

Appendix D – Worked Case Study: Example UML Products produced in DSDM Phases

In order to illustrate what the UML output of each DSDM phase could be, an example of the UML products produced for the first 4 phases of a real DSDM project are shown within this Appendix. Chapters, which have no relevance for this white paper, have not been included

Stock 2000 - Feasibility Study Report

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Executive Summary

The objective of the project is to automate the stock control system for our company. We intend to use the DSDM framework and as the project progresses into the next stage we will look for early, incremental deliveries which will give us business benefit. The Feasibility study uses a modelling technique called UML (Unified Modelling Language) to express the business and technological requirements.

Actor Catalogue

NAME	DESCRIPTION	USE CASES
Client Account Manager	<i>A Sales Team member</i>	Set Requirements for Job, Invoice For Storage Charges
Production Department Supervisor	<i>A person within the company production department responsible for ensuring that sufficient goods supplies are available for a job and for ensuring that surplus goods are returned to the warehouse.</i>	Requisition Stock, Return Surplus Stock To Warehouse
Production Manager	<i>A person with the responsibility for ensuring good order of production processes</i>	Check Stock Usage
Senior Manager	<i>A person with the responsibility of ensuring good order of the company processes</i>	Check Stock Usage
Warehouse Manager	<i>The person responsible for the good order of warehouse processes</i>	Check Stock Usage, Check Pick Lists
Warehouse Operator	<i>Any member of the warehouse staff empowered to receive a delivery of goods from outside the company or an internal user of goods stored in the warehouse</i>	Receive Stock, Return Surplus Stock To Warehouse, Issue Stock, Despatch Stock

Figure 1 - List of Actors

Use Case Model

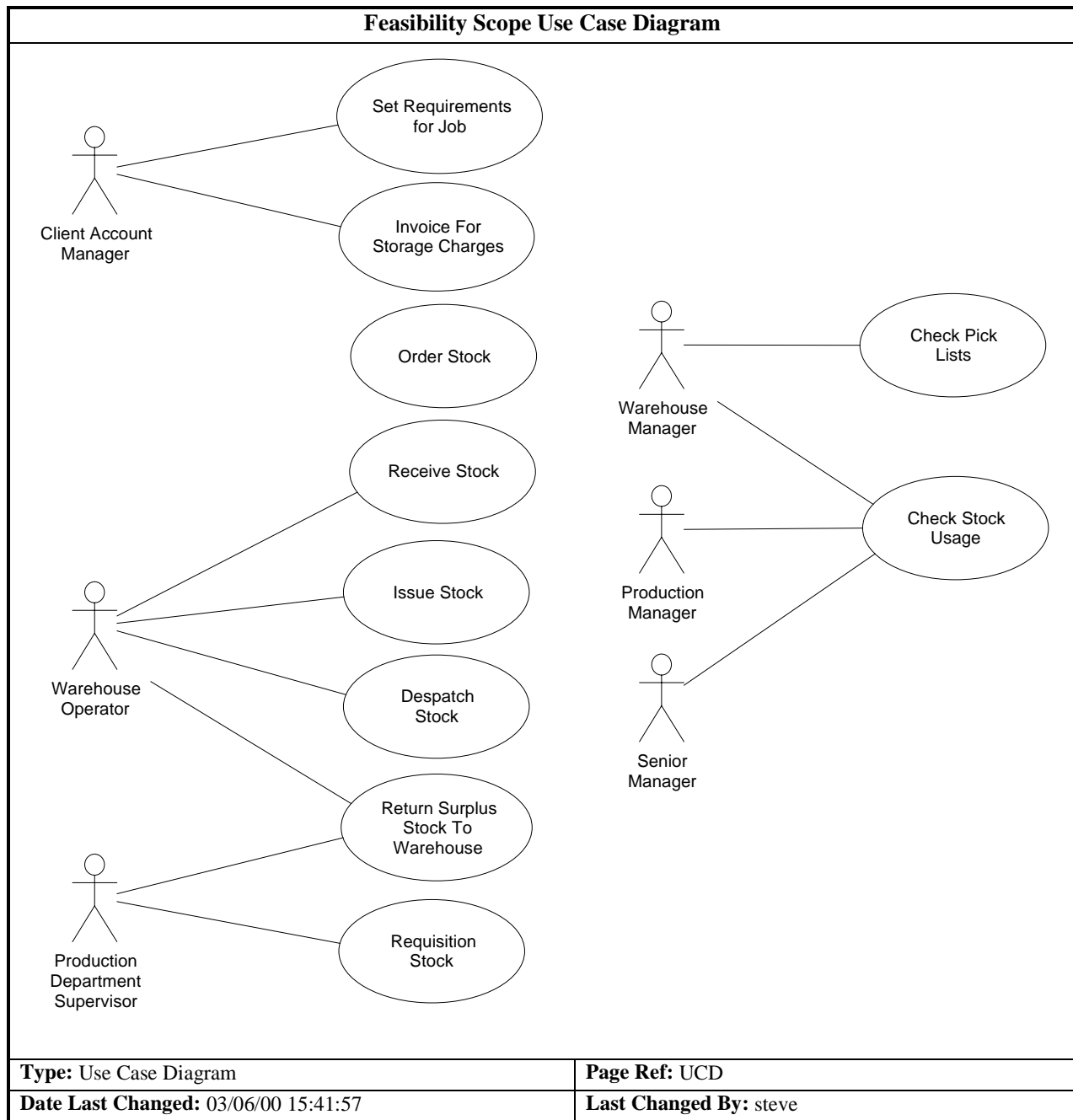


Figure 2 - Feasibility Scope Use Case Diagram (Use Case Diagram)

Use Case Detail

Use Case Catalogue Detail: 'Check Pick Lists'

Used by:

[Actors]

Warehouse Manager

Intent:

To view the details of stock that has been or is to be picked for delivery to production departments

Use Case Catalogue Detail: 'Check Stock Usage'

Used by:

[Actors]

Senior Manager, Production Manager, Warehouse Manager

Intent:

To calculate and view the usage of stock over different time periods

Use Case Catalogue Detail: 'Despatch Stock'

Used by:

[Actors]

Warehouse Operator

Intent:

To enter the details of stock removed from the warehouse to a location other than production departments

Use Case Catalogue Detail: 'Invoice For Storage Charges'

Used by:

[Actors]

Client Account Manager

Intent:

To prepare and send an invoice to a client for stock storage charges

Use Case Catalogue Detail: 'Issue Stock'

Used by:

[Actors]

Warehouse Operator

Intent:

To enter the details of stock issued to production departments

Use Case Catalogue Detail: 'Order Stock'

Used by:

This use case is unused.

Intent:

To order stock required for a specific job or general stock to be used for many jobs

Use Case Catalogue Detail: 'Receive Stock'

Used by:

[Actors]

Warehouse Operator

Intent:

To enter the details of stock received

Use Case Catalogue Detail: 'Requisition Stock'

Used by:

[Actors]

Production Department Supervisor

Intent:

To request stock to be delivered to a production department

Use Case Catalogue Detail: 'Return Surplus Stock To Warehouse'

Used by:

[Actors]

Production Department Supervisor, Warehouse Operator

Intent:

To enter the details of stock to be returned to the warehouse from a production department

Use Case Catalogue Detail: 'Set Requirements for Job'

Used by:

[Actors]

Client Account Manager

Intent:

To select/enter all requirements for a job

Overall Plan

Estimates

Summary

Stock 2000 - Business Study Report

This document contains all of the Business Study Products in one. Only chapters, which have a direct bearing on the subject in hand, have been completed

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Executive Summary

Actor Catalogue

NAME	DESCRIPTION	USE CASES
Client Account Manager	<i>A Sales Team member</i>	W Prepare Quote, ?? Set Requirements for Job, 3S Invoice For Storage Charges
Production Department Supervisor	<i>A person within the company production department responsible for ensuring that sufficient goods supplies are available for a job and for ensuring that surplus goods are returned to the warehouse.</i>	W Return Surplus Stock To Warehouse, 1C Requisition Stock
Production Manager	<i>A person with the responsibility for ensuring good order of production processes</i>	1S Check Stock Usage
Senior Manager	<i>A person with the responsibility of ensuring good order of the company processes</i>	2S Amend A Production Department, 1S Check Stock Usage, W Delete A Production Department, 2M Add A Production Department
Warehouse Manager	<i>The person responsible for the good order of warehouse processes</i>	W Add a Warehouse Storage Location, 3M Check Pick Lists, 1S Check Stock Usage
Warehouse Operator	<i>Any member of the warehouse staff empowered to receive a delivery of goods from outside the company or an internal user of goods stored in the warehouse</i>	W Return Surplus Stock To Warehouse, W Despatch Stock, 1M Receive Stock, 3C Issue Stock

Figure 3 - List of Actors

Use Case Model

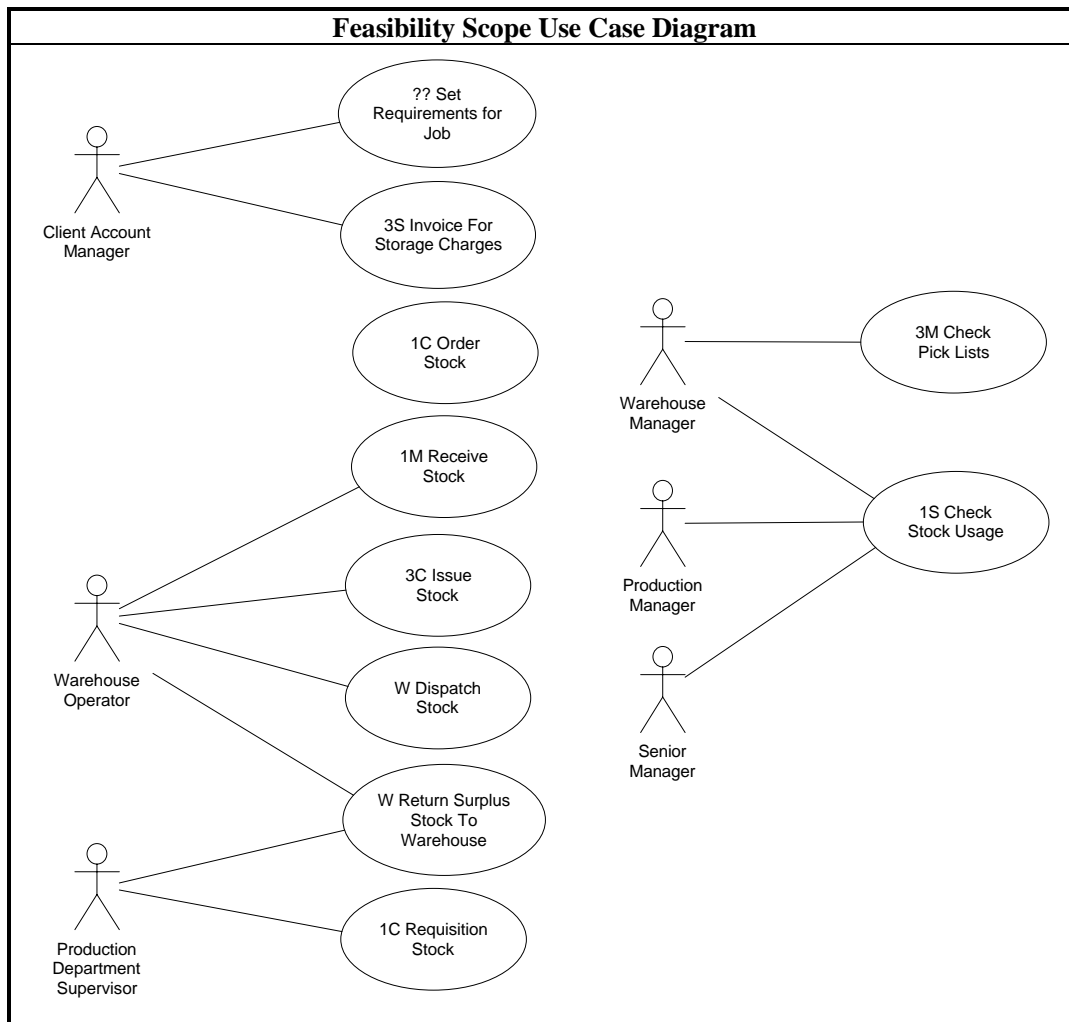


Figure 4 - Feasibility Scope Use Case Diagram (Use Case Diagram)

