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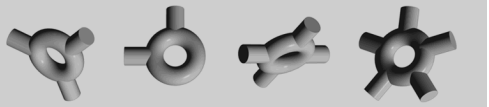

Deal Groups Package

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Package Description

A Deal Group is used to group together a variety of deals for a certain purpose. Various deals automatically generate other deals according to business specifications. These deals (including the main deal) are grouped together automatically as a Deal Group.

A user may group deals together ad hoc. An ad hoc deal group is not restricted to deals of the same type or from the same book. Addditionally, an ad hoc deal grouping may including deals that are part of other deal groups, whether ad hoc or automatically generated.

1 Interfaces

1.1 DealGroup

This interface represents a particular collection of deals known as a “deal group”.

1.1.1 Relationships

	Class	Description	Notes
⇑	DynamicData		
⇓	AutoDealGroup §1.3		
⇓	AdhocDealGroup §1.2		
↓	DealGroupModel §2.3		
↔	DealGroupModel §2.3	dealGroups	

⇑:Inherits ⇓:Inherited by ↓:Realized by ↔:Association →:Navigable ◊:Aggregate ♦:Composite

1.1.2 Operations

Book book() book

This method returns the book in which the deal group was created.

collection<Deal> deals() deals

This method returns the deals that comprise the deal group. This method gets the actual deals that correspond to the deal proxies by sending the "deal" method to the appropriate proxies.

Note that deals can also include deals that are also part of another deal group, whether ad hoc or automatically generated.

Collection<DealProxy> dealProxies() dealProxies

This method returns proxies for the deals that comprise the deal group.

User user() user

This method returns the user who created the deal group. For an automatically-generated deal group, this is the user who created the main deal giving rise to the deal group.

DealGroupType dealGroupType() dealGroupType

This method returns the type of the deal group, whether ad hoc, or automatically generated.

Collection<DealGroup> dealGroups() dealGroups

Deal groups can contain other deal groups. In this case, the components deals of the contained deal group will also be deals in the containing deal group.

1.2 AdhocDealGroup

This interface represents a deal group that has been created ad hoc by a user. Typically, this would be done to create an arbitrage play.

1.2.1 Relationships

	Class	Description	Notes
⇑	DealGroup §1.1		
↓	AdhocDealGroupModel §2.4		

⇑:Inherits ↓:Realized by

1.2.2 Operations

String name() name

This method returns the name of the deal group which has been input by the user. Only ad hoc deal groups have a name.

1.3 AutoDealGroup

This interface represents a deal group that has been automatically generated. For example, the two sides of an internal deal, or the two legs of an FX swap.

1.3.1 Relationships

	Class	Description	Notes
⇑	DealGroup §1.1		
↓	AutoDealGroupModel §2.5		

⇑:Inherits ↓:Realized by

1.3.2 Operations

Deal mainDeal() mainDeal

This method returns the deal corresponding to the mainDealProxy. This is the main, or originating, deal that gave rise to the deal group.

DealProxy mainDealProxy() mainDealProxy

This method returns the proxy for the main, or originating, deal that gave rise to the deal group.

1.4 DealGroupType

A DealGroupType is used to specify the “type" of a deal group. Deal groups may be “adhoc" grouping of arbitrary sets of deals, such as an arbitrage play, or they may be automatically generated for a specific purpose. In the latter category would fall, for example, sets of internal deals generated to shift market exposures between FX and money market books. The specific types of automatically generated deal groups will vary from organization to organization. It is expected that AutoDealGroupTypeModel will be subclassed for specific types of deal groups. We have used a class hierarchy here so as to allow type-specific behavior, by means of double-dispatching.

1.4.1 Relationships

	Class	Description	Notes
↓	AdhocDealGroupTypeModel §2.1		
↓	AutoDealGroupTypeModel §2.2		

↓:Realized by

1.4.2 Operations

openEditor(DealGroup group) openEditor
group: DealGroup

This method opens an editor on the specified deal group. For automatic deal groups, this will often be an editor on the main deal.

