

Ontology-based Expert System for a Generic Drug Production of Pharmaceutical Dosage Forms

Progress 1

Tuesday, July 8, 2014

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Feature List

Feature 1 : User management system

Feature 2 : Rule base system

Feature 3 : Case base reasoning system

Feature 4 : Hybrid reasoning system

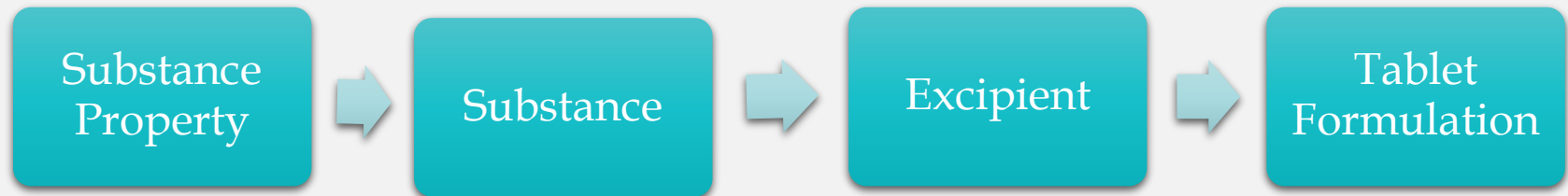
Feature 5 : Pharmaceutical Dosage Form Production Ontology(PDPO)