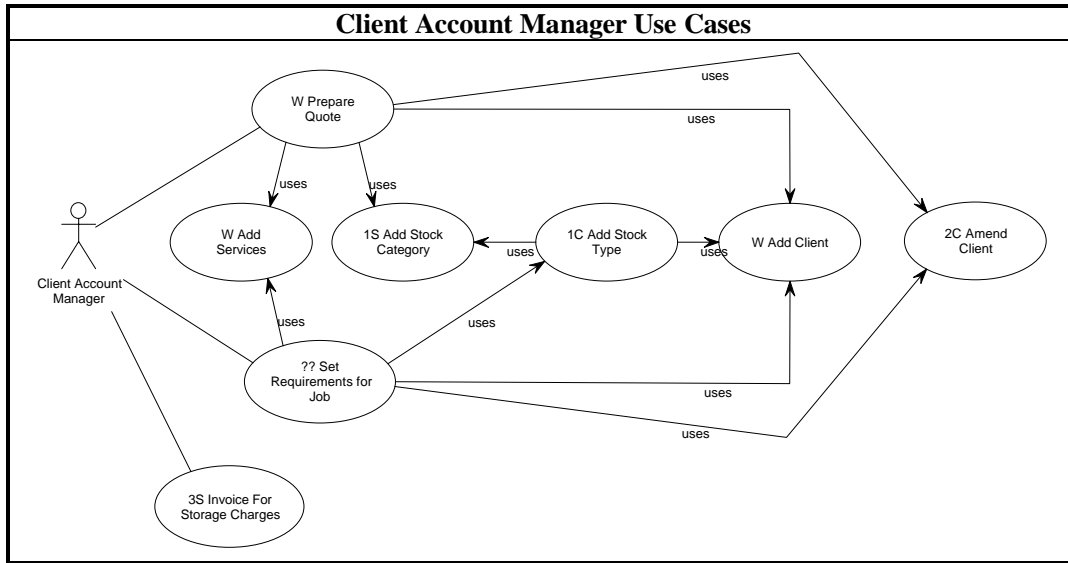


Figure 5 - Client Account Manager Use Cases (Use Case Diagram)

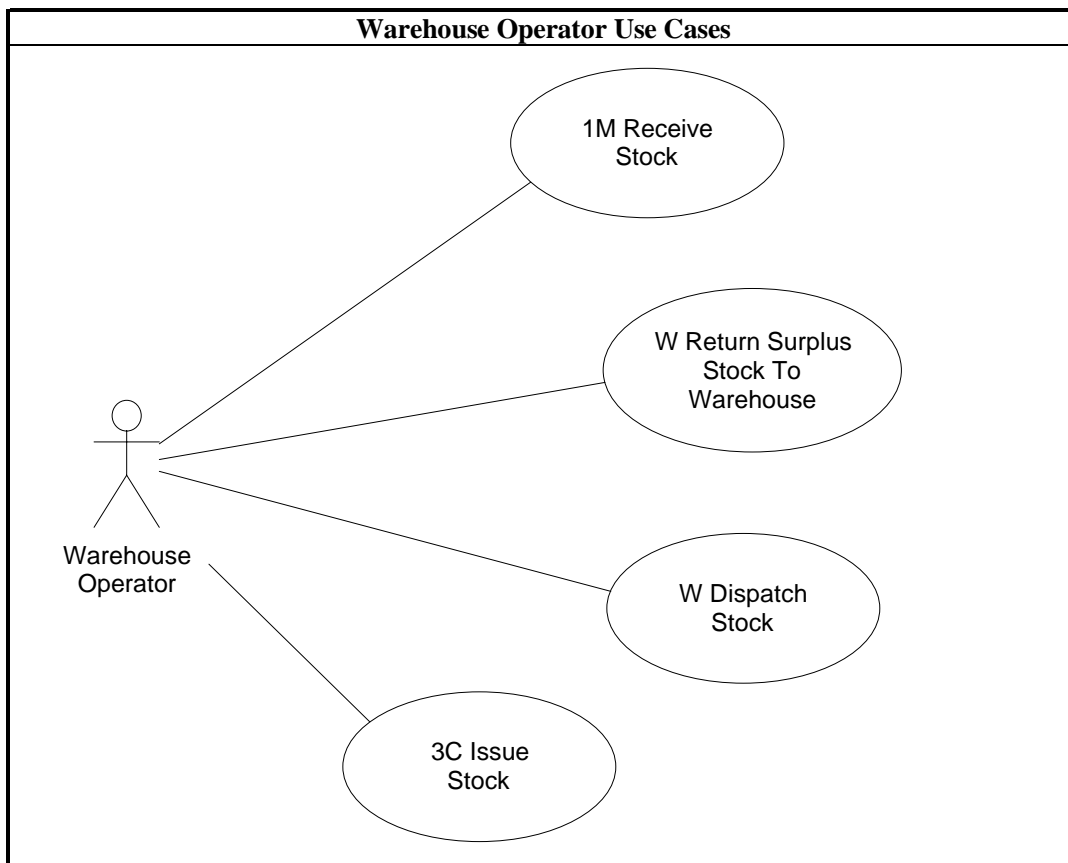


Figure 6 - Warehouse Operator Use Cases (Use Case Diagram)

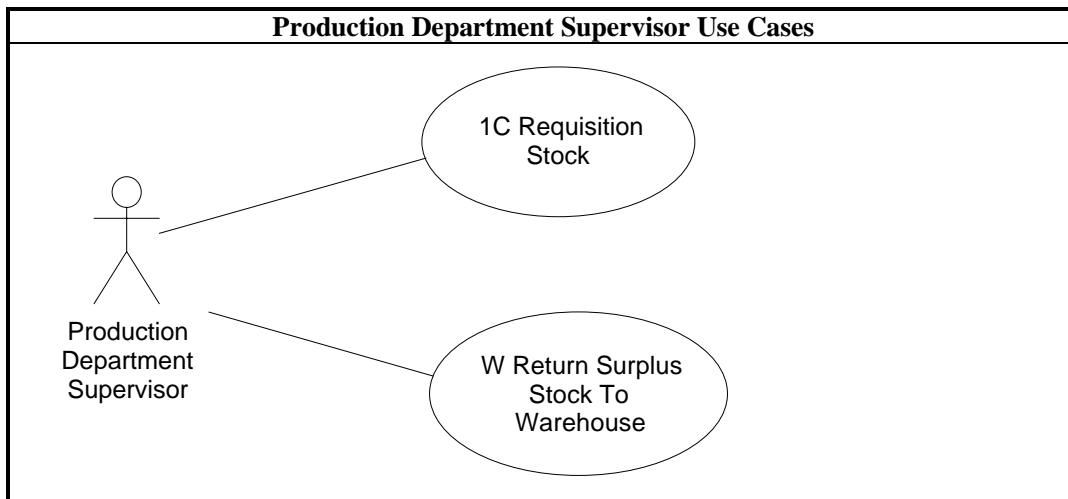


Figure 7 - Production Department Supervisor Use Cases (Use Case Diagram)

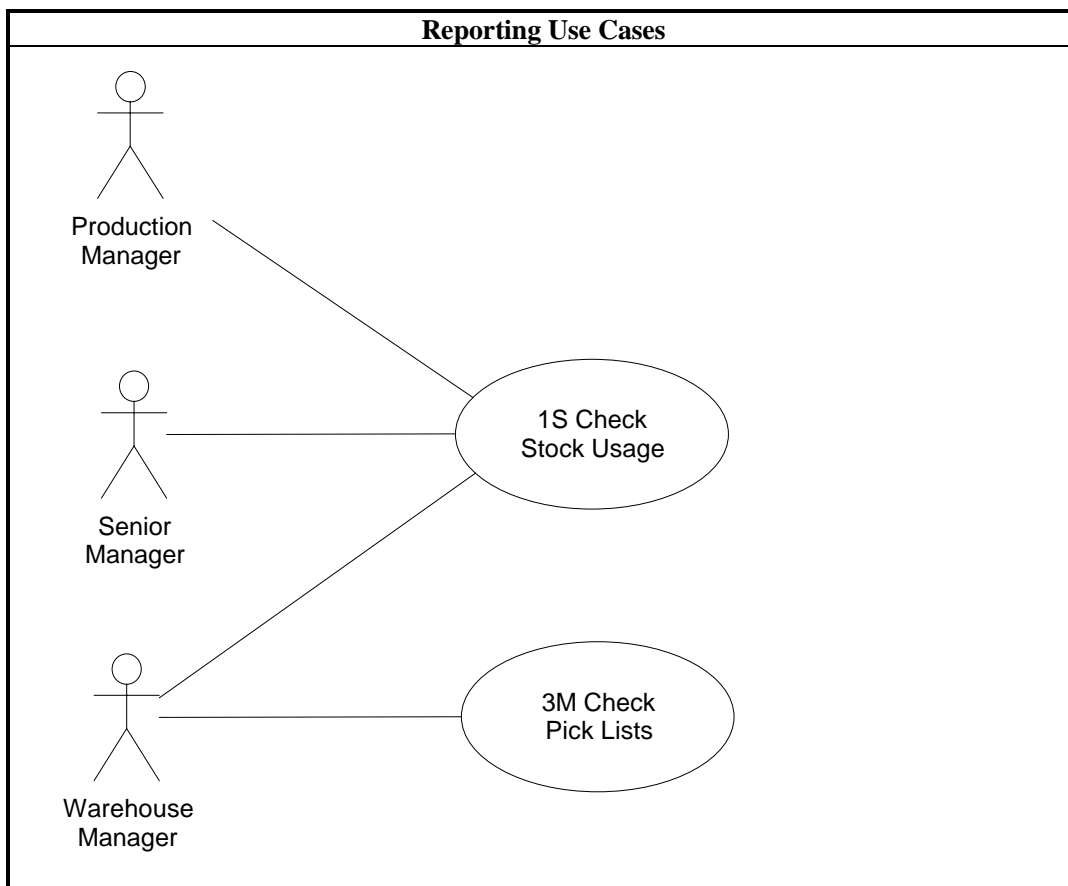


Figure 8 - Reporting Use Cases (Use Case Diagram)

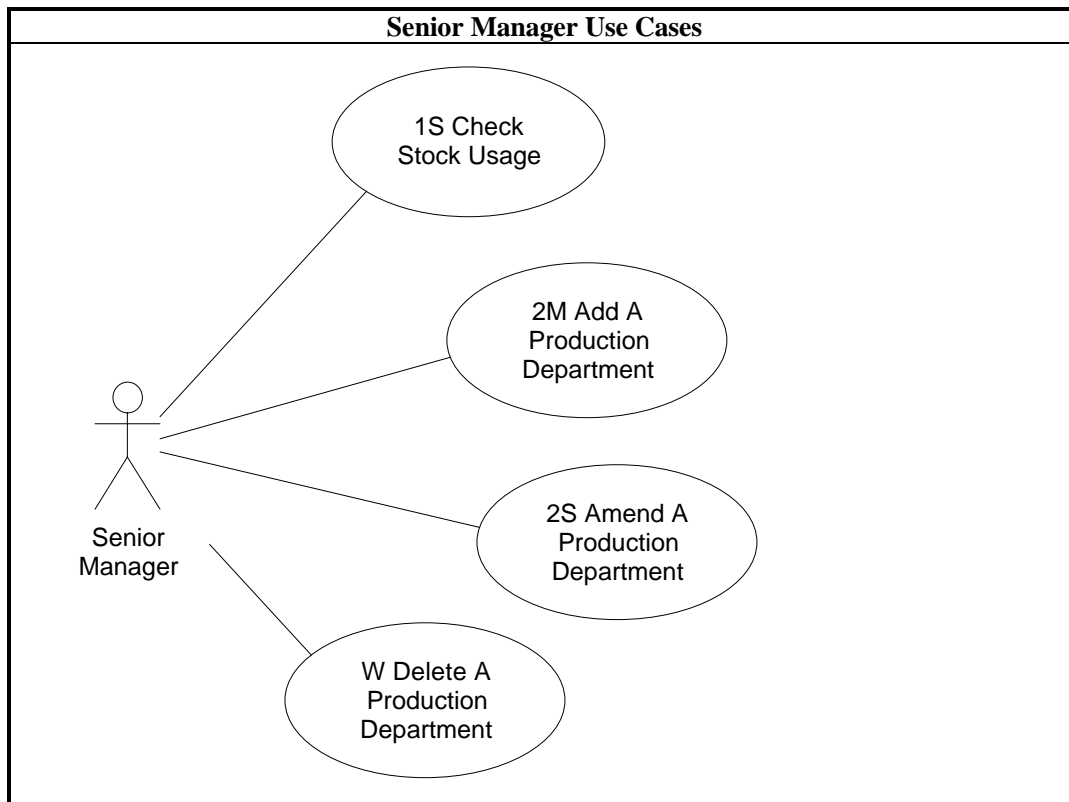


Figure 9 - Senior Manager Use Cases (Use Case Diagram)

