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HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

ONE LOVE. ONE FUTURE.

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HANOI UNIVERSITY
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AIMS: An Internet Media Store

ITSS SOFTWARE DEVELOPMENT - IT4549E

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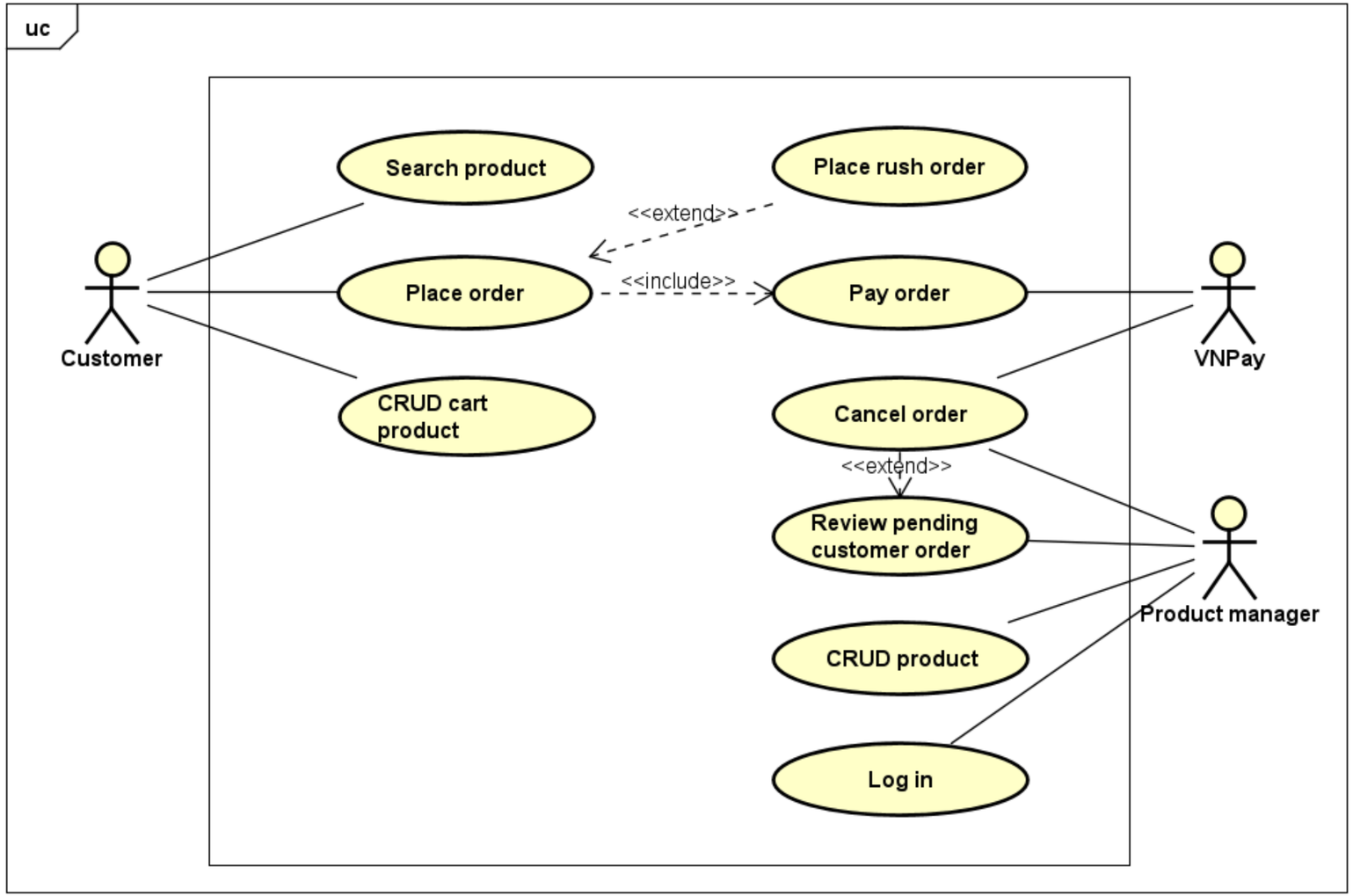
CONTENTS

1. SUMMARY OF COMPLETED FEATURES

We have successfully implemented these following features:

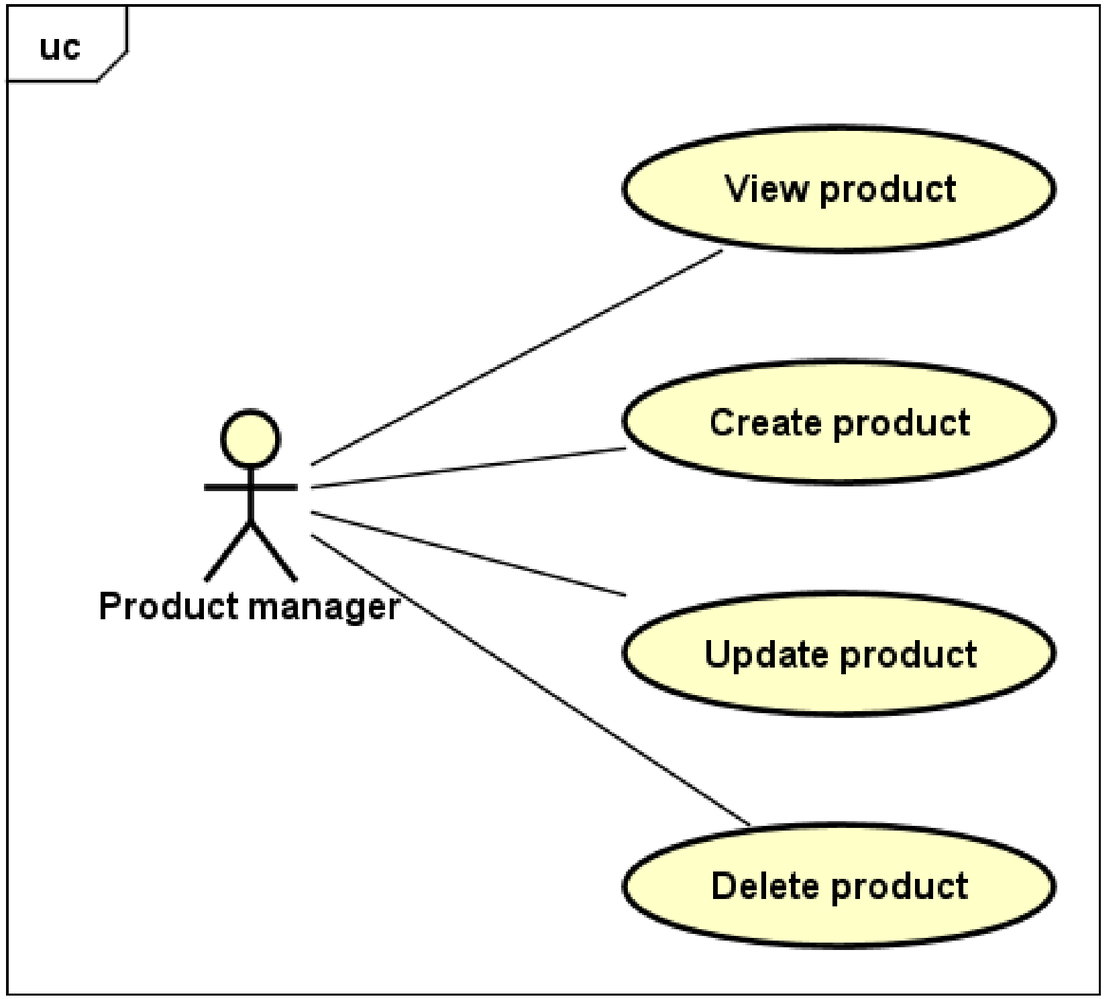
1. Search for products by keywords
2. Add products to cart
3. View cart
4. Place order/rush order
5. Make payment via VNPay
6. Login/Logout for manager
7. Manage products as admin
8. Manage orders as admin

Use case diagram



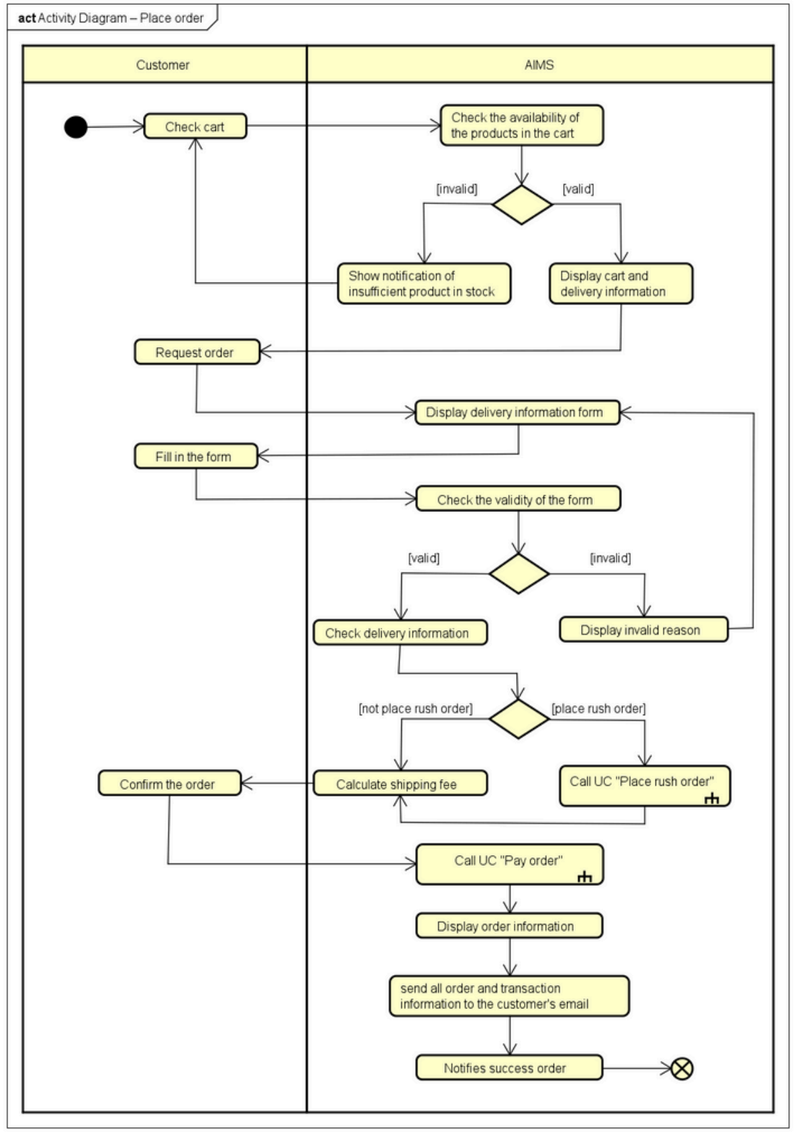
Use case diagram

- CRUD product



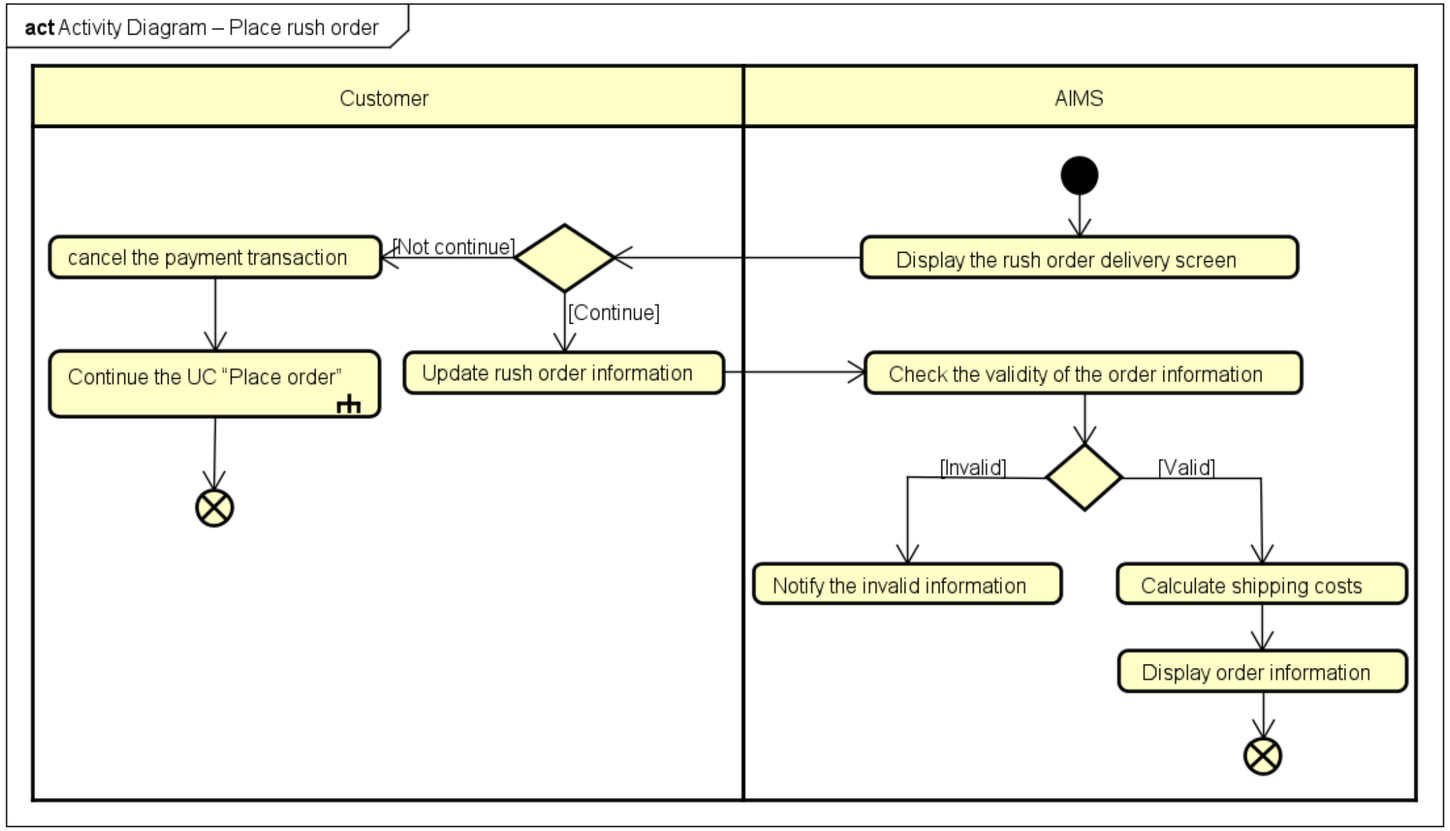
Activity diagram

- Place order



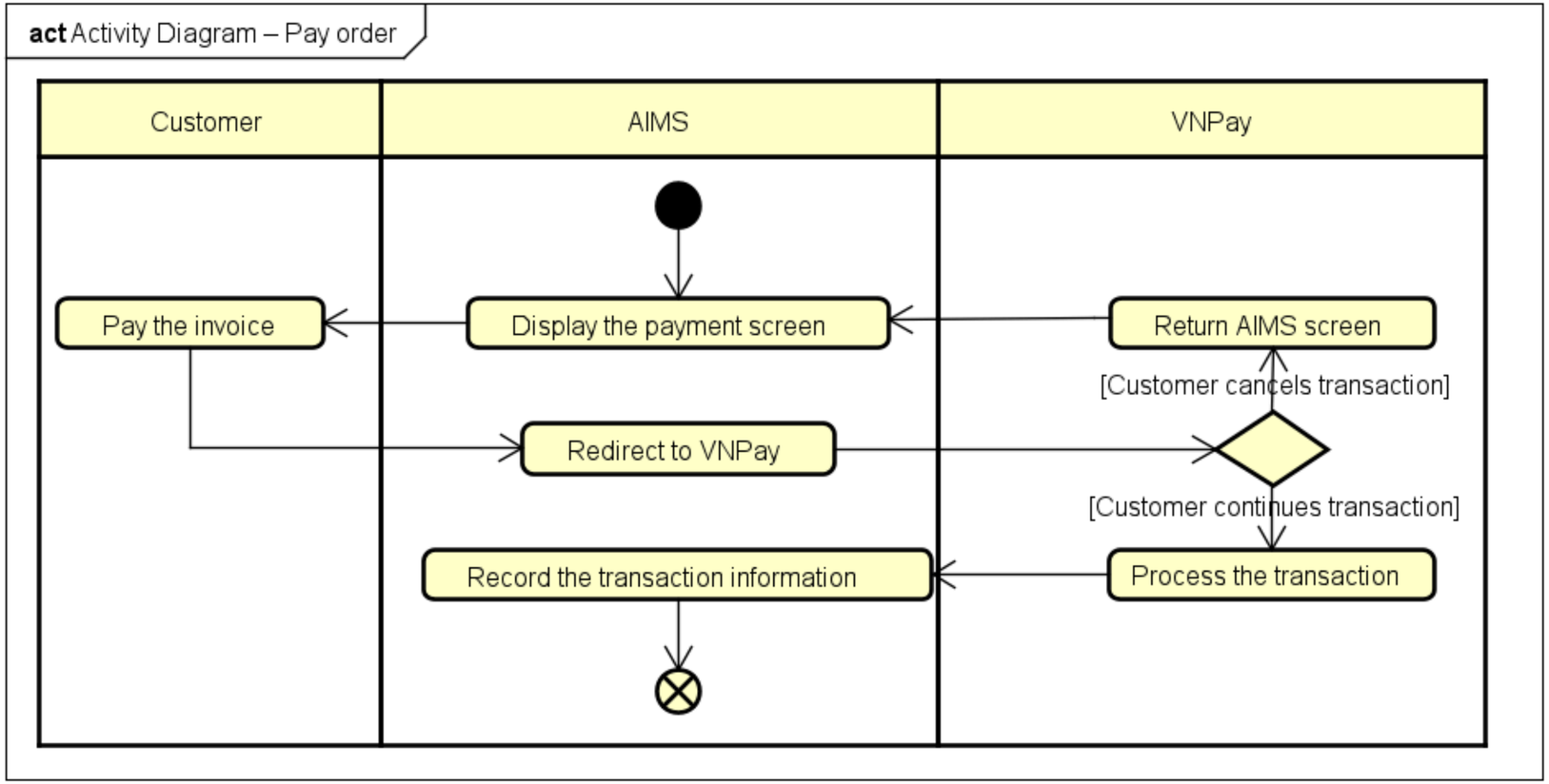
Activity diagram

- Place rush order



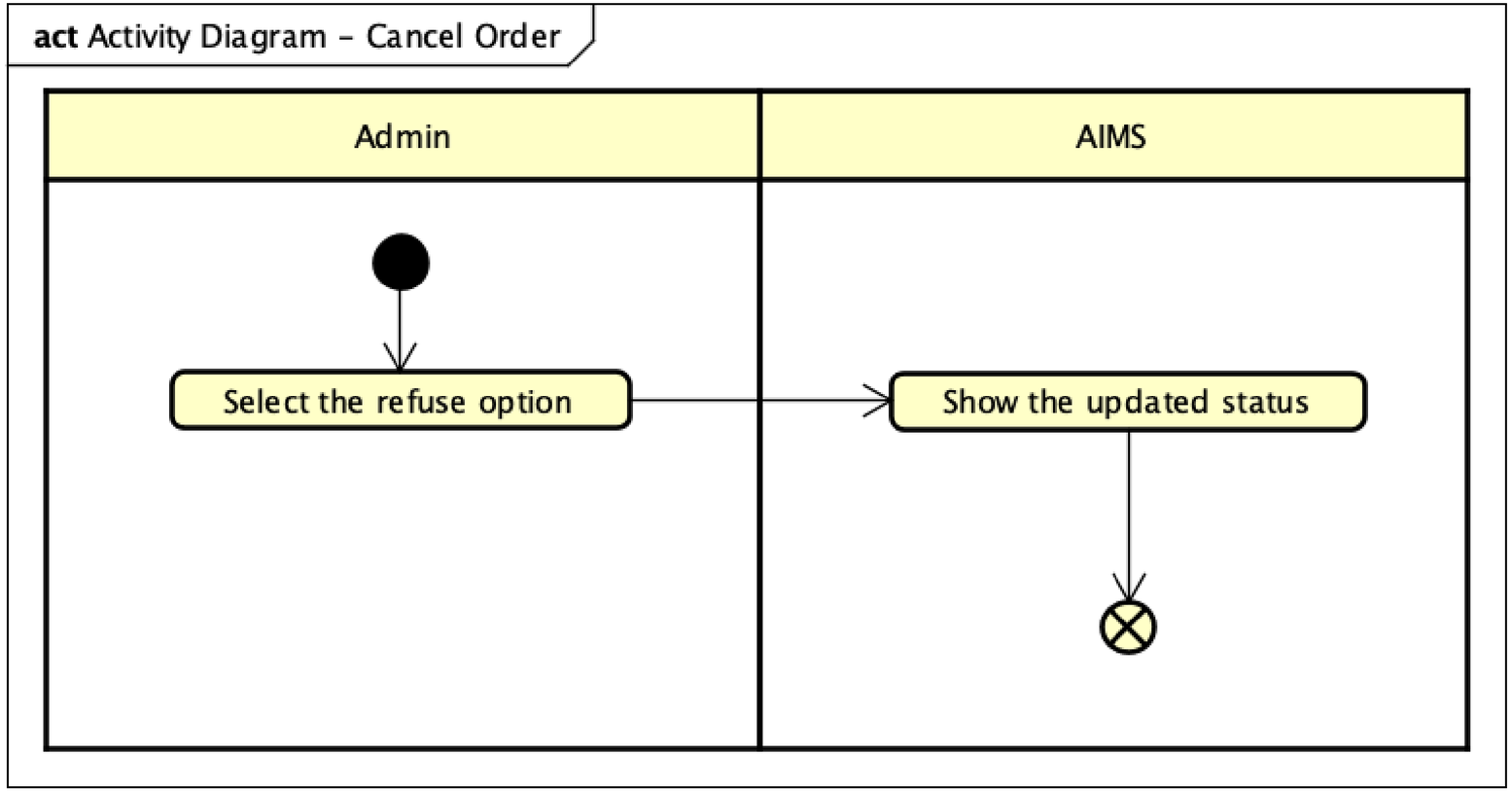
Activity diagram

- Pay order



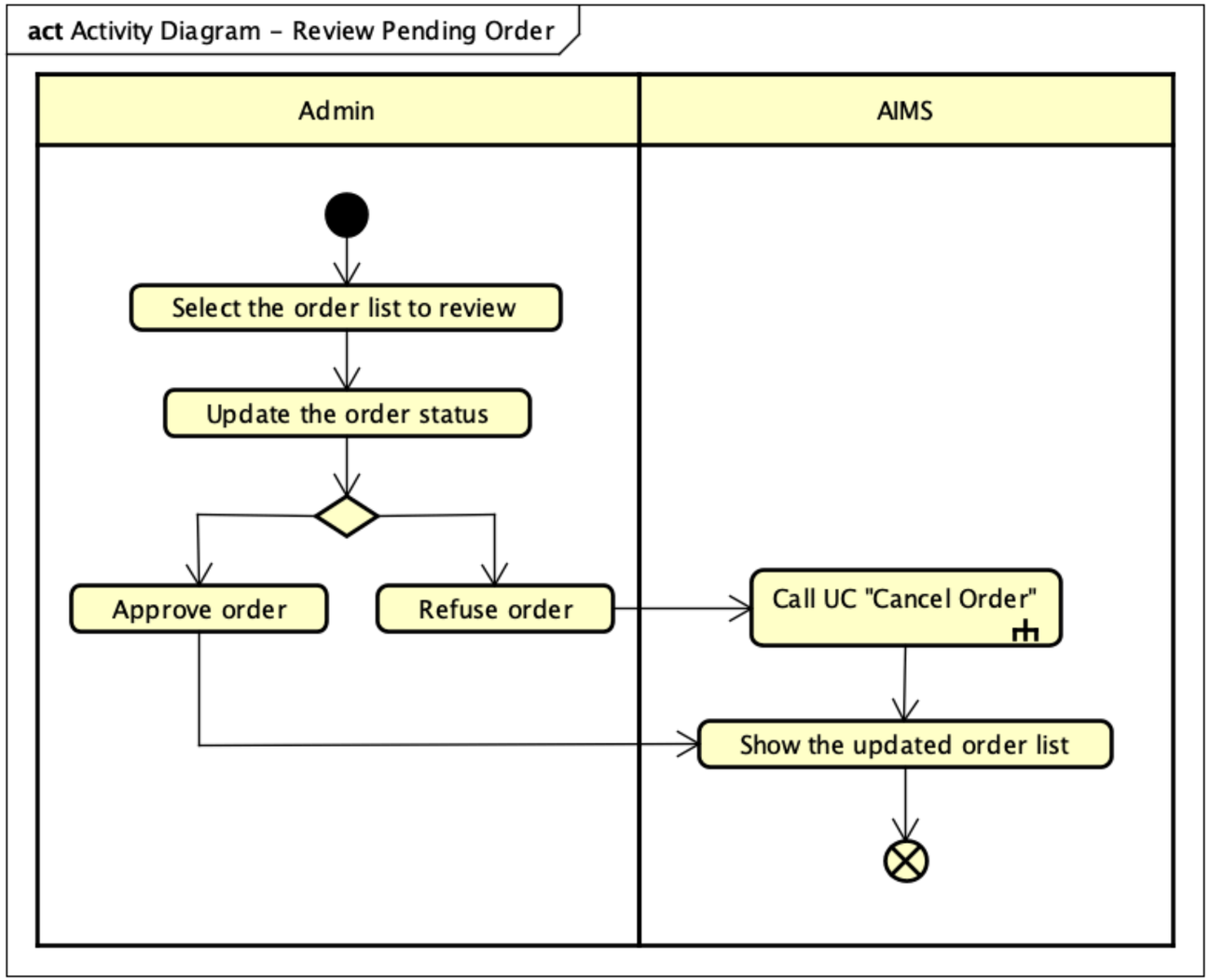
Activity diagram

- Cancel order



Activity diagram

- Review pending order



3. DETAILED DESIGN

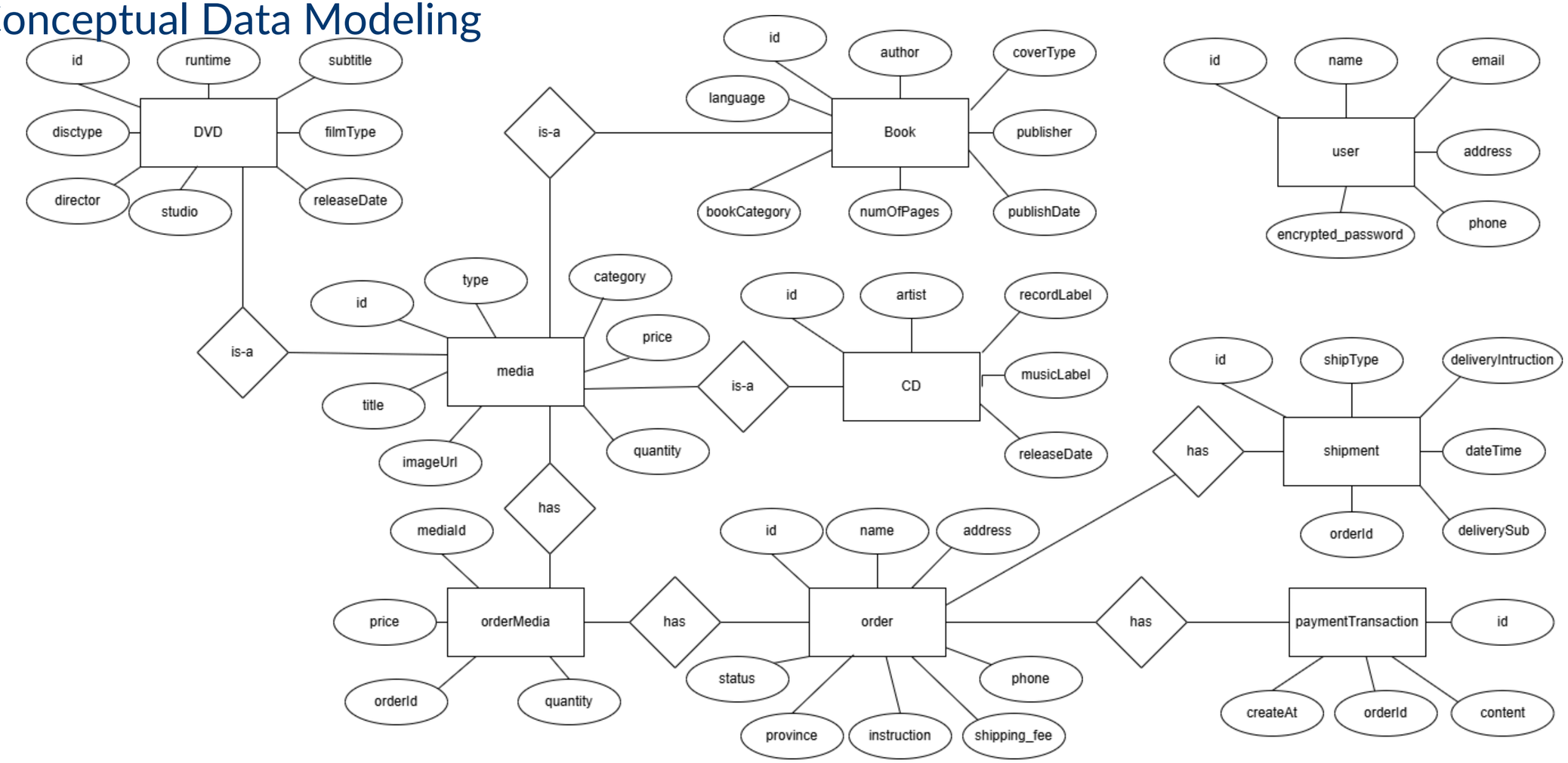
Interface design

- Screens in AIMS application: Home screen, Cart screen, Shipping screen, Login screen, Product manager dashboard, VNPay interface.
- Display: resolution 1366x768.
- Consistency of expressions: a limited range of valid characters for strings ([0-9],...).
- Control: input format checking functionality; each screen is separated and no stack framed exists.
- Error: error message with its details displayed while encountering such one.

3. DETAILED DESIGN

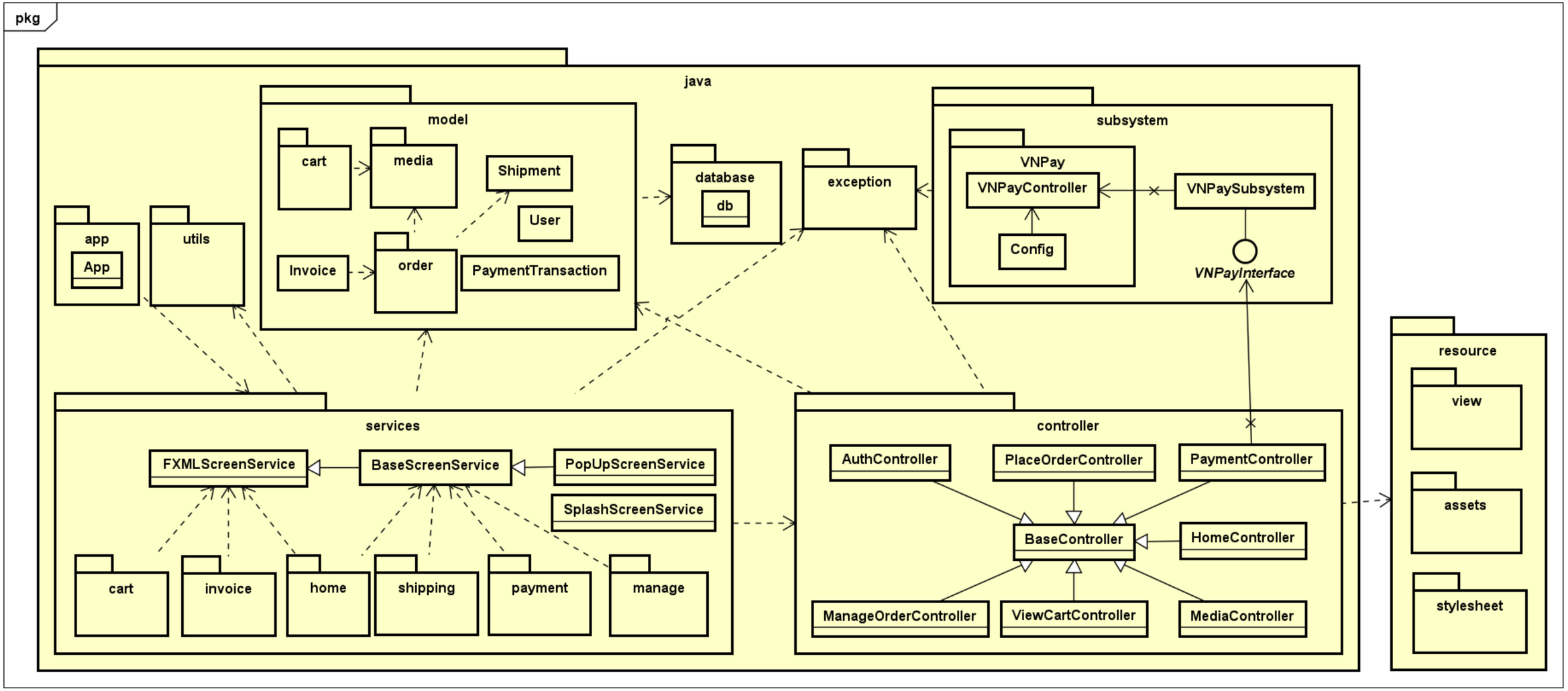
Data modelling

- Database management system: SQLite
- Conceptual Data Modeling



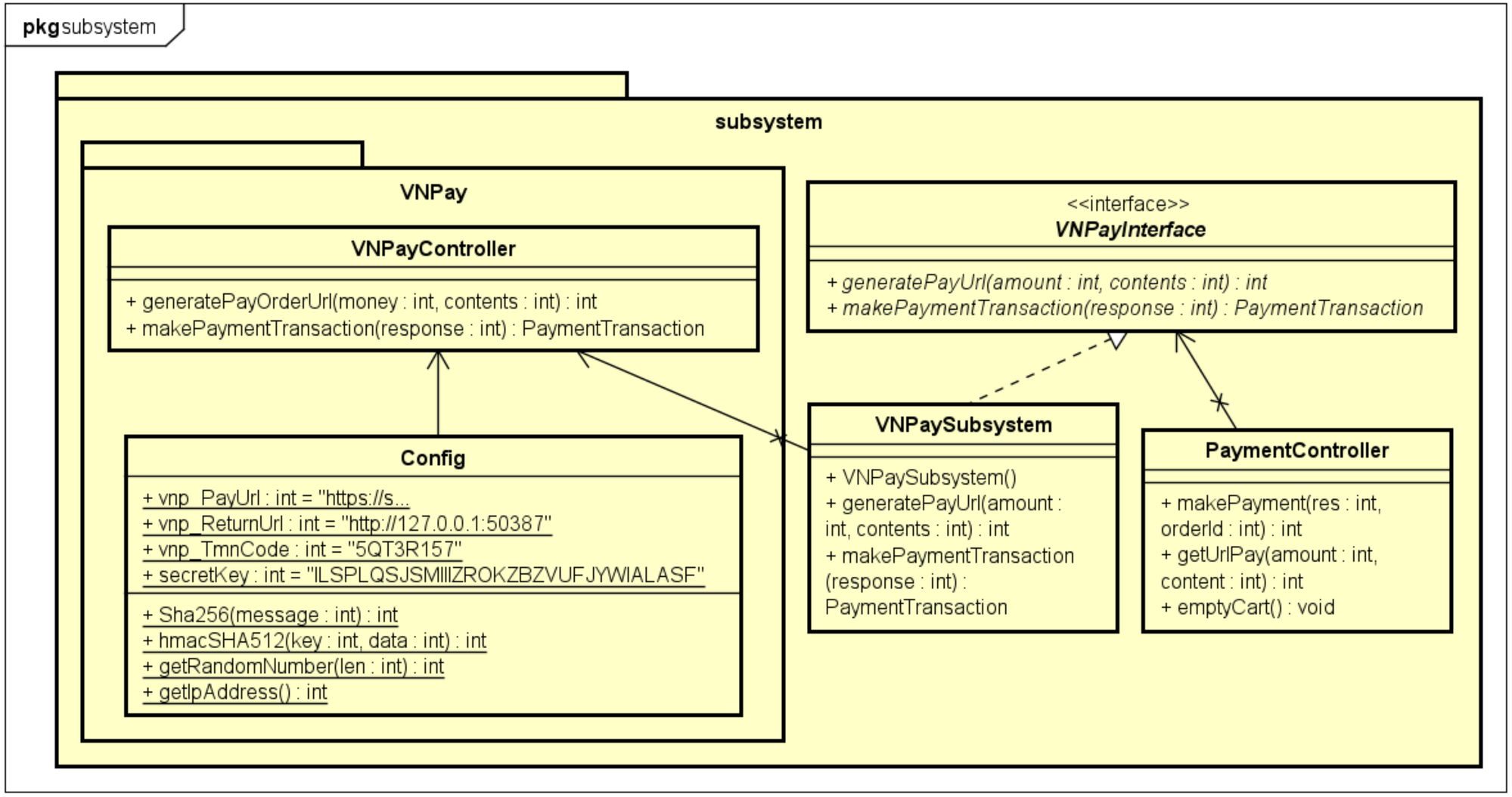
3. DETAILED DESIGN

General class diagram



3. DETAILED DESIGN

VNPay subsystem



4. DESIGN ASSESSMENT

Architectural strategies

- Programming languages and framework: Java, JavaFX for GUI with Maven.
- Architectural pattern: MVC (Model - View - Controller).
- Error handling: Ultilize exception package.
- Version control: Github workflow (develop, feature, release, hotfix).

Objectives

- Ensure the application development process and simplify dependency management.
- Enhance separation of concerns, code maintenance scalability.
- Code quality and consistency for streamline development process.

4. DESIGN ASSESSMENT

Coupling

- Our project does not violate common coupling.

- Our project violates stamp coupling at Controller module, where HomeController passes the Model object and ViewCartController passes the Cart object, but do not use all of its properties.

Cohesion

- Temporal cohesion: The App class performs the function of displaying Splash screen first and then displaying Home screen.

- Communicational cohesion: MediaController, ViewCartController, ManageCartController have different methods of performing functions but they all operate on the same Order, Cart data.

- Functional cohesion: Most of the modules in the project satisfies.

4. DESIGN ASSESSMENT

Design principle

- *Single Responsibility Principle* (SRP): some classes in controller package such as ManageOrderController or PlaceOrderController violate this principle because they perform many different functions for managing order or placing order.

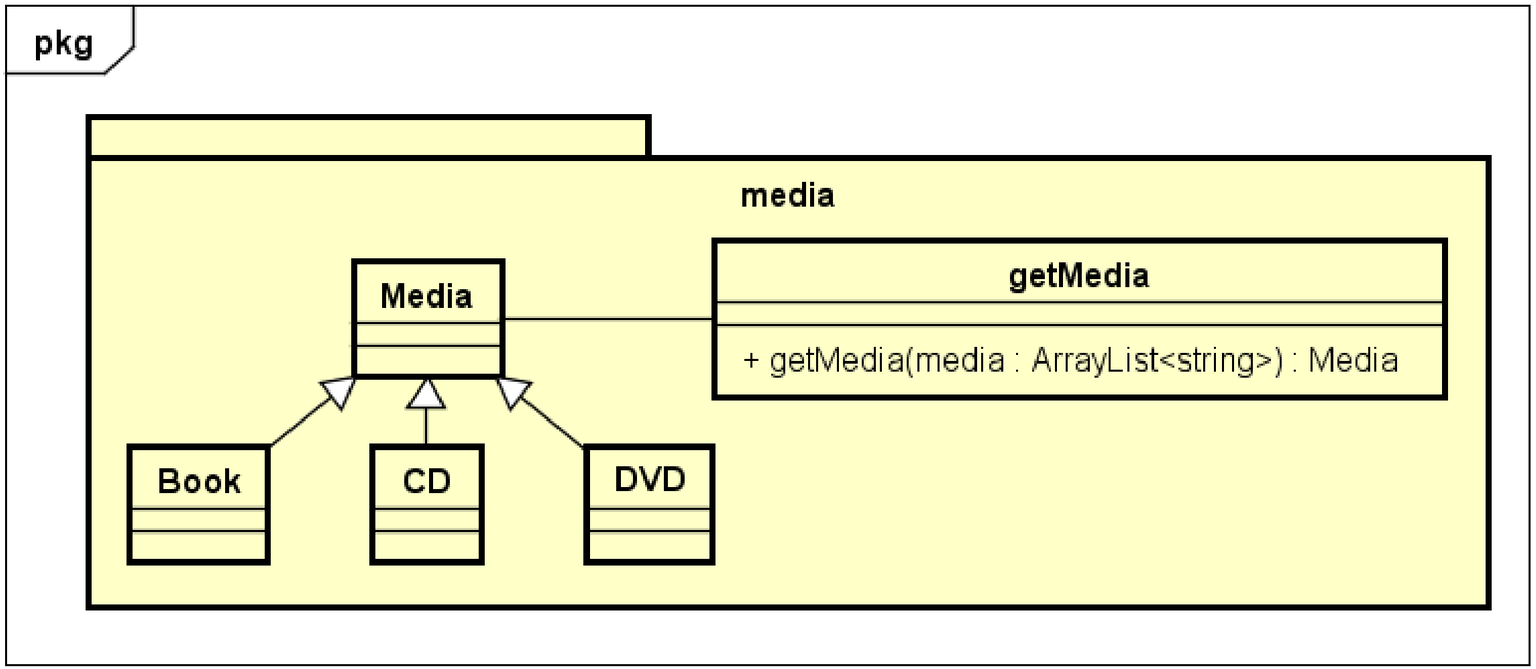
- *Open/Closed Principle* (OCP): FormScreenService inheritance for different kinds of Media.

- *Liskov Substitution Principle* (LSP): The inheritance hierarchy in the Media class follows this principle.

- *Interface Segregation Principle* (ISP): The project does not violate this principle because no interface has too many methods.

- *Dependency Inversion Principle* (DIP): screen display classes in services package depend quite strictly on several model classes, which leads to this principal violation.

Design pattern proposal - Factory



Benefits: reduce dependencies between modules, easy to add more subclasses media in the future.

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THANK YOU FOR LISTENING!