Feature 6 : DSS connection system

Feature 7 : Mobile connector

Feature in the Progress 1

- **Feature 5 : Pharmaceutical Dosage Form Production Ontology(PDPO)**

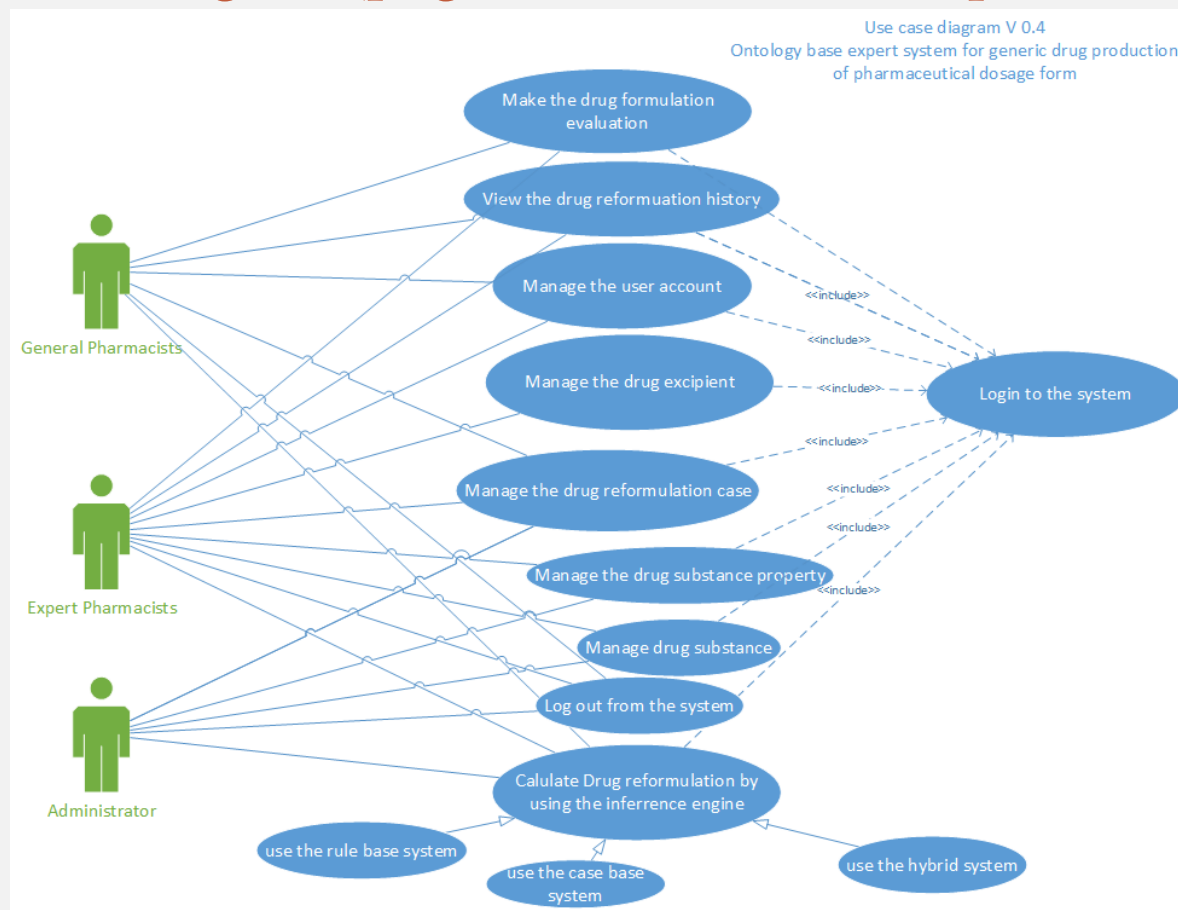


Sub-Feature

- Manage the Substance Property
- Manage the Substance
- Manage the Excipient
- Manage the Tablet Formulation

Feature in the progress 1

- Use Case Diagram(page 5 in a software requirement)



Sub-Feature 5 : Manage the substance property

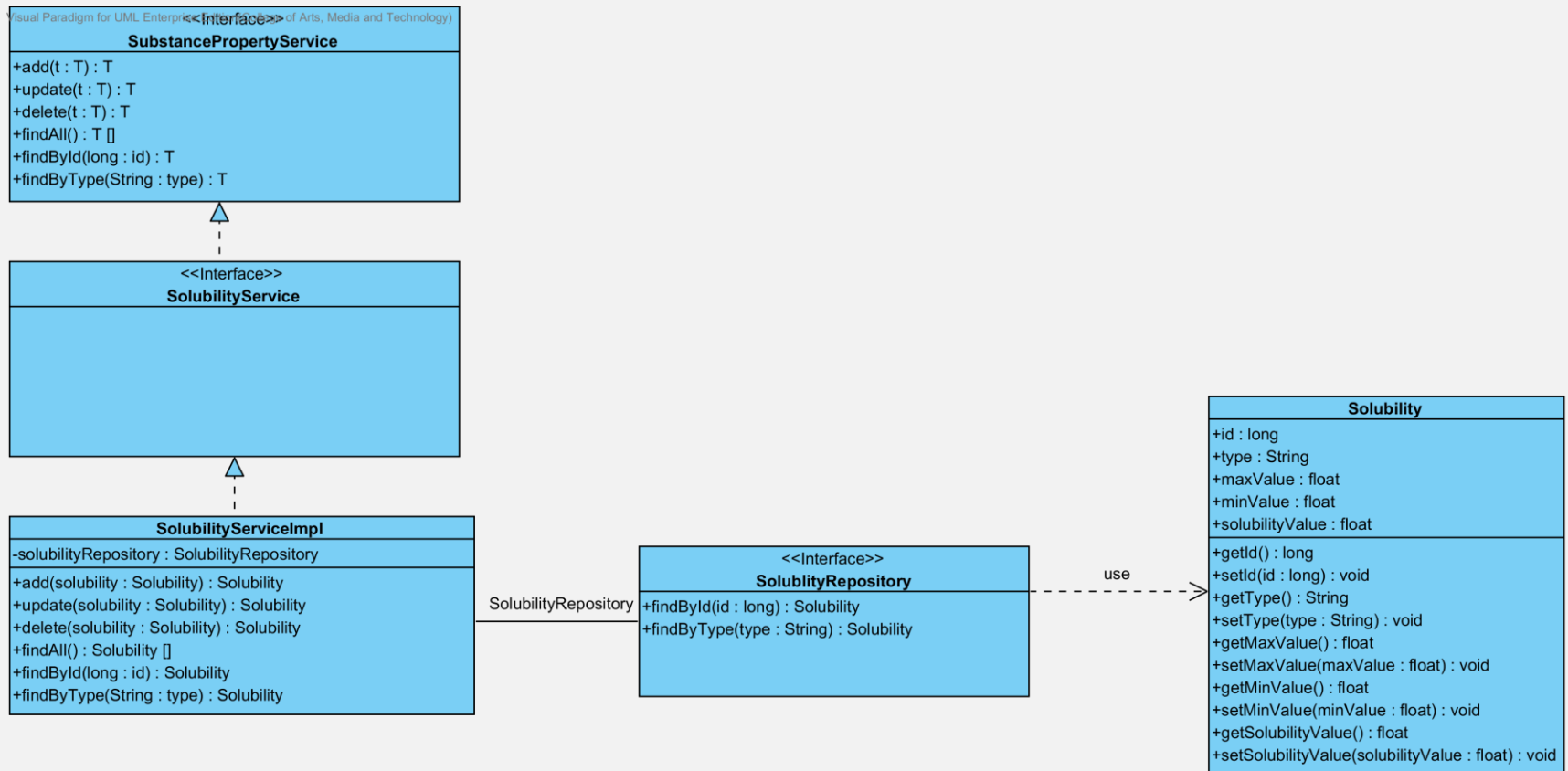
- Substance property
 - Solubility
 - Degradation Mechanism
 - Kinetic Reaction
 - Pka
 - Partition Coefficient
 - Solid-state
 - Hygroscopicity
 - Particle Size
 - Flowability
 - Density
 - CompoundFunction