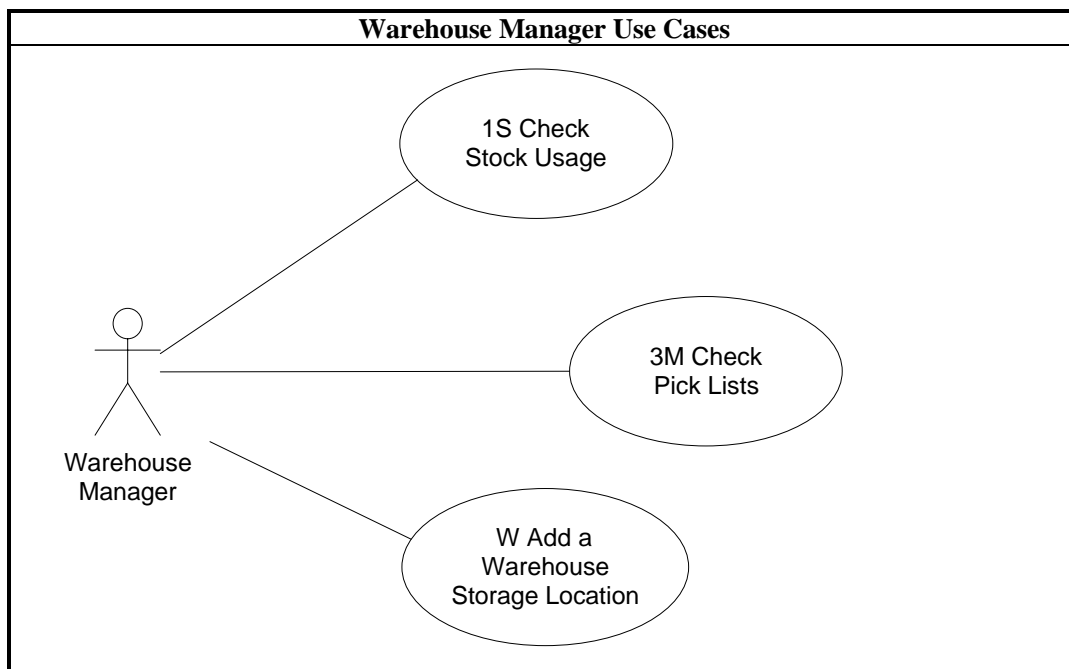


Figure 10 - Warehouse Manager Use Cases (Use Case Diagram)

Use Case Detail

Use Case Model Detail: '1C Add Stock Type'

Used by:

[Used By Use Cases]

?? Set Requirements for Job

[Used Use Cases]

W Add Client, 1S Add Stock Category

Description:

The user selects to add a Stock Type and either selects the client it is for or "General Purpose"; if for a client and the client does not exist on the system, user adds the client details.

Intent:

To add a particular type of stock either for a particular client or general purpose stock for use with multiple clients/jobs

PRIORITY C
INCREMENT 1

Use Case Model Detail: '1C Order Stock'

Used by:

This use case is unused.

Intent:

To order stock required for a specific job or general stock to be used for many jobs

PRIORITY C

Use Case Model Detail: '1C Requisition Stock'

Used by:

[Actors]

Production Department Supervisor

Description:

The user selects to requisition stock for a given job.

The system brings forward the stock required for the job; the user optionally amends the details, enters a required by date and time and selects to send a requisition message to the warehouse and/or print a hard copy

Intent:

To request stock to be delivered to a production department

PRIORITY C
INCREMENT 1

Use Case Model Detail: '1M Receive Stock'

Used by:

[Actors]

Warehouse Operator

Description:

The user selects to receive stock into the warehouse from a deliverer and checks if the delivery was expected.

For each stock type

 If expected:

 Stock types and amount are either confirmed or amended

 If amended

 Send message to Account Manager

 Else

 User selects stock type and enters:

 Location

 Reference

 Quantity

 Pallets

 Movement Type

 Notes

 Endif

 User selects where stock is to be stored in the warehouse

Endwhile

Intent:

To enter the details of stock received

PRIORITY M

INCREMENT 1

Use Case Model Detail: '1S Add Stock Category'

Used by:

[Used By Use Cases]

W Prepare Quote, 1C Add Stock Type

Description:

The user selects to add a Stock Category and enters the category, any required sub-category ie envelope - DL and any description

Intent:

To add the details of a generic stock type

PRIORITY S

INCREMENT 1

Use Case Model Detail: '1S Check Stock Usage'

Used by:

[Actors]

Senior Manager, Production Manager, Warehouse Manager

Description:

The user selects to check stock usage, selects the period to view usage over and optionally the client for whose stock to view usage/general purpose stock..

The system lists the usage of all stock for the selected client/all clients/general purpose.

The user selects to preview the list/s on screen and/or print a hard copy.

Intent:

To calculate and view the usage of stock over different time periods

PRIORITY S

INCREMENT 1

Use Case Model Detail: '2C Amend Client'

Used by:

[Used By Use Cases]

W Prepare Quote, Set Requirements for Job

Description:

The user selects to amend a client.

Required details:

Client Name

Head office address/phone/fax

Contact name, phone/fax/email

Delivery address/contact/phone/fax/email

Intent:

To change the details of a Client

PRIORITY C

INCREMENT 2

Use Case Model Detail: '2M Add A Production Department'

Used by:

[Actors]

Senior Manager

Description:

The user selects to add a Production Department and enters the following minimum requirements

The name

Role

Equipment

Supervisor

Intent:

To enter the details of a Production Department that will carry out Jobs

PRIORITY M

INCREMENT 2

Pre Conditions:

User must be from Senior Manager or System Administrator User Groups

Post Conditions:

A Production Department is added to the system

Use Case Model Detail: '2S Amend A Production Department'

Used by:

[Actors]

Senior Manager

Description:

The user selects to amend a Production Department and enters changes to include the following minimum requirements

The name

Role

Equipment

Supervisor

Intent:

To amend the details of a Production Department

PRIORITY S

INCREMENT 2

Use Case Model Detail: '3C Issue Stock'

Used by:

[Actors]

Warehouse Operator

Description:

User selects to issue stock to production department:

For each stock requested:

 If request from message:

 System brings forward stock type, amount and department being issued to.

 Else

 User selects stock type, enters amount and selects which department being issued to.

 Endif

 User selects from where the stock is to be taken

End for

User prints picklist

Intent:

To enter the details of stock issued to production departments

PRIORITY C

INCREMENT 3

Use Case Model Detail: '3M Check Pick Lists'

Used by:

[Actors]

Warehouse Manager

Description:

The user selects to view picklists and selects a filter for which period/picker/client/open or closed and the order to view them.

The system lists the picklists by the selected criteria; the user selects to preview them on screen and/or print hard copies.

Intent:

To view the details of stock that has been or is to be picked for delivery to production departments

PRIORITY M
INCREMENT 3

Use Case Model Detail: '3S Invoice For Storage Charges'

Used by:

[Actors]

Client Account Manager

Description:

The user selects to prepare client invoices for storage charges.

The system calculates the amount of stock in the warehouse for each chargeable client and prepares the invoice. The user selects to preview the invoices on screen and/or print hard copies and/or send the invoices via email.

Intent:

To prepare and send an invoice to a client for stock storage charges

PRIORITY S
INCREMENT 3

Use Case Model Detail: '?? Set Requirements for Job'

Used by:

[Actors]

Client Account Manager

[Used Use Cases]

1C Add Stock Type, 2C Amend Client, W Add Services, W Add Client

Description:

User selects to enter a new job and selects the client for whom the job is to be done. If the client is not already known, the user enters the required client details.

If the job has resulted from a quote, the user selects the quote and the system brings forward the relevant details.

User enters/amends the required job details including date required, stock amounts, data files and mailing lists to use.

Intent:

To select/enter all requirements for a job

PRIORITY ?
INCREMENT ?

Use Case Model Detail: 'W Add a Warehouse Storage Location'

Used by:

[Actors]

Warehouse Manager

Description:

The user selects to add a warehouse location and enters the following minimum details:

Designator
Storage status
Max pallets

Intent:

To add a storage location

PRIORITY W
INCREMENT

Use Case Model Detail: 'W Add Client'

Used by:

[Used By Use Cases]

W Prepare Quote, 1C Add Stock Type, ?? Set Requirements for Job

Description:

The user selects to add a client.

Required details:

Client Name

Head office address/phone/fax

Contact name, phone/fax/email

Delivery address/contact/phone/fax/email

Intent:

To add a clients details to the system

PRIORITY W

INCREMENT

Use Case Model Detail: 'W Add Services'

Used by:

[Used By Use Cases]

W Prepare Quote, ?? Set Requirements for Job

Description:

The user selects to add a service and selects/enters the details.

Intent:

To add the details of a service that the company offers to clients

PRIORITY W

INCREMENT

Use Case Model Detail: 'W Delete A Production Department'

Used by:

[Actors]

Senior Manager

Description:

The user selects to delete a Production Department and selects the Department to delete. If the Department is already assigned to an uncompleted Job it will not be deleted; if not, the Department details will be archived for use for historical auditing.

Intent:

To remove the details of a Production Department so that it is no longer available for allocating Jobs

PRIORITY W

INCREMENT

Use Case Model Detail: 'W Despatch Stock'

Used by:

[Actors]

Warehouse Operator

Description:

User selects to despatch stock and enters details of which stock and to where it is to be despatched.

Intent:

To enter the details of stock removed from the warehouse to a location other than production departments

PRIORITY W

INCREMENT

Use Case Model Detail: 'W Prepare Quote'

Used by:

[Actors]

Client Account Manager

[Used Use Cases]

W Add Client, 2C Amend Client, W Add Services, 1S Add Stock Category

Description:

The user selects to start a new quote and chooses the client for whom the quote is being prepared. If the client is not already on the system, the user adds the client details.

The user enters/selects the generic stock type, amount and service/s; the system calculates and displays the cost breakdown. If any of the generic stock types or services is not known to the system, the user enters the new details.

The user optionally selects to produce a hardcopy of the quote.

Intent:

To enter the generic details of a proposed job and calculate the cost to the client

PRIORITY W

INCREMENT

Use Case Model Detail: 'W Return Surplus Stock To Warehouse'

Used by:

[Actors]

Warehouse Operator, Production Department Supervisor

Description:

The production user selects to return stock to the warehouse from a particular job.

The system brings forward the stock types used for the job; the user enters amount of each stock type to be returned.

The user selects to send a return stock message to the warehouse and/or print a hard copy.

The warehouse user selects where the stock is to be stored in the warehouse.

Intent:

To enter the details of stock to be returned to the warehouse from a production department

PRIORITY W

INCREMENT

Prioritised Requirements List

Use Case	Increment 1 (M,S,C,W))	Increment 2 (M,S,C,W)	Increment 3 (M,S,C,W)
'Add A Production Department'		M	
'Add a Warehouse Storage Location'		W	
'Add Client'		W	
'Add Services'	W		
'Add Stock Category'	S		
'Add Stock Type'	C		
'Amend A Production Department'		S	
'Amend Client'		C	
'Check Pick Lists'			M
'Check Stock Usage'	S		
'Delete A Production Department'		W	
'Despatch Stock'			W
'Invoice For Storage Charges'			S
'Issue Stock'			C
'Order Stock'	C		
'Prepare Quote'			W
'Receive Stock'	M		
'Requisition Stock'	C		
'Return Surplus Stock To Warehouse'		W	
'Set Requirements for Job'	?	?	?

