1. Screen standardization

Display

Number of colors supported: 16,777,216 colors
Resolution: 1366 × 768 *pixels*

Screen

Location of standard buttons: At the bottom (vertically) and in the middle (horizontally) of the frame
Location of the messages: Starting from the top vertically and in the middle horizontally of the frame down to the bottom.
Display of the screen title: The title is located at the top of the frame in the middle.
Consistency in expression of alphanumeric numbers: comma for separator of thousand while strings only consist of characters, digits, commas, dots, spaces, underscores, and hyphen symbol.

Control

Size of the text: medium size (mostly 24px). Font: Segoe UI. Color: #000000
Input check process: Should check if it is empty or not. Next, check if the input is in the correct format or not
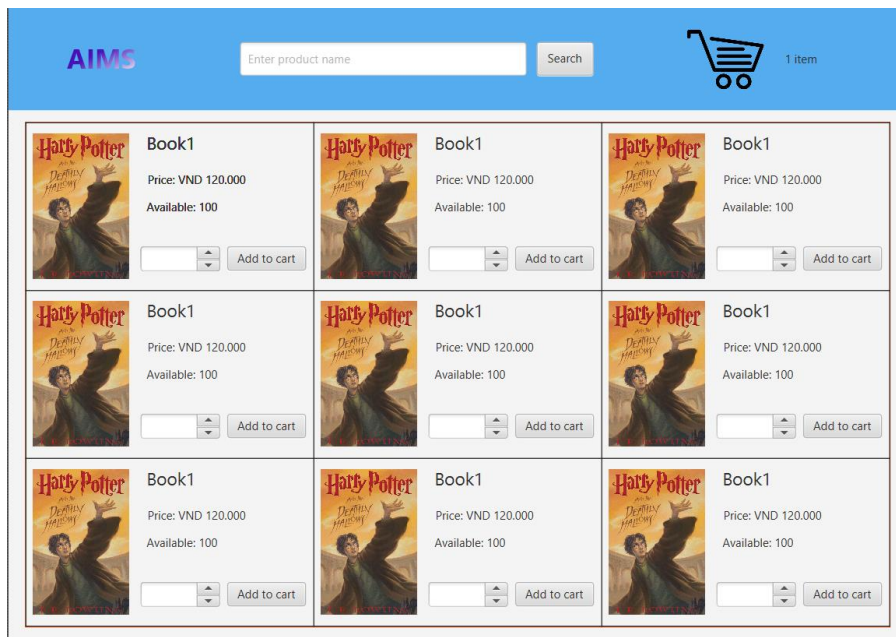Sequence of moving the focus: There will be no stack frames. Each screen will be separated. However, the manual is considered a popup message, as the main screen cannot be operated while the manual screen is shown. After the opening screen, the app will start with splash screen, and then the first screen (home screen) will appear.
Sequences of the system screens:
1. Splash screen (first screen)

2. Home screen

3. View cart screen – view items in the cart

CART

	Book 1	Price: VND 120.000
	Remove from cart	Quantity: 1
		Total: VND 120.000

Subtotal: VND 120.000

Total: VND 136.000   (VAT: 10%)

4. Delivery form – fill delivery information

DELIVERY INFORMATION

Name [   ]   Phone number [   ]

Province [▼]

Address [   ]

Instruction [   ]