Sub-Feature 5 : Manage the substance property

- User requirement specification
 - URS 09 : The user adds a new substance property into the system.
 - URS 10 : The user updates an existing substance property in the system.
 - URS 11 : The user delete an existing substance property from the system.

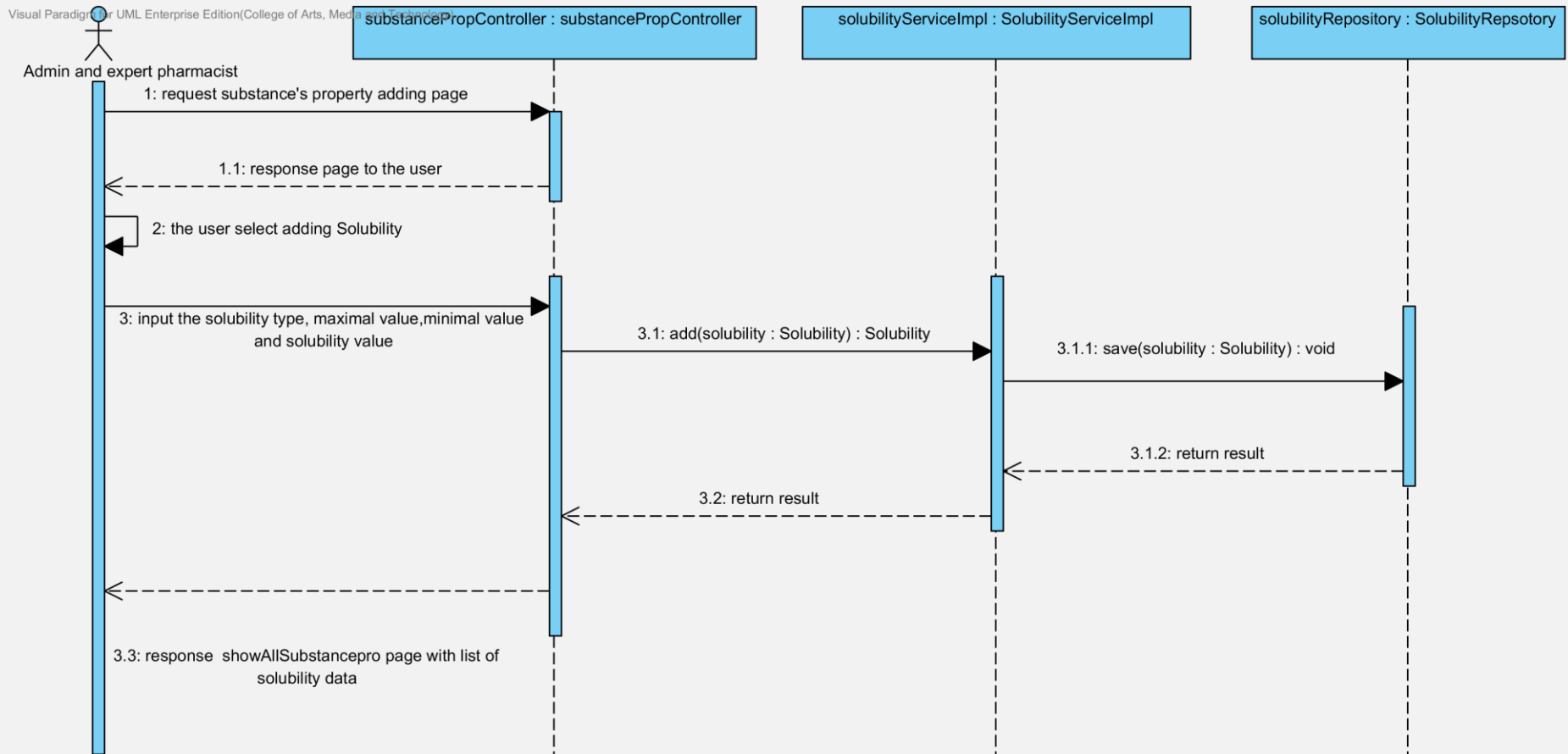
Sub-Feature 5 : Manage the substance property