System Architecture

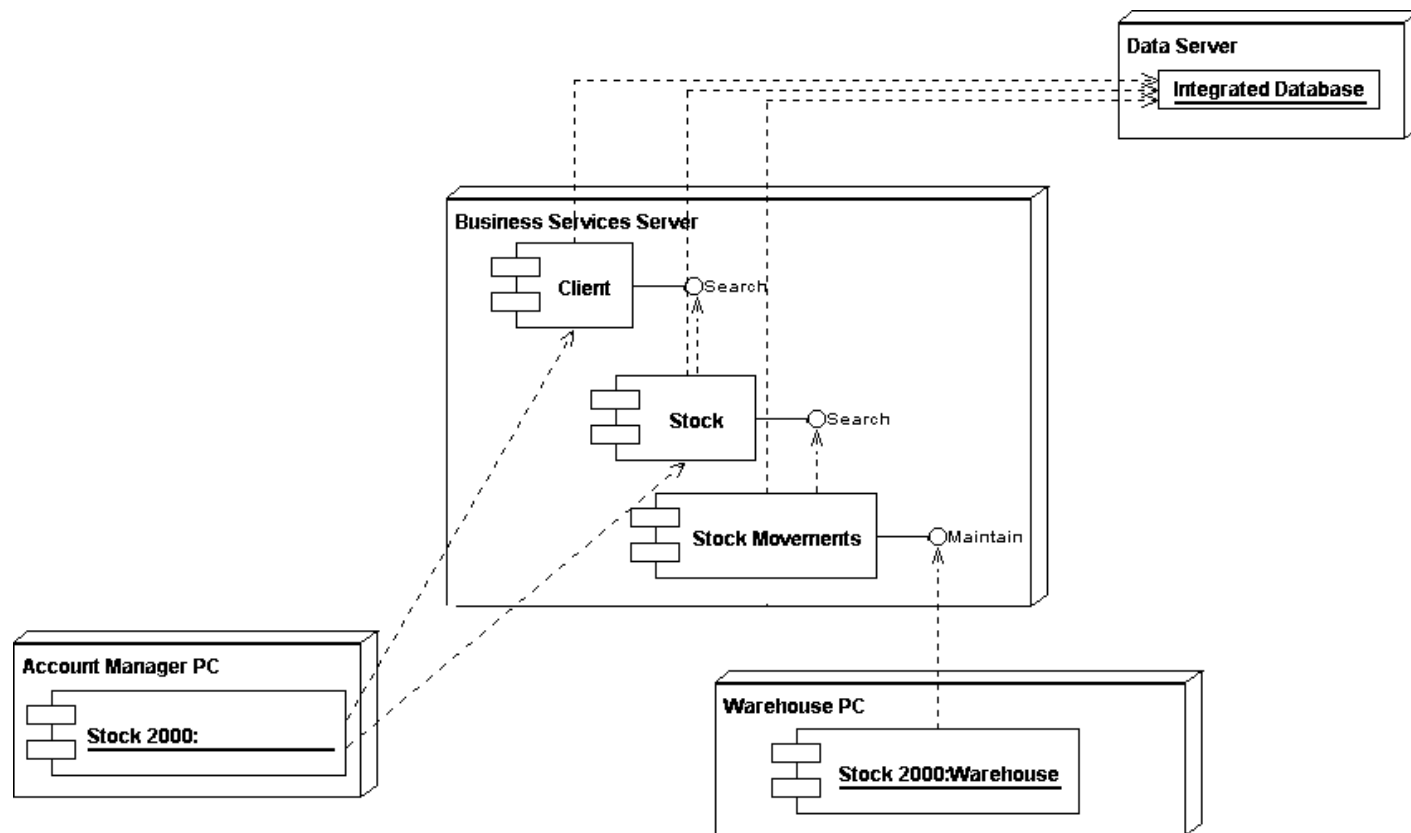


Figure 11 - Stock 2000 Proposed Deployment

Outline Prototyping Plan

Estimates

Risk Analysis

Summary

Functional Model Iteration

Stock 2000 - 1st Increment Functional Model and Functional Prototype

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Executive Summary

DSDM Note: Although the model developed will be evolutionary, the documentation produced at each stage should concentrate solely on those artefacts solely concerned with the stage.

This could lead to wasted time rearranging diagrams etc so a pragmatic approach should be taken i.e. if a Use Case Diagram contains Use Cases that are not being investigated in a particular increment along with those that are, the whole diagram should be included. Some notation may be used to indicate which artefacts are included in each increment but beware that this could add unnecessary complexity as the project progresses.

Full model documentation of the final application should be produced before the application is moved into maintenance/support.

Proposed Environment

Actor Catalogue

NAME	DESCRIPTION	USE CASES
Client Account Manager	<i>A Sales Team member</i>	3S Invoice For Storage Charges, W Prepare Quote, ?? Set Requirements for Job
Production Department Supervisor	<i>A person within the company production department responsible for ensuring that sufficient goods supplies are available for a job and for ensuring that surplus goods are returned to the warehouse.</i>	1C Requisition Stock, W Return Surplus Stock To Warehouse
Production Manager	<i>A person with the responsibility for ensuring good order of production processes</i>	1S Check Stock Usage
Senior Manager	<i>A person with the responsibility of ensuring good order of the company processes</i>	1S Check Stock Usage, 2M Add A Production Department, 2S Amend A Production Department, W Delete A Production Department
System Administrator		2M Add A Production Department, 2S Amend A Production Department, W Delete A Production Department
Warehouse Manager	<i>The person responsible for the good order of warehouse processes</i>	1S Check Stock Usage, 3M Check Pick Lists, W Add a Warehouse Storage Location
Warehouse Operator	<i>Any member of the warehouse staff empowered to receive a delivery of goods from outside the company or an internal user of goods stored in the warehouse</i>	3C Issue Stock, 1M Receive Stock, W Return Surplus Stock To Warehouse, W Despatch Stock

Figure 12 - List of Actors

Use Case Model

Warehouse Operator Use Cases					
UML Notation	Feasibility Study	Business Study	Functional Model Iteration	Design & Build Iteration	Implementation
Use Cases	Major Use Case names	Complete list of Use Cases. May have a definition of major Use Cases. The PRL is based on the Use Cases.	Normal Usage of the Use Case (e w hat happens 80% of the time). Drives the Functional Model Review Records	Full descriptions of all Use Cases, includes the exceptions (now 100% complete). Drives Test Records	Used to build User Documentation. Support departments should receive these UML products
Interaction Diagrams		Could be used when creating a Business Process Model/Enterprise Model to help understanding	One interaction diagram per Use Case Scenario. Part of the Functional Model	Part of Design Prototype. Structured Sentences derived from seq diagram description will feed test records	Support departments should receive these UML products
Class Diagrams (Object Diagrams)	If you already have a high quality Logical data model you could use class diagrams here. In this case you would extract the entities for scoping. You could also have a class model from a previous DSDM increment	A first cut business class diagram forms a useful element of the BAD, should be process driven, derived from the use case definitions + Interaction Diagrams	Business Class Diagram is product of the Sequence Diagram+ Use cases (all part of the functional model)	Business Objects are fairly stable at this stage. We add application/system control here. (could draw a Parallel with Logical/Physical DB Design)	Support departments should receive these UML products
State Transition Diagrams			Has additional notation which may be useful to describe Business Processing. Additional processing of Relevant/selected Business Objects. Performed at class level and only where it can add value	As in functional Model iteration but now concentrating on Control and Communication Objects	Support departments should receive these UML products
Component Diagrams		A project in a mature OO environment could be given a set of components at this stage and therefore use this diagram to show scope. Used in the SAD, a few important components will be shown here.	A collection/Partitioning of the Business Classes. The 'What' Should contain all the Proposed Components	The 'How' - shall we re-use, buy new ones, build our own	Support departments should receive these UML products
Deployment Diagrams	Used for scoping in an environment with a stable software/hardware architecture				Part of the Delivered system. Support departments should receive these UML products
Activity Diagrams	Used anyw here to support the other UML products. Especially useful for Business Process Modelling	Used anyw here to support the other UML products. Especially useful for Business Process Modelling	Used anyw here to support the other UML products. may be useful to describe Business Processing. Additional processing of Relevant/selected Business Objects. Performed at class level and only where it can add value	Used anyw here to support the other UML products.	Used anyw here to support the other UML products. Support departments should receive these UML products

Figure 13 - Warehouse Operator Use Cases (Use Case Diagram)

Use Case Detail

Use Case Model Detail: 'IM Receive Stock'

Used by:

[Actors]

Warehouse Operator

Description:

The user selects to receive stock into the warehouse from a deliverer and checks if the delivery was expected.

For each stock type

 If expected:

 Stock types and amount are either confirmed or amended

 If amended

 Send message to Account Manager

 Else

 User selects stock type and enters:

 Location

 Reference

 Quantity

 Pallets

 Movement Type

 Notes

 Endif

 User selects where stock is to be stored in the warehouse

Endwhile

Intent:

