

# Eco Bike Rental

Group 8

Trần Thị Hằng- 20176748

Dương Thị Huệ- 20176772

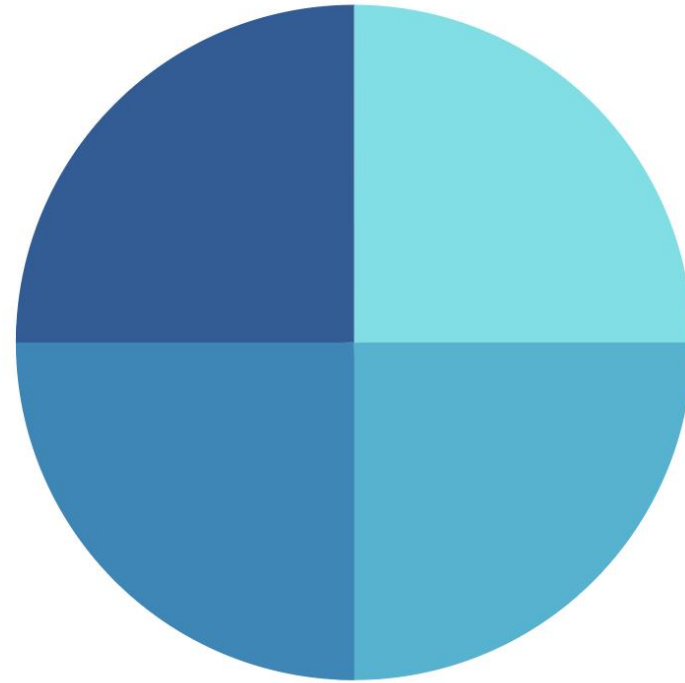
Đỗ Minh Thông- 20176881

Phạm Nhật Linh- 20184285

## I. Member Contribution

Tran Thi Hang  
25%

Do Minh Thong  
25%

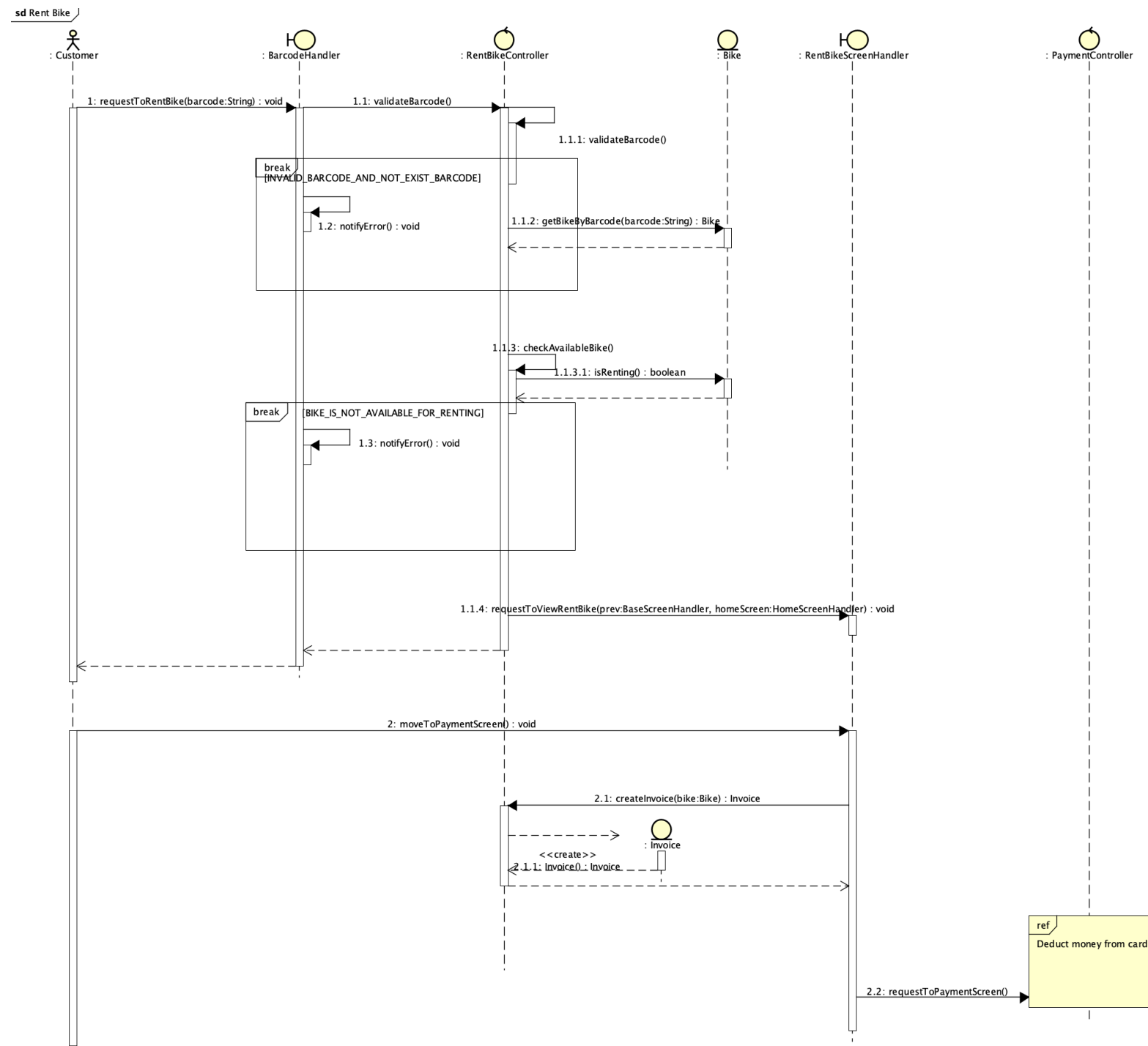


Duong Thi Hue  
25%

Pham Nhat Linh  
25%