☐ Rush Order

Submit   Cancel

5. Rush Order form – fill rush order additional information

RUSH ORDER

Expected delivery interval

Rush shipping instruction

Rush Order supported items

Item	Quantity	Price
No content in table		

Subtotal   1.000.000

Shipping fee   30.000

Total   1.030.000

Confirm   Cancel

6. Invoice screen – view order details
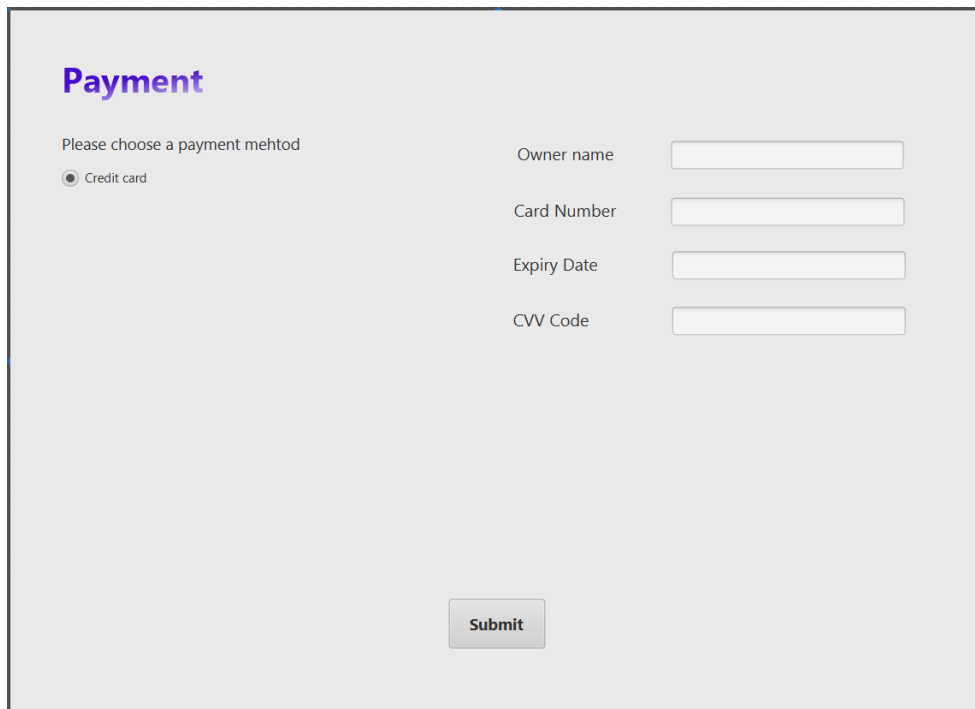
INVOICE

Name	Nguyen Van A	**Order**	120.000 VND
Phone number	0933423487	**Shipping fee**	15.000 VND
Address	Some address	**Total**	135.00 VND
Shipping instructions	Some instructions		

Confirm   Cancel

7. Payment form – fill payment information

Payment

Please choose a payment mehtod

◉ Credit card

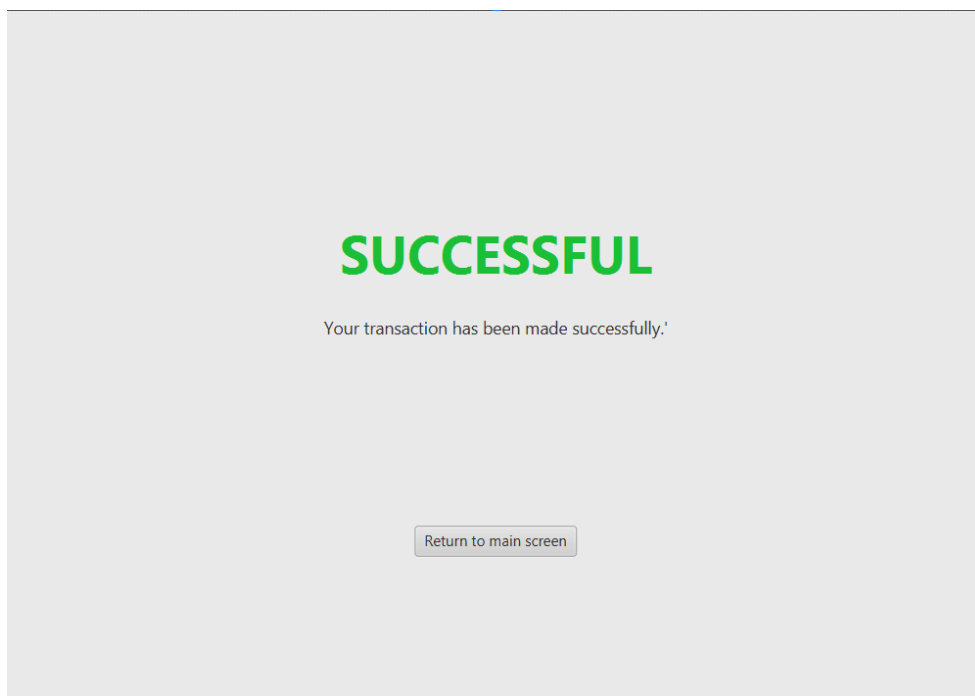Owner name [   ]

Card Number [   ]