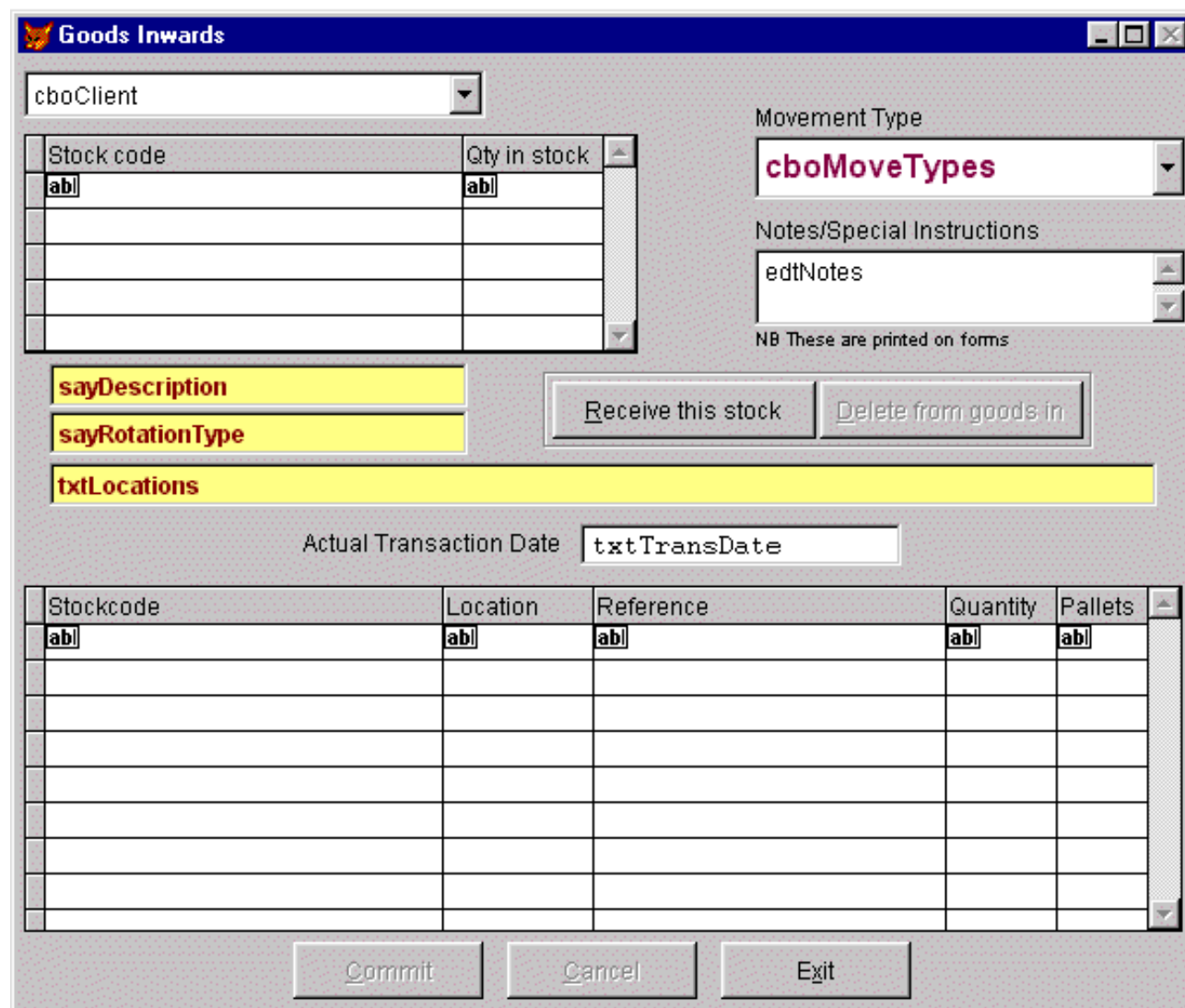
To enter the details of stock received

PRIORITY M

INCREMENT 1

Prototype

Figure 14 - Goods
Prototype



The 'Goods Inwards' form features a title bar with a fox icon and the text 'Goods Inwards'. It includes a 'cboClient' dropdown at the top left. Below it is a table with two columns: 'Stock code' and 'Qty in stock', with the first row containing 'abl' in both. To the right of this table is a 'Movement Type' dropdown set to 'cboMoveTypes' and a 'Notes/Special Instructions' text area containing 'edtNotes'. Below the notes is the text 'NB These are printed on forms'. Further down are three yellow-highlighted text fields: 'sayDescription', 'sayRotationType', and 'txtLocations'. To the right of these are two buttons: 'Receive this stock' and 'Delete from goods in'. Below these fields is the 'Actual Transaction Date' label and a 'txtTransDate' text field. At the bottom is a large table with five columns: 'Stockcode', 'Location', 'Reference', 'Quantity', and 'Pallets'. The first row contains 'abl' in each column. At the very bottom are three buttons: 'Commit', 'Cancel', and 'Exit'.

Stock code	Qty in stock
abl	abl

Stockcode	Location	Reference	Quantity	Pallets
abl	abl	abl	abl	abl

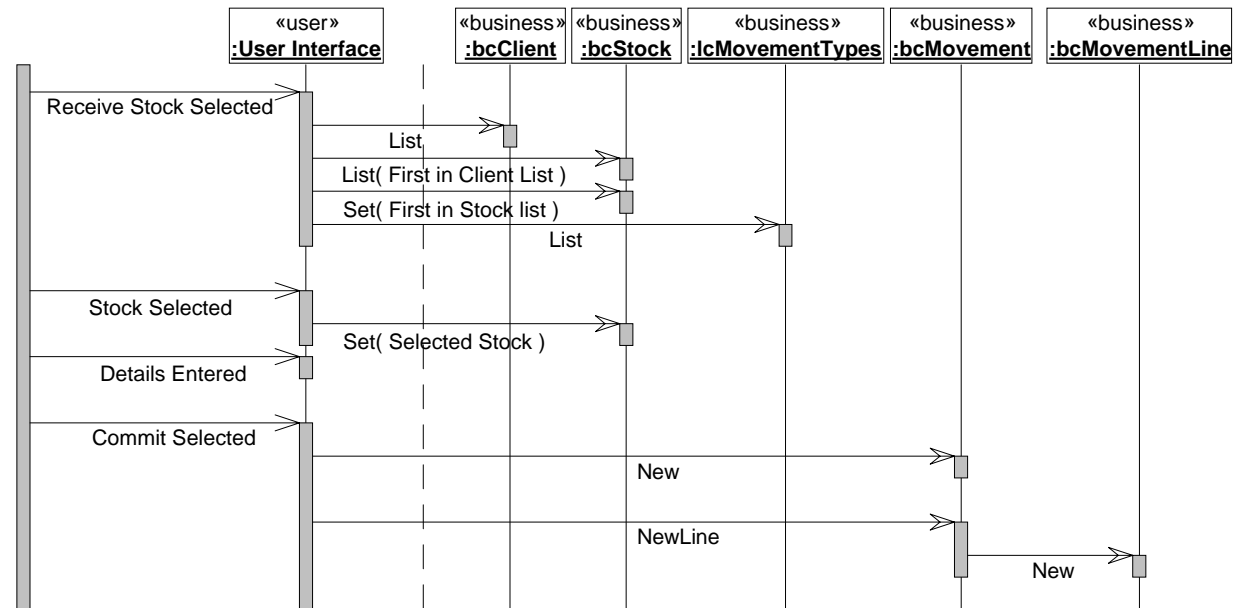
Inwards

Sequence Diagram:

1M Receive Stock

Description

User selects to enter the details of received stock
 List Clients
 List Stock for Client
 Set current stock
 List Movement Types
 WHILE receiving Stock
 User chooses stock to receive
 Set Stock
 User enters Required details
 ENDWHILE
 User selects to Commit transaction
 Create new Movement
 FOR each stock received
 Create Movement Line
 ...
 ENDFOR



Local Business Object Model

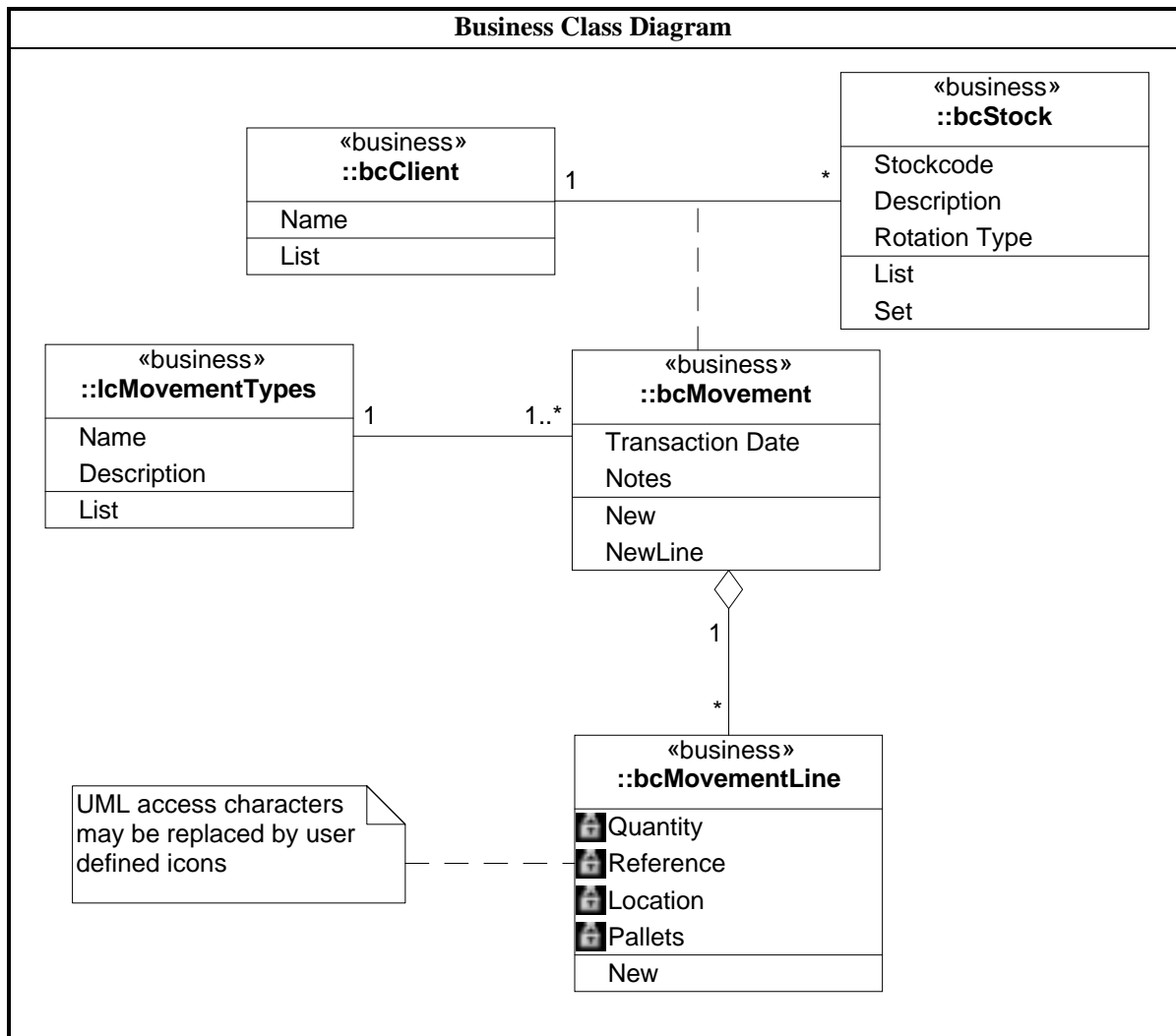


Figure 15 - Business Class Diagram (Class Diagram)

Increment Plan

Estimates

Risk Analysis

Summary

Design and Build Iteration

Stock 2000 - 1st Increment - Design Prototype I

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Executive Summary

Proposed Environment

Use Case Model

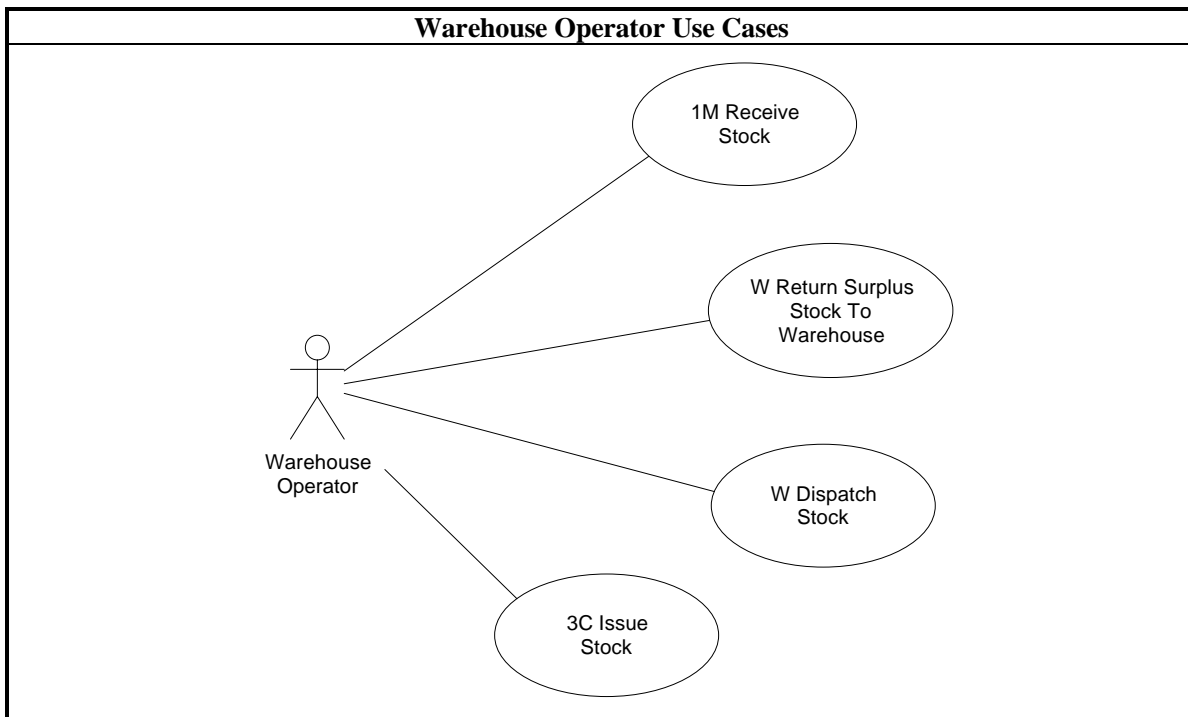


Figure 16 - Warehouse Operator Use Cases (Use Case Diagram)