• Class Diagram



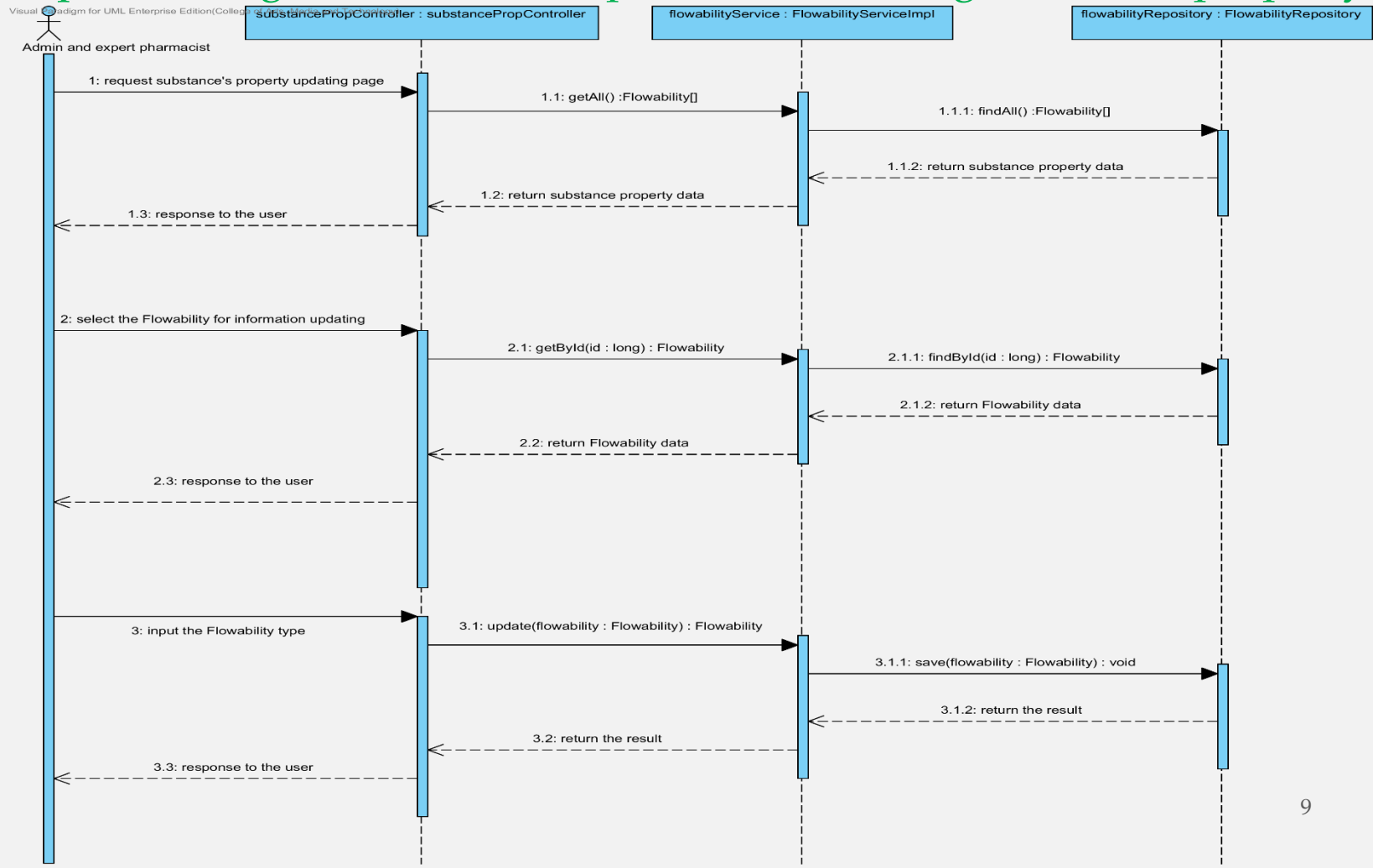
Sub-Feature 5 : Manage the substance property