## II. Typical Interaction Diagram

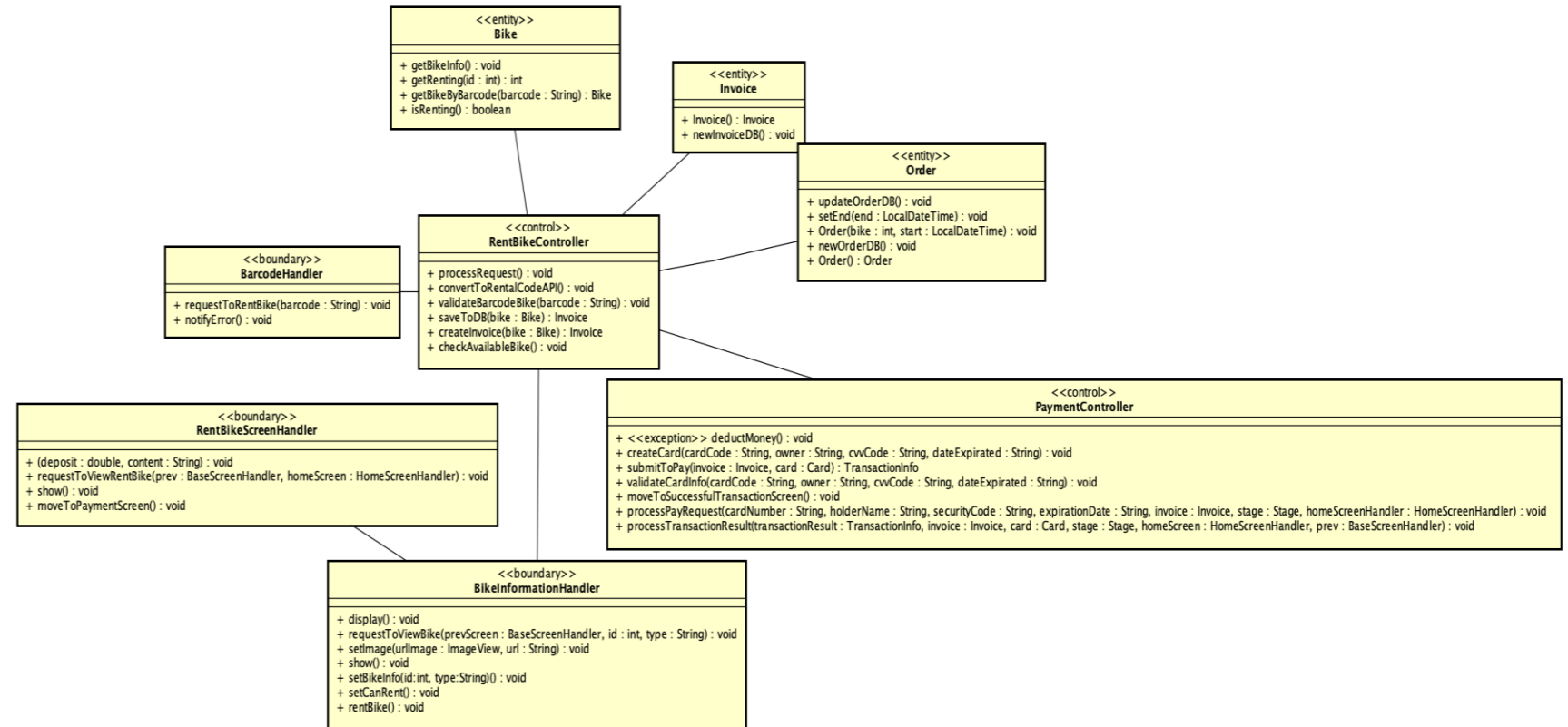
### 1. Sequence Diagram



## II. Typical Interaction Diagram

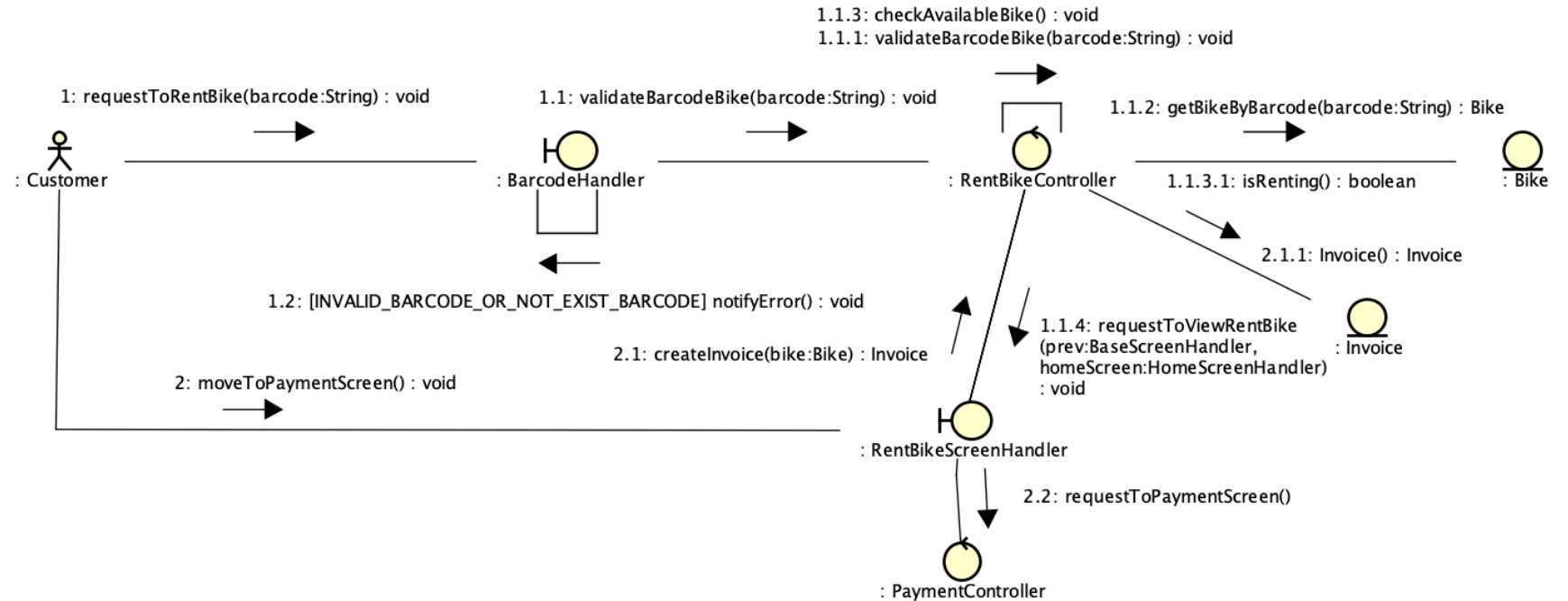
### 1. Sequence Diagram

### 2. Analysis Diagram



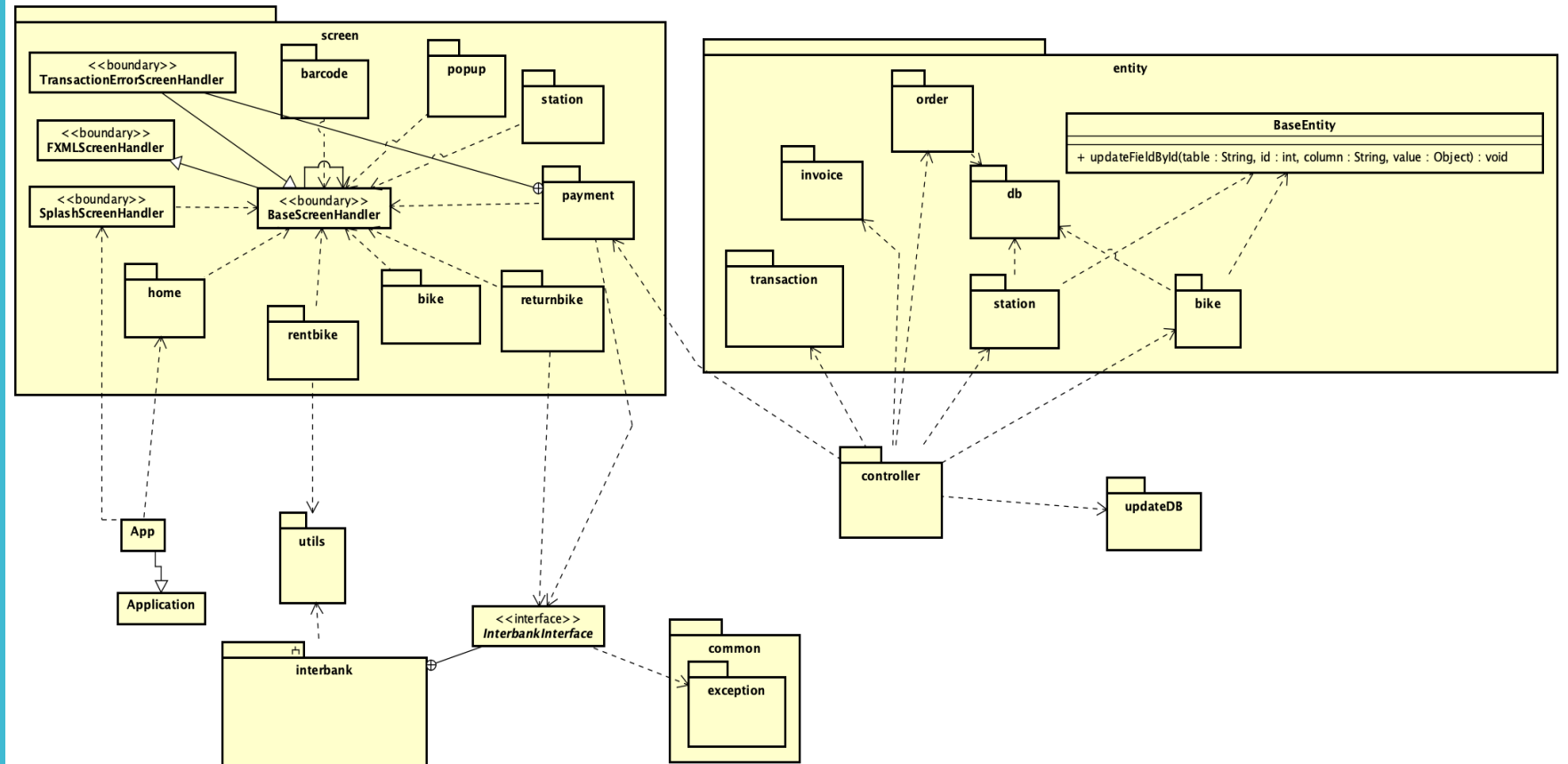
## II. Typical Interaction Diagram

1. Sequence Diagram