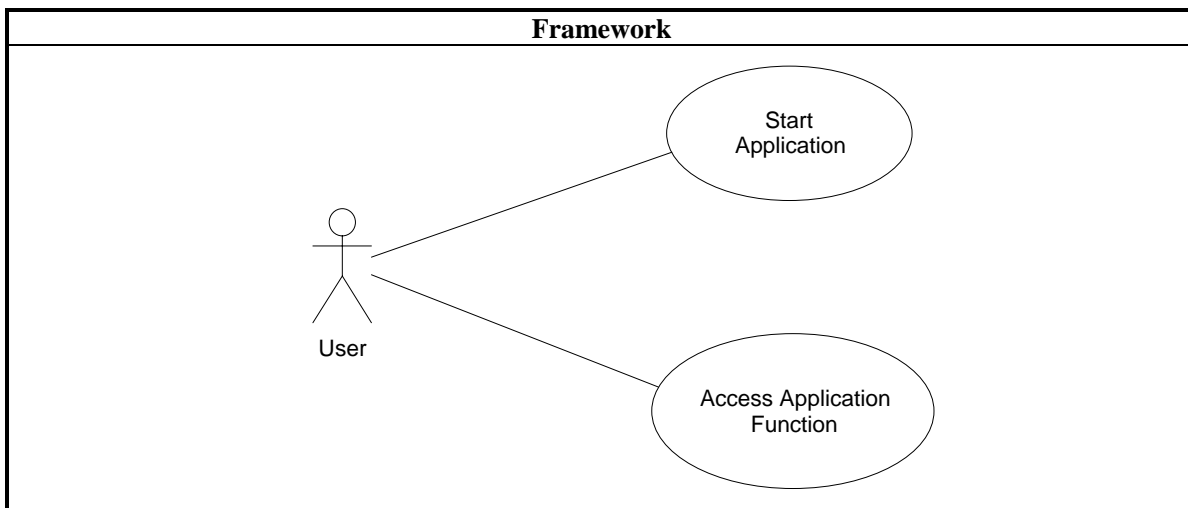


Figure 17 - Framework (Use Case Diagram)

Use Case Detail

Use Case Model Detail: 'IM Receive Stock'

Used by:

[Actors]

Warehouse Operator

Description:

The user selects to receive stock into the warehouse from a deliverer and checks if the delivery was expected.

For each stock type

 If expected:

 Stock types and amount are either confirmed or amended

 If amended

 Send message to Account Manager

 Else

 User selects stock type and enters:

 Location

 Reference

 Quantity

 Pallets

 Movement Type

 Notes

 Endif

 User selects where stock is to be stored in the warehouse

Endwhile

Intent:

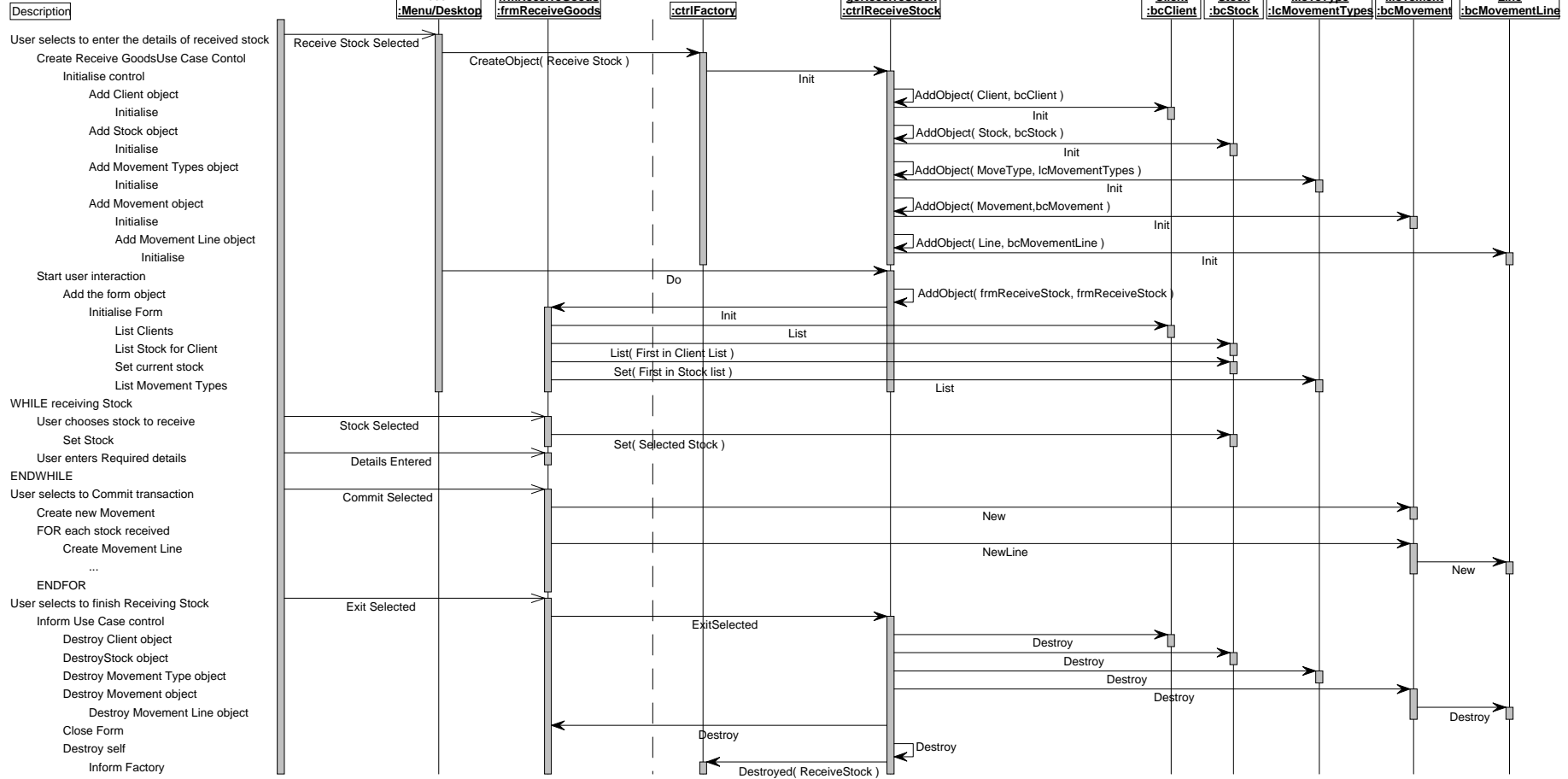
To enter the details of stock received

PRIORITY M

INCREMENT 1

Sequence Diagram:

1M Receive Stock



Use Case Model Detail: 'Access Application Function'

Used by:

[Actors]

User

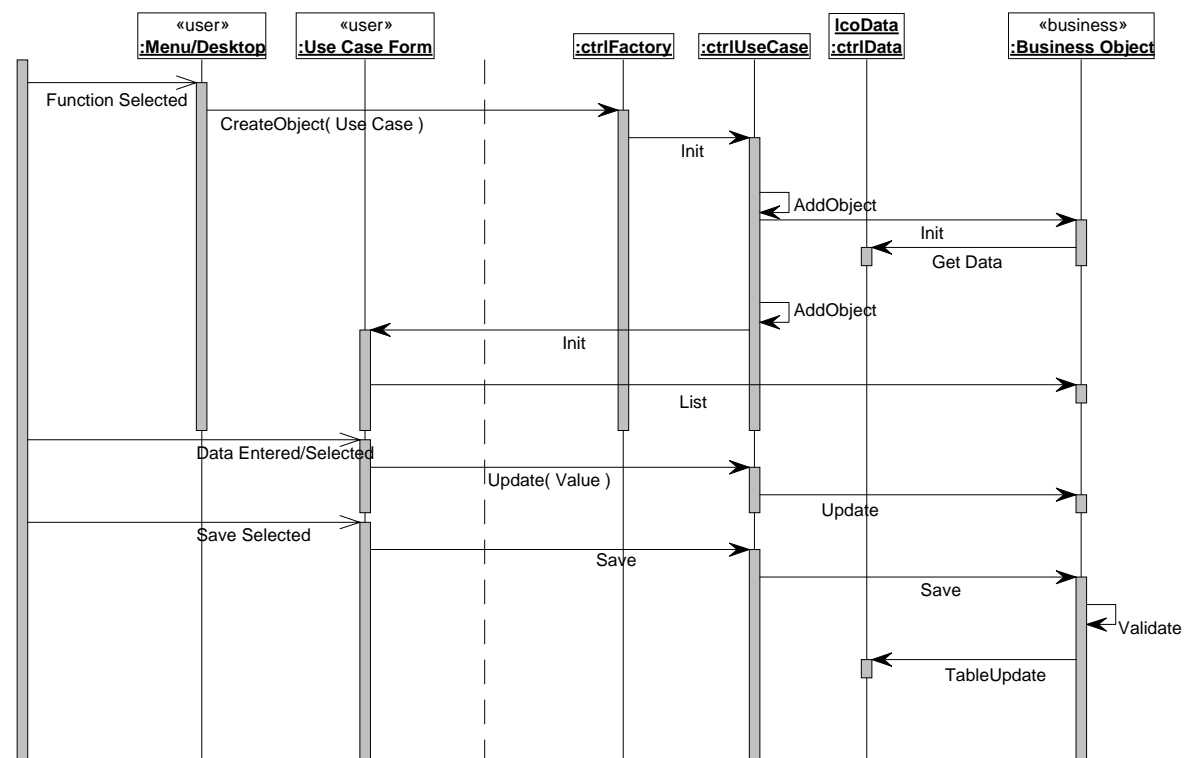
Sequence Diagram:

Access Application Function

Description

```

User selects to access application function
  Create Use Case Control Object
    Initialize Use Case control
    FOR each required business object
      Create required business object
      Initialise business object
      Set Business object default attributes
    ENDFOR
  Display main Use Case Form
  Initialise Form
  FOR each list on form
    Get List
  ENDFOR
User enters/selects data
  Update business object/s
  ...
User selects to save changes
  Save record
  ...
  Do Form validation
  IF valid
    Save to database
  ELSE
    Return .F.
  ENDIF
  
```



Use Case Model Detail: 'Start Application'

Used by:

[Actors]

User

Sequence Diagram:

Start Application

Description

User selects to start the application (create object control object)