- Sequence diagram : The user adds the new substance property



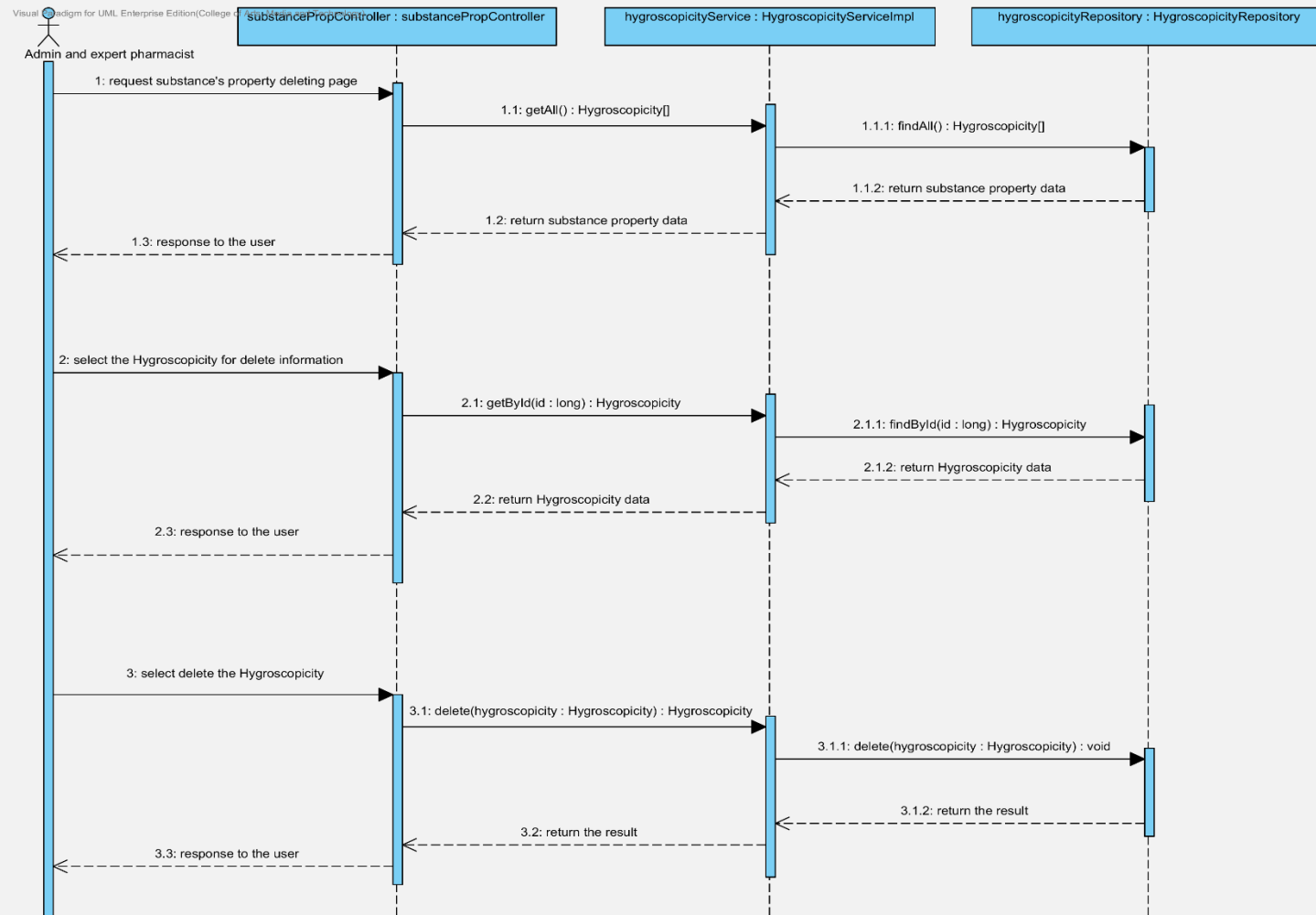
Sub-Feature 5 : Manage the substance property

- Sequence diagram : The user updates the existing substance property



Sub-Feature 5 : Manage the substance property

- Sequence diagram : The user deletes the existing substance property



Sub-Feature 5 : Manage the substance property

- Unit Test

- Test only the Service Class
- Not test the Repository Class, because this Class is generated from Spring data MongoDB framework.
- Test every substance property (eg.soluility, Kinetic Reaction)

Sub-Feature 5 : Manage the substance property

- Unit Test Case : add(Solubility solubility): Solubility

Test data

Object Name	ID	Type	MaxValue	MinValue	SolubilityValue
Solubility1	1	"solubility1"	4	2	5
Solubility2	2	"solubility2"	7	1	3

Sub-Feature 5 : Manage the substance property

- Unit Test Case : add(Solubility solubility): Solubility

Test case

Case No.	Description	Input data	Expect data
1	Test add solubility object which is correct the formal of solubility object.	Solubility3	Solubility3
2	Test add solubility object which is correct the formal of solubility object.	Solubility4	Solubility4
3	Test add solubility object which is contained in the database already.	Solubility1	Null
4	Test add solubility object which is contained in the database already.	Solubility2	Null

Demo Program



Thank you!

Q&A