2. Analysis Diagram
3. Communication Diagram



# III. Class Diagrams

## 1. General Diagram

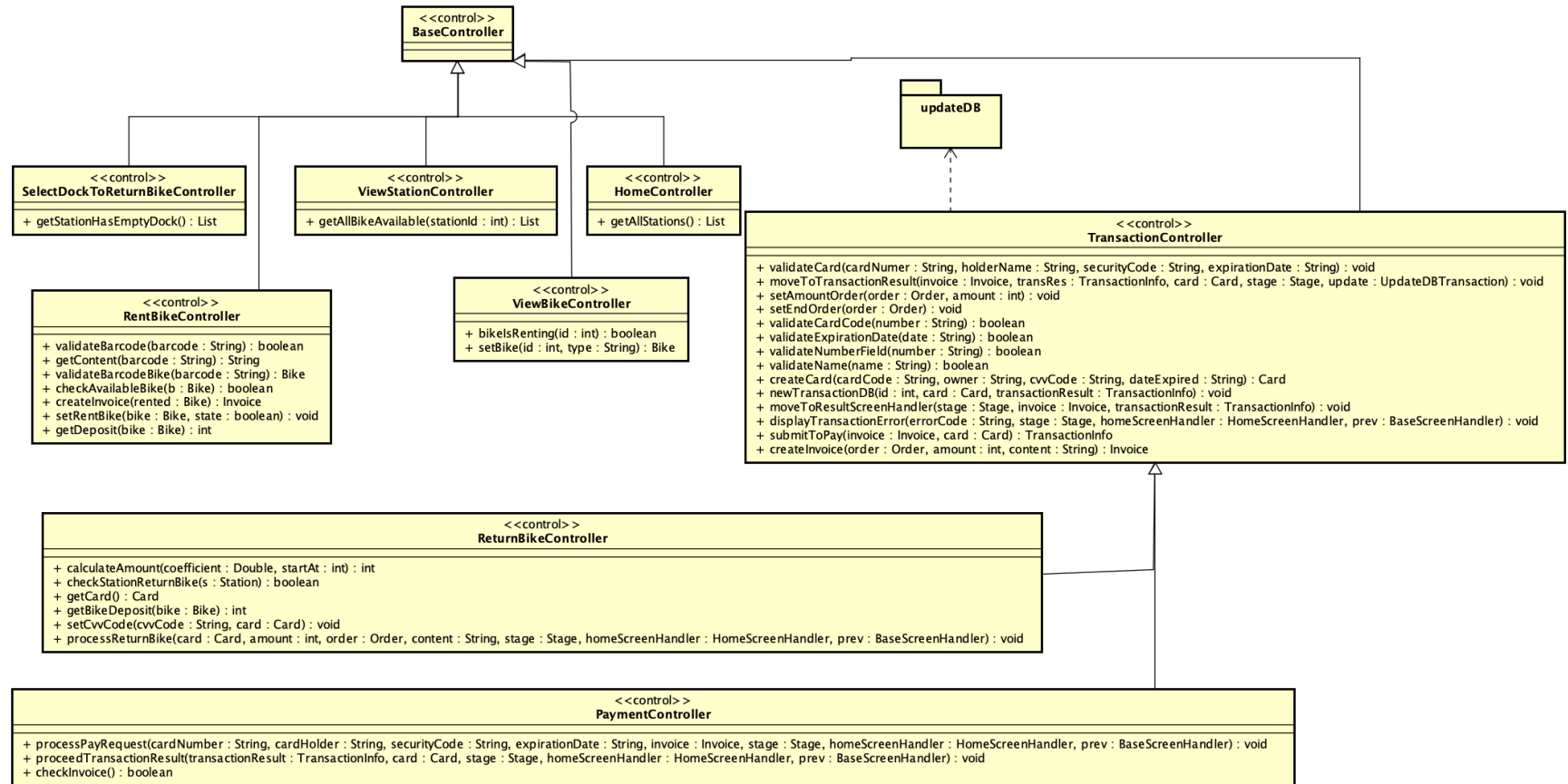


# III. Class Diagrams

## 1. General Diagram

## 2. Detailed Diagram

### a. Controller Class Diagram



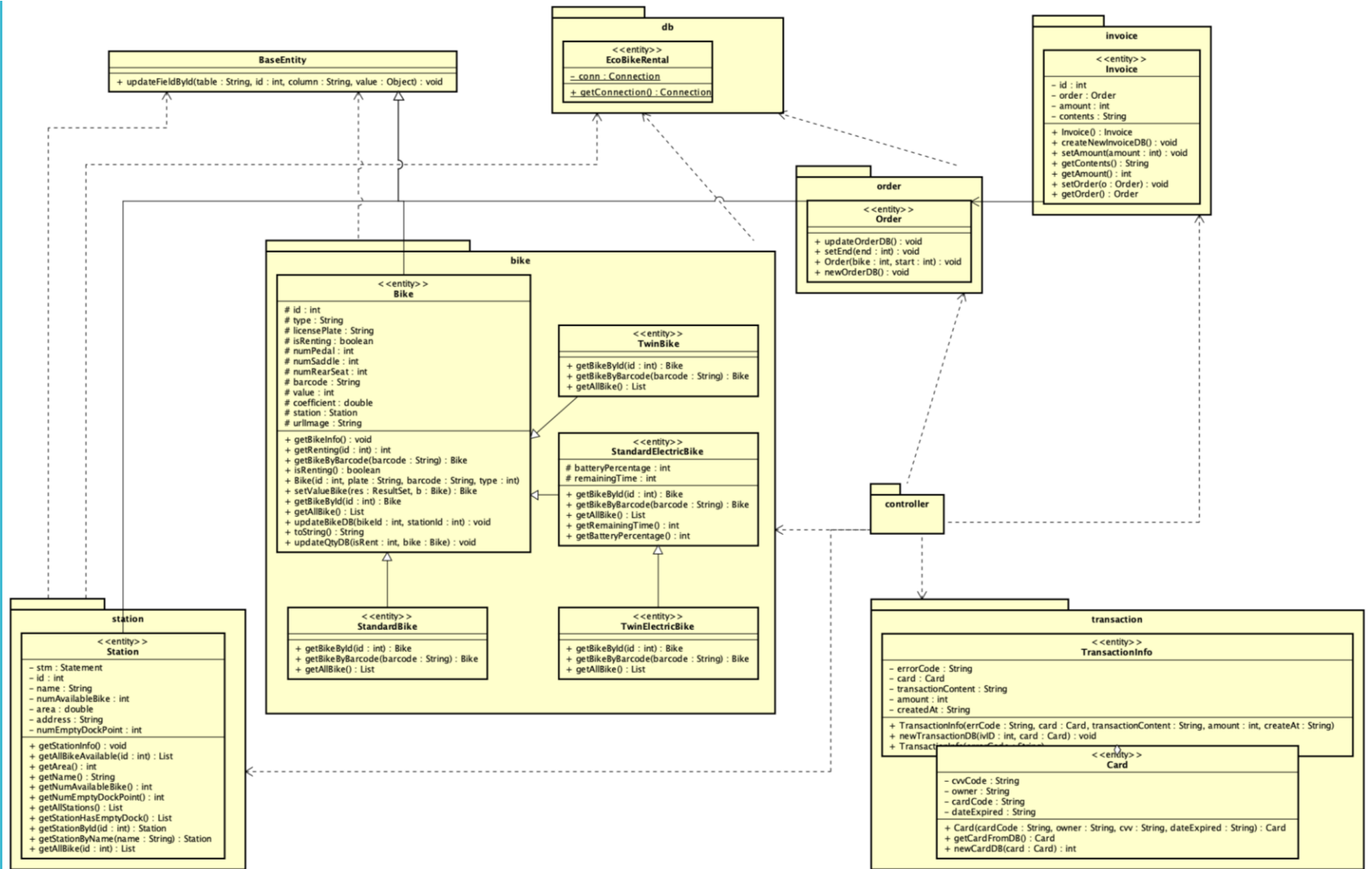
# III. Class Diagrams

## 1. General Diagram

## 2. Detailed