Create the application control object

Initialise the application control object

Set the Application environment

Initialise the application environment

Save current environment

Set required environment

Set the Application Desktop

Initialise the application desktop

Save current desktop

Set required desktop

Create the database control object

Initialise the database control object

Create the Security control object

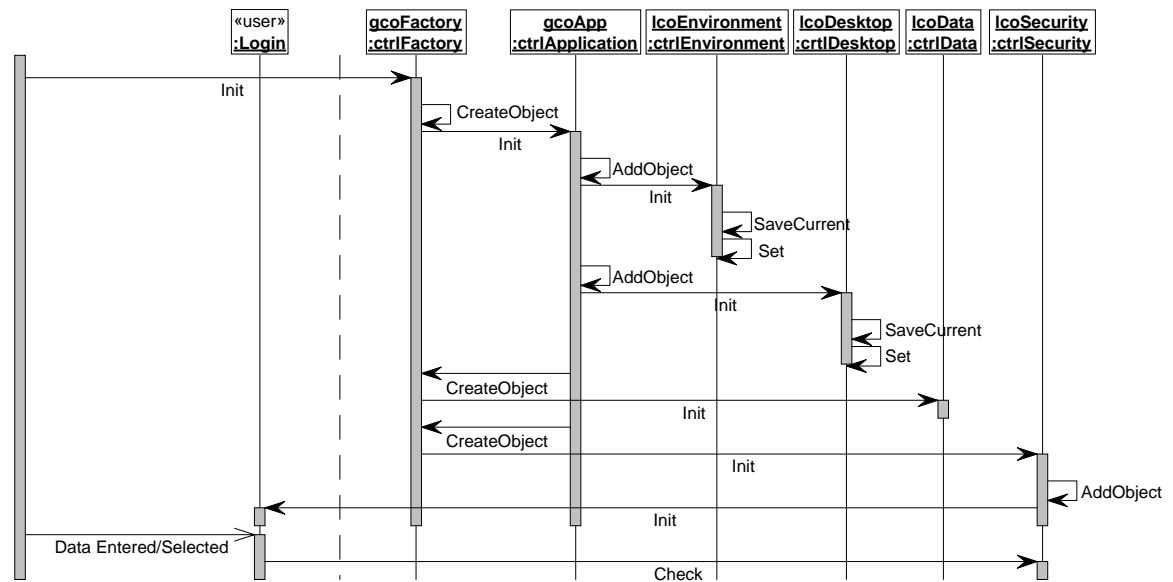
Initialise security check

Display Login Form

Initialise the login form

User enters login details

Check Login



User Class Object Model

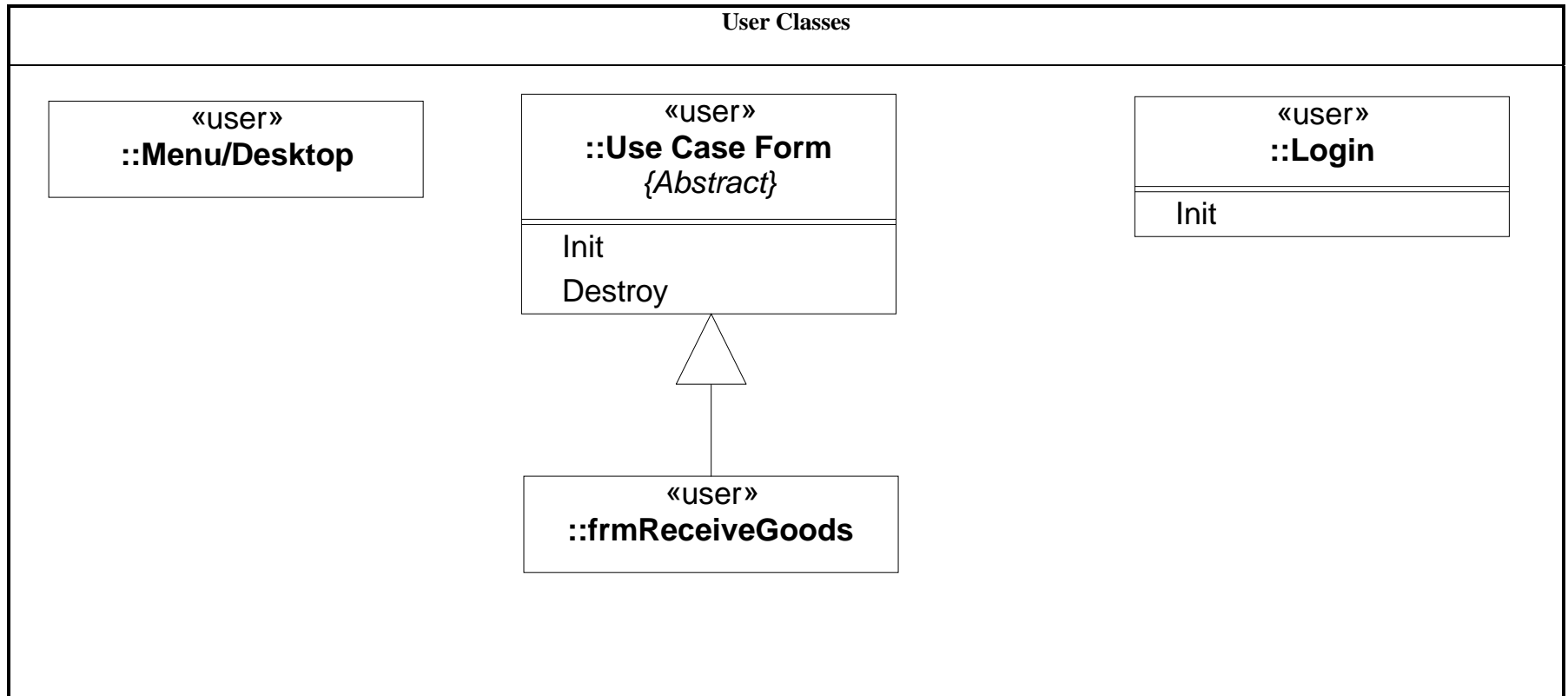


Figure 18 - User Classes (Interface Class Dgm)

Local Business Object Model

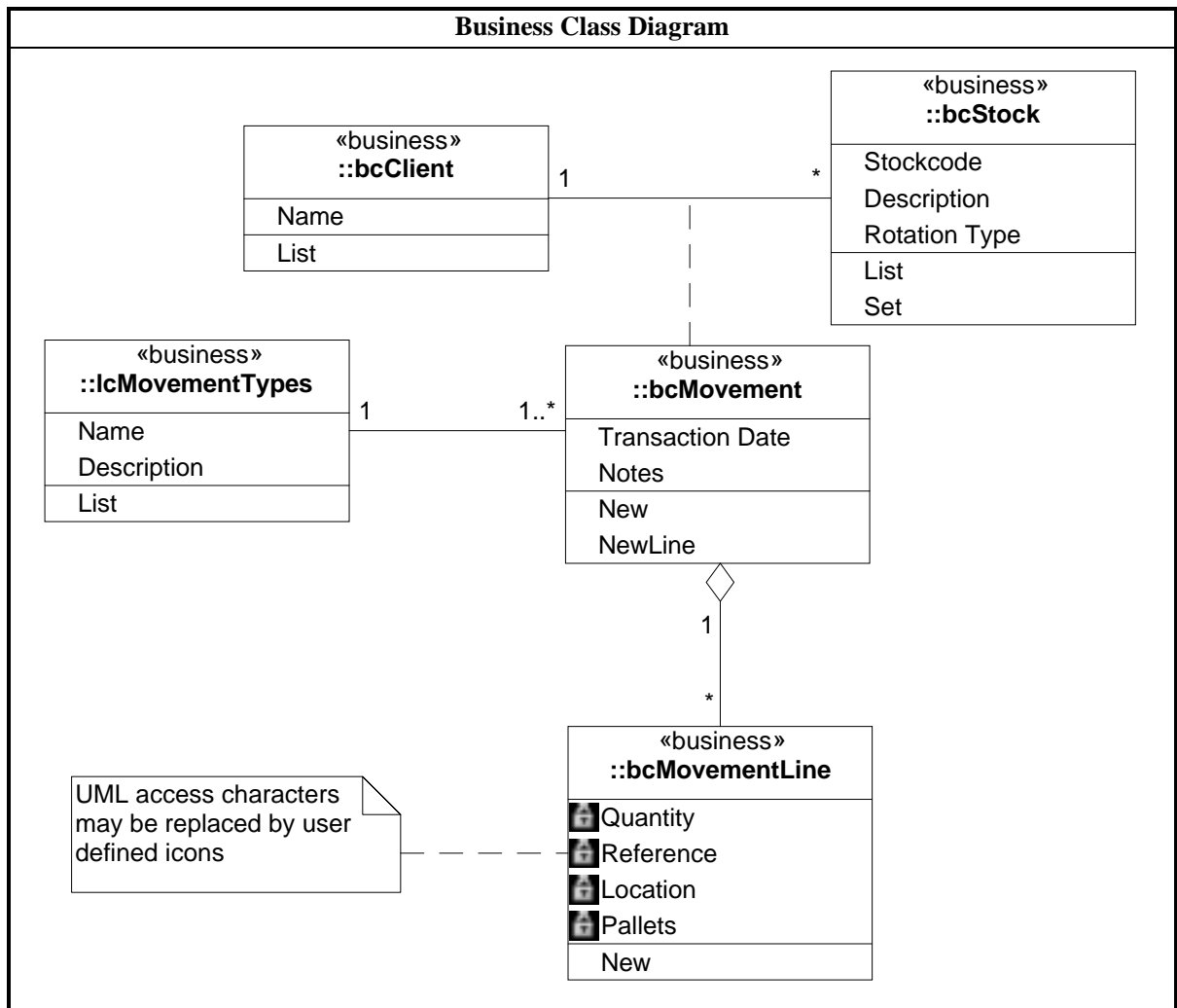


Figure 19 - Business Class Diagram (Class Diagram)

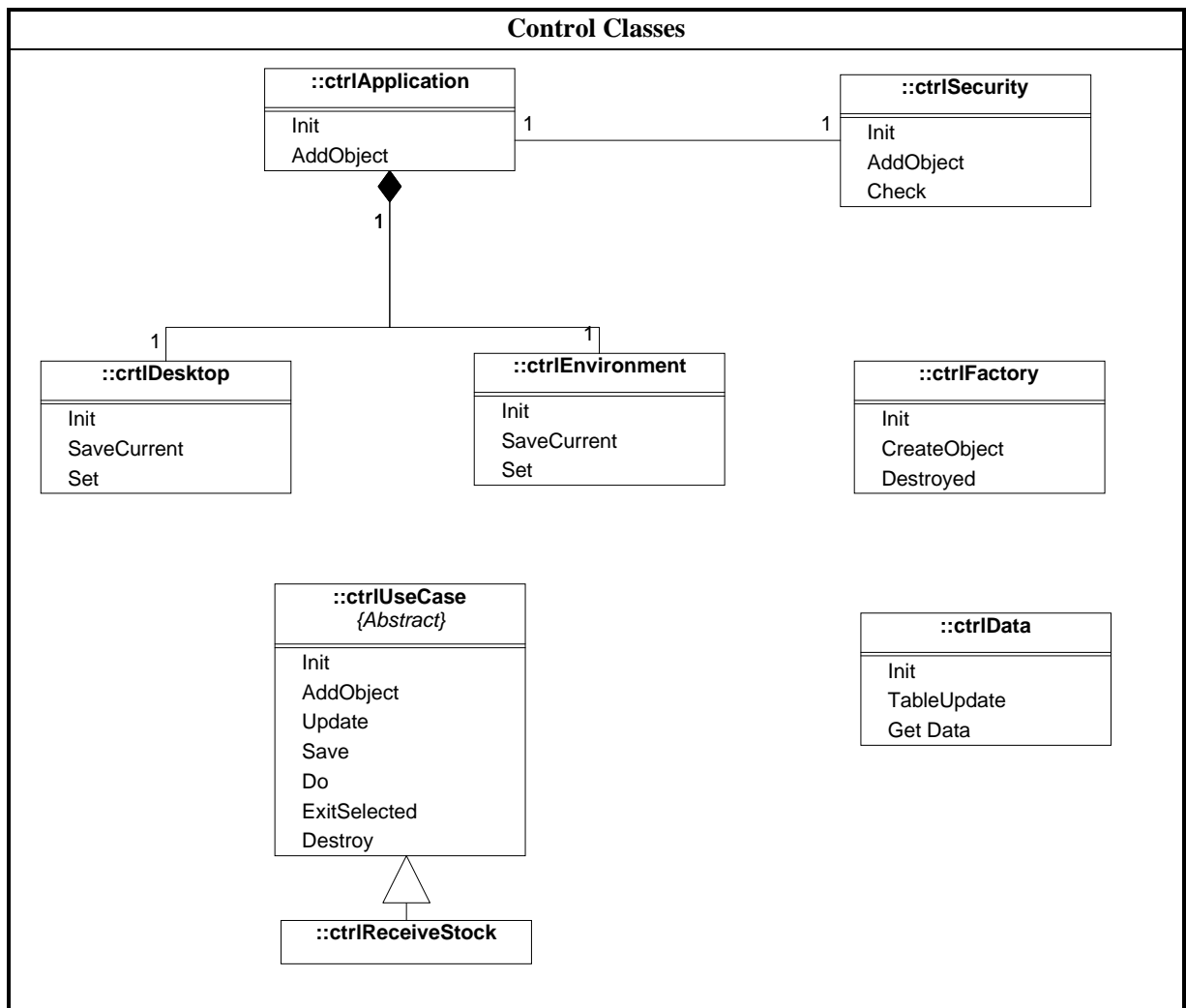


Figure 20 - Control Classes (Class Diagram)