1.5 DealProxy

A DealProxy is an object that stands in for a deal. It has sufficient information to identify the deal, and can recover the deal if required to do so. DealProxies are used because we will want to be able to look at deal groups without necessarily wanting to recover all their component deals from persistent storage.

1.5.1 Relationships

	Class	Description	Notes
↓	DealProxyModel §2.6		
↔	DealGroupModel §2.3	dealProxies	
↔	AutoDealGroupModel §2.5	mainDealProxy	

↓:Realized by ↔:Association →:Navigable ◊:Aggregate ♦:Composite

1.5.2 Operations

Integer dealNumber() dealNumber

Return the deal number of the Deal represented by the proxy.

Deal deal() deal

Return the deal represented by the proxy. This involves finding the deal with the specified deal number.

DealType dealType() dealType

Return the deal type of the deal represented by the proxy.

2 Classes

2.1 AdhocDealGroupTypeModel

This is the deal group type for ad-hoc deal groups.

2.1.1 Relationships

	Class	Description	Notes
↑	DealGroupType §1.4		

↑:Realizes

2.1.2 Operations

openEditor(DealGroup group) openEditor
group: DealGroup

Open an editor allowing specification of what deals are to be included in the adhoc group.

2.2 AutoDealGroupTypeModel

This is the abstract superclass of auto deal group types. Specific types of auto deal group are organization-specific. It is expected that this class will be subclassed for particular purposes.

2.2.1 Relationships

	Class	Description	Notes
↑	DealGroupType §1.4		

↑:Realizes

2.2.2 Operations

openEditor(DealGroup group) openEditor
group: DealGroup

This is the default implementation for auto deal groups. It just opens an editor on the main deal.

2.3 DealGroupModel

DealGroupModel realizes the DealGroup interface. Versioning information is found by inheritance from DynamicDataModel.

2.3.1 Relationships

	Class	Description	Notes
⇑	DynamicDataModel		
↑	Validatable		
↑	DealGroup §1.1		
⇓	AdhocDealGroupModel §2.4		
⇓	AutoDealGroupModel §2.5		
↔	Book	book	→
↔	User	user	→
↔	DealProxy §1.5	dealProxies 1..n	→
↔	DealGroup §1.1	dealGroups 0..n	→

⇑:Inherits ⇓:Inherited by ↑:Realizes ↔:Association →:Navigable ◊:Aggregate ♦:Composite

2.3.2 Attributes

dealGroupType: DealGroupType Returns the type of the deal group, ie ad hoc or auto.

2.3.3 Operations

Validatable validate() validate

This method will depend on client-specific business rules and has not been detailed further.

2.4 AdhocDealGroupModel

An ad hoc deal group is manually created by a user to group together particular deals. This may include other deal groups whether ad hoc or automatically generated.

2.4.1 Relationships

	Class	Description	Notes
⇑	DealGroupModel §2.3		
↑	AdhocDealGroup §1.2		

⇑:Inherits ↑:Realizes

2.4.2 Attributes

name: String This is the name of the deal group as entered by the creator of the deal group.

2.4.3 Operations

validate() validate

This method inherits the functionality of the validate method in DealGroupModel. Additionally, it checks that

- The name of an ad hoc deal group is unique across the book containing the deal group.
- The name of the deal group is unique across the deal group hierarchy, that is, unique for all children and parent deal groups.

2.5 AutoDealGroupModel

Certain types of deals automatically generate further deal legs on entry. These deal legs and the original deal giving rise to them (the "main deal") are automatically grouped together into an "AutoDealGroup".

