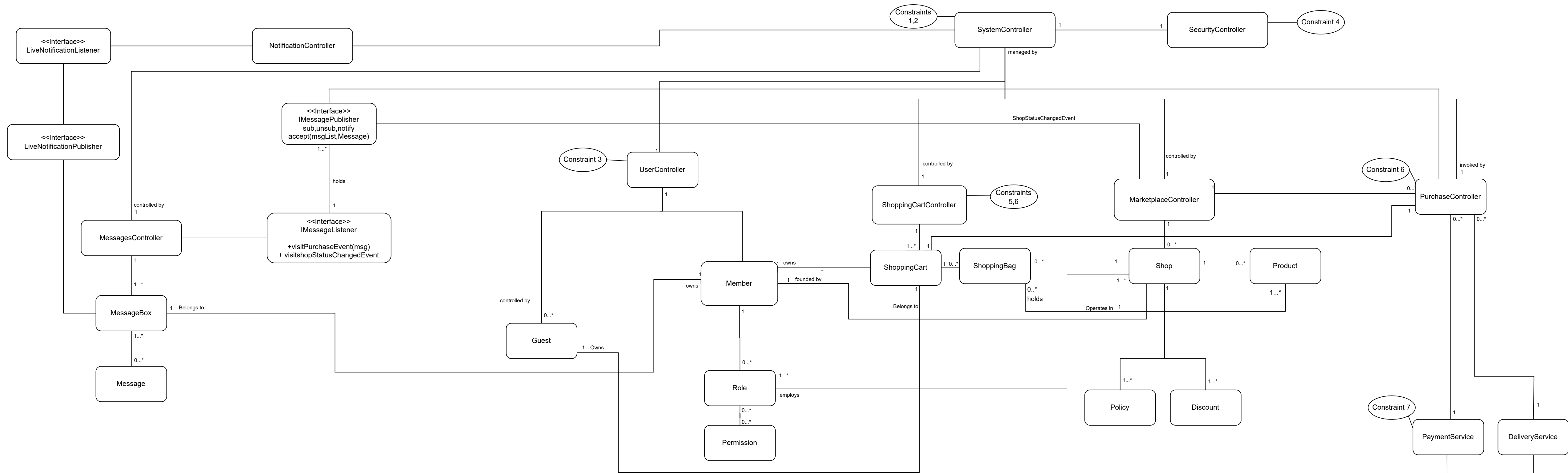


Domain



Constraint 1 responsibility:

- * Responsible class - Security Controller
- * Members are uniquely identified by their usernames. The Security Controller enforces that unique identification by maintaining a set of usernames that cannot have duplicate elements.

Constraint 2 responsibility:

- * Responsible class - SystemController
- * User Controller needs to have a member with an admin role.
- * SystemController - initializes the default admin creation (or pulls it from data).

Constraint 3 responsibility:

- * Responsible class - User Controller
- * The addRole function requires a username field (which only identifies members). This enforces the constraint since not guests can be identified by a username

Constraint 4 responsibility:

- * Responsible class - SecurityController
- * Maintains logged in members and guests lists, and doesn't permit a logged off member or guest to interact with the market.

Constraint 5 responsibility:

- * Responsible class - ShoppingCartController
- * A cart is uniquely identified by a specific user and can not be altered by any other member. This is accomplished by maintaining a map that maps between usernames and their carts.

Constraint 6 responsibility:

- * Responsible classes - PurchaseController, ShoppingCartController
- * The Shopping Cart Controller will not allow to add a product with more than the available quantity.
- * Upon adding a new product to a shop or modifying it the PurchaseController will ensure the value given is non-negative

Constraint 7 responsibility:

- * Responsible classes - PaymentService
- * The Payment Service is responsible for all communications with the external service. A payment call contains the user's credentials and will return a positive response only upon transaction success, this enforces all payment constraints specified.