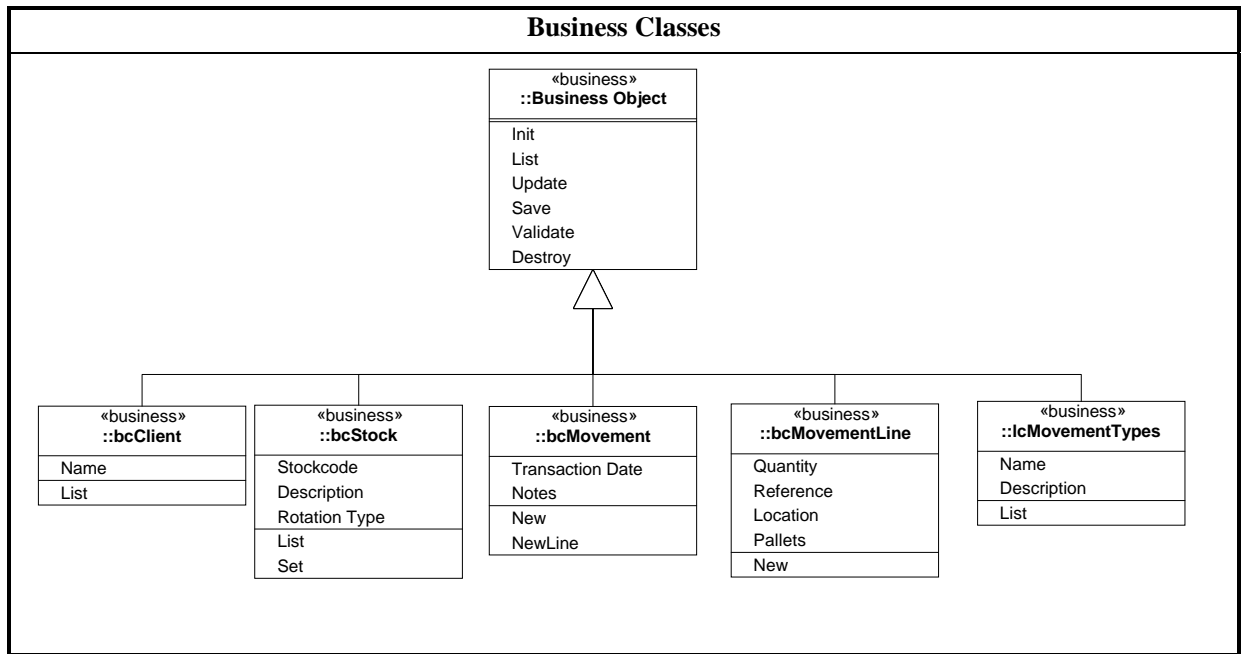


Figure 21 - Business Classes (Class Diagram)

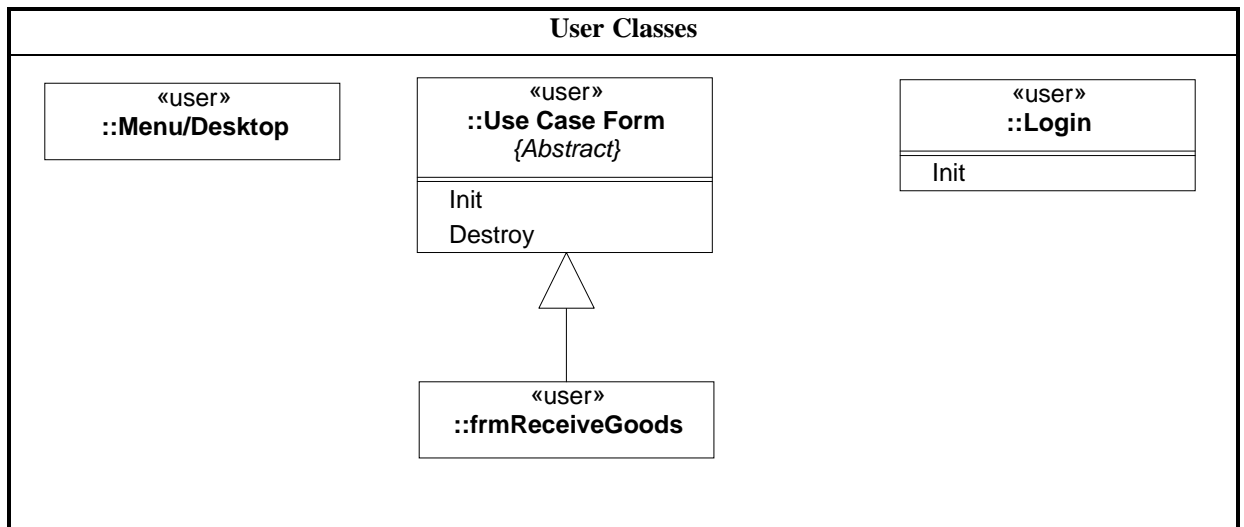


Figure 22 - User Classes (Class Diagram)

Class Descriptions

Class : 'bcClient'

Attributes:

[Public]

None

[Private]

Name

[Protected]

None

Operations:

[Public]

List

void List ()

Returns a list of known Clients

[Private]

None

[Protected]

None

Association Statements

Each bcClient:

Inherits from Business Object

Is related to zero or more bcStock

Link Class : 'bcMovement'

Attributes:

[Public]

None

[Private]

Transaction Date

Notes

[Protected]

None

Operations:

[Public]

New

void New ()

Creates and saves a new Movement

NewLine

void NewLine ()

Creates and saves a new Movement Line

[Private]

None

[Protected]

None

Association Statements

Each bcMovement:

Inherits from Business Object

forms a link class with bcClient and bcStock

Is made up of zero or more bcMovementLine

Is related to only one lcMovementTypes

Class : 'bcMovementLine'

Attributes:

[Public]

None

[Private]

Quantity

Reference

Location

Pallets

[Protected]

None

Operations:

[Public]

New

void New ()

Creates and saves a new Movement Line

[Private]

None

[Protected]

None

Association Statements

Each bcMovementLine:

Inherits from Business Object

Is part of only one bcMovement

Class : 'bcStock'

Attributes:

[Public]

None

[Private]

Stockcode

Description

Rotation Type

[Protected]

None

Operations:

[Public]

List

void List (in Client)

Returns a list of Stock for a given Client

Set

void Set (in Stockcode)

Sets the objects business attributes from a given stockcode

[Private]

None

[Protected]

None

Association Statements

Each bcStock:

Inherits from Business Object

Is related to only one bcClient

Class : 'Business Object'

Attributes:

[Public]

None

[Private]

None

[Protected]

None

Operations:

[Public]

Init

void Init ()

List

void List ()

Update

void Update ()

Save

void Save ()

Validate

void Validate ()

Destroy

void Destroy ()

[Private]

None

[Protected]

None

Association Statements

Each Business Object:

has no associations.

Class : 'ctrlDesktop'

Attributes:

[Public]

None

[Private]

None

[Protected]

None

Operations:

[Public]

Init

void Init ()

SaveCurrent

void SaveCurrent ()

Set

void Set ()

[Private]

None

[Protected]

None

Association Statements

Each ctrlDesktop:

Is part of only one ctrlApplication

Class : 'ctrlApplication'

Attributes:

[Public]

None

[Private]

None

[Protected]

None

Operations:

[Public]

Init

void Init ()

AddObject

void AddObject ()

[Private]

None

[Protected]

None

Association Statements

Each ctrlApplication:

Is made up of only one ctrlDesktop

Is made up of only one ctrlEnvironment

Is related to only one ctrlSecurity

Class : 'ctrlData'

Attributes:

[Public]

None

[Private]

None

[Protected]

None

Operations:

[Public]

Init

void Init ()

TableUpdate

void TableUpdate ()

Get Data

void Get Data ()

[Private]

None

[Protected]

None

Association Statements

Each ctrlData:

has no associations.

Class : 'ctrlEnvironment'

Attributes:

[Public]

None

[Private]

None

[Protected]

None

Operations:

[Public]

Init

void Init ()

SaveCurrent

void SaveCurrent ()

Set

void Set ()

[Private]

None

[Protected]

None

Association Statements

Each ctrlEnvironment:

Is part of only one ctrlApplication

Class : 'ctrlFactory'

Attributes:

[Public]

None

[Private]

None

[Protected]

None

Operations:

[Public]

Init

void Init ()

CreateObject

void CreateObject (in Use Case)

Destroyed

void Destroyed (in Object)

[Private]

None

[Protected]

None

Association Statements

Each ctrlFactory:

has no associations.

Class : 'ctrlReceiveStock'

Attributes:

[Public]

None

[Private]

None

[Protected]

None

Operations:

[Public]

None

[Private]

None

[Protected]

None

Association Statements

Each ctrlReceiveStock:

Inherits from ctrlUseCase

Class : 'ctrlSecurity'

Attributes:

[Public]

None

[Private]

None

[Protected]

None

Operations:

[Public]

Init

void Init ()

AddObject

void AddObject ()

Check

void Check ()

[Private]

None

[Protected]

None

Association Statements

Each ctrlSecurity:

Is related to only one ctrlApplication

Class : 'ctrlUseCase' (Abstract)

Attributes:

[Public]

None

[Private]

None

[Protected]

None

Operations:

[Public]

Init

void Init ()

AddObject

void AddObject (in Name, in Class)

Update

void Update ()

Save

void Save ()

Do

void Do ()

ExitSelected

void ExitSelected ()

Destroy

void Destroy ()

[Private]

None

[Protected]

None

Association Statements

Each ctrlUseCase:

has no associations.

Class : 'lcMovementTypes'

Attributes:

[Public]

None

[Private]

Name

Description

[Protected]

None

Operations:

[Public]

List

void List ()

Retrurns a list of all known Movement Types

[Private]

None

[Protected]

None

Association Statements

Each lcMovementTypes:

Inherits from Business Object

Is related to one or more bcMovement

Storage Object Model

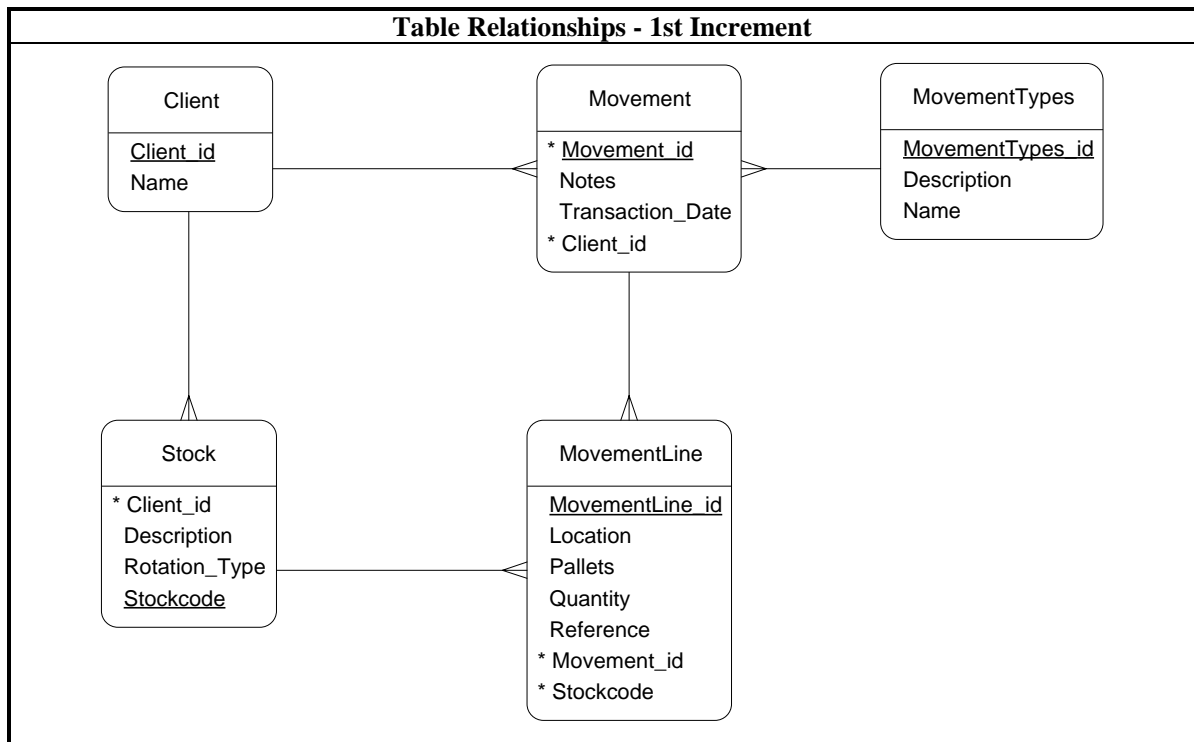


Figure 23 - Table Relationships - 1st Increment (Storage Class)

Summary