2.5.1 Relationships

	Class	Description	Notes
⇑	DealGroupModel §2.3		
↑	AutoDealGroup §1.3		
↔	DealProxy §1.5	mainDealProxy	→

⇑:Inherits ↑:Realizes ↔:Association →:Navigable ◊:Aggregate ♦:Composite

2.5.2 Attributes

dealRoles: Dictionary The component deals of an automatic deal group will play specific roles. For example, in an FX swap, one deal will be the 'first leg' and the other will be the 'second leg'. It will often be necessary to identify which deal plays which role. The deal group records this information by holding a dictionary whose keys are strings (the role identifiers) and whose values are the deals (proxies) of the group.

2.6 DealProxyModel

A concrete implementation of the DealProxy interface.

2.6.1 Relationships

	Class	Description	Notes
↑	DealProxy §1.5		

↑:Realizes

2.6.2 Attributes

dealNumber: Integer

dealType: DealType

3 Associations

Table 1: Deal Groups— Associations

Association Role	Class	Card.	Notes
book	Book		→

Table 1: . . . continued

Association Role	Class	Card.	Notes
	DealGroupModel §2.3		
user			
	User		→
	DealGroupModel §2.3		
dealProxies			
	DealProxy §1.5	1..n	→
	DealGroupModel §2.3		
mainDealProxy			
	DealProxy §1.5		→
	AutoDealGroupModel §2.5		
dealGroups			
	DealGroup §1.1	0..n	→
	DealGroupModel §2.3		

→:Navigable ◊:Aggregate ♦:Composite

3.1 book

Role: *Navigable* Book.
Role: DealGroupModel.

3.2 user

Role: *Navigable* User.
Role: DealGroupModel.

3.3 dealProxies

Role: *Navigable* DealProxy, 1..n.
Role: DealGroupModel.

3.4 mainDealProxy

Role: *Navigable* DealProxy.
Role: AutoDealGroupModel.

3.5 dealGroups

Role: *Navigable* DealGroup, 0..n.
Role: DealGroupModel.

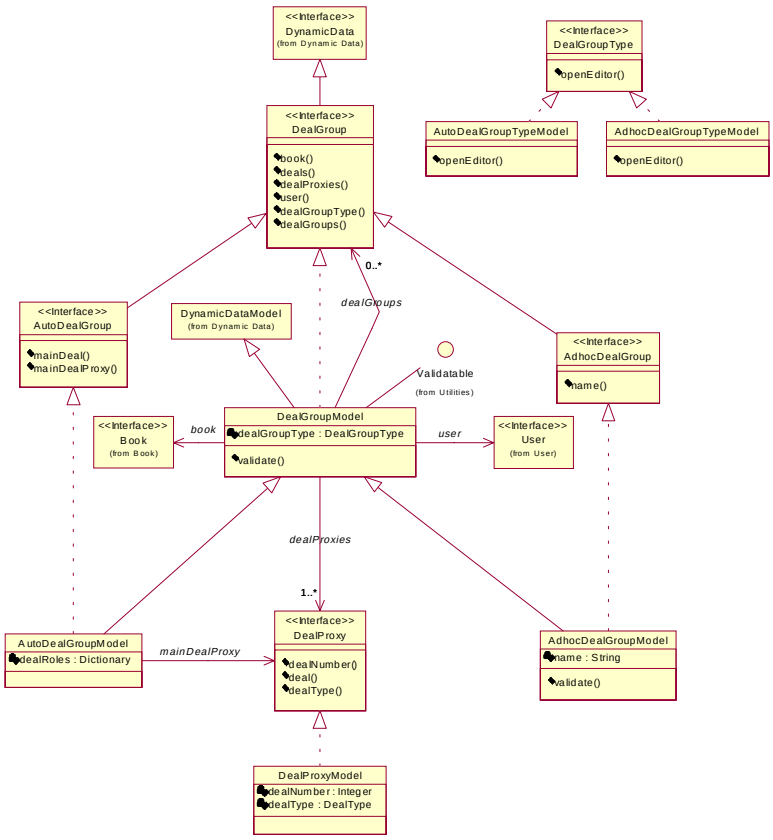

Figure 1: Class Diagram— Deal Groups

References