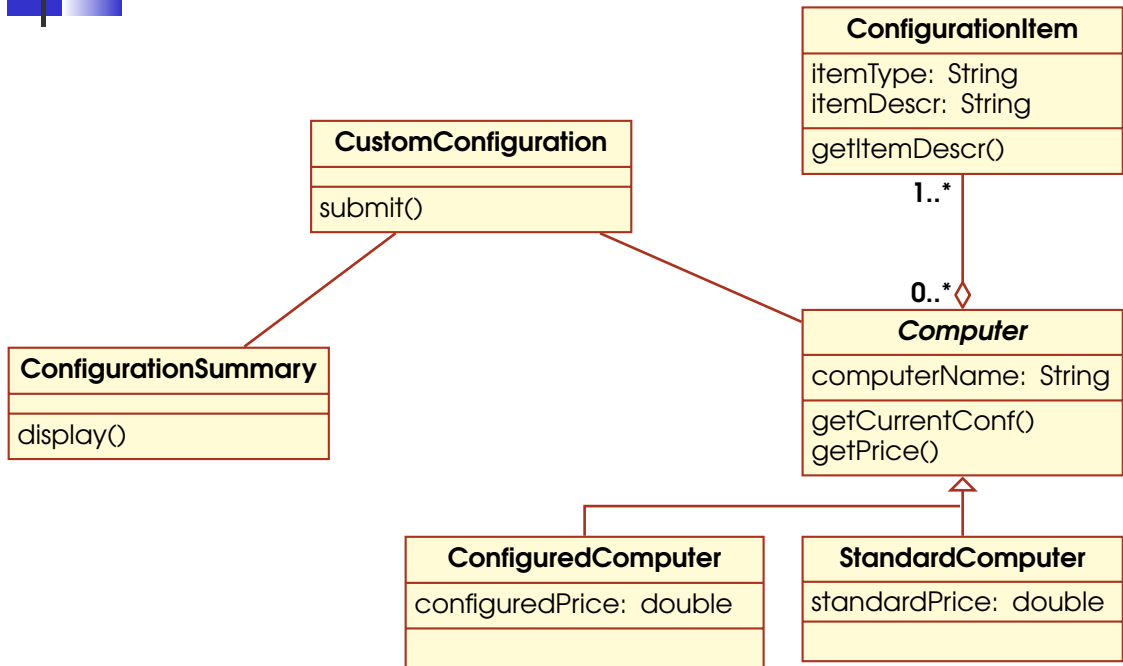
Step 13: Sequence Diagram



Step 14: Communication Diagram



Step 15: Operations





Take Home Messages

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