Diagram

### a. Controller Class Diagram

### b. Entity Class Diagram





# III. Class Diagrams

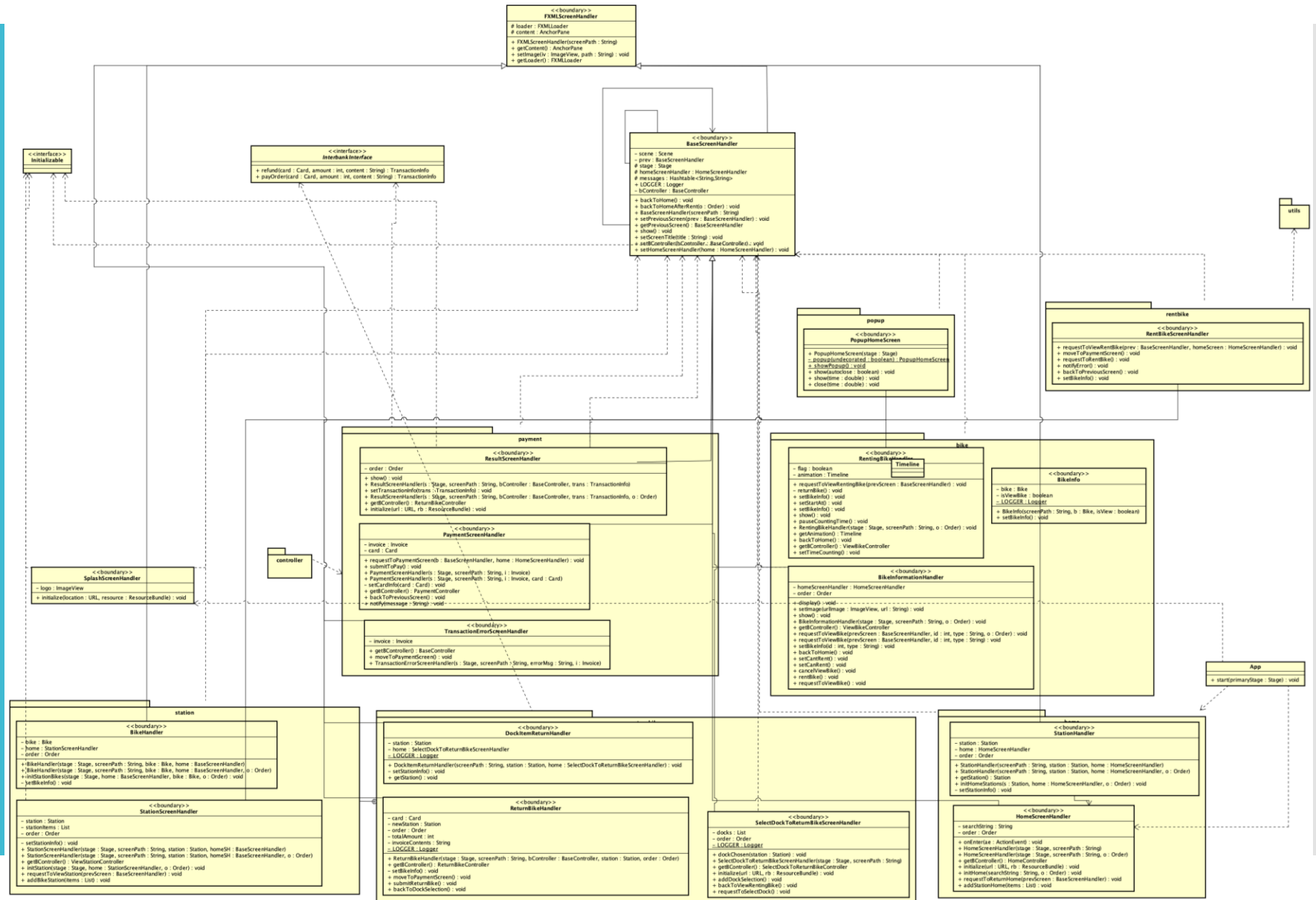
## 1. General Diagram

## 2. Detailed Diagram

### a. Controller Class Diagram

### b. Entity Class Diagram

### c. Screen Class Diagram



## IV. Design Considerations

### 1. Design Concepts

Problems:

- Control Coupling
- Communicational Cohesion

## IV. Design Considerations

1. Design Concepts
2. Design Principles

Design simple classes follow SOLID principles

- 1 class – 1 job – 1 responsibility
- Open for extension but close for modification
- Use interfaces, abstract classes. Subclasses can substitute for their base classes
- Use specific interfaces
- All classes with same properties into one package to manage easily

=> Reuse source code, adapt any changing requirements.

## IV. Design Considerations

1. Design Concepts
2. Design Principles
3. Design Patterns

- Strategy pattern:
  - UpdateDBTransaction interface, class RentBike and ReturnBike implement it.
  - Two methods ***updateDB*** and ***moveToResultScreenHandler*** can be changed at run time .  
=> Clean code, easier to switch between different algorithms
- Facade pattern:
  - use InterbankInterface  
=> Decreases complexity and provides an easier interface for communication.



Thank you  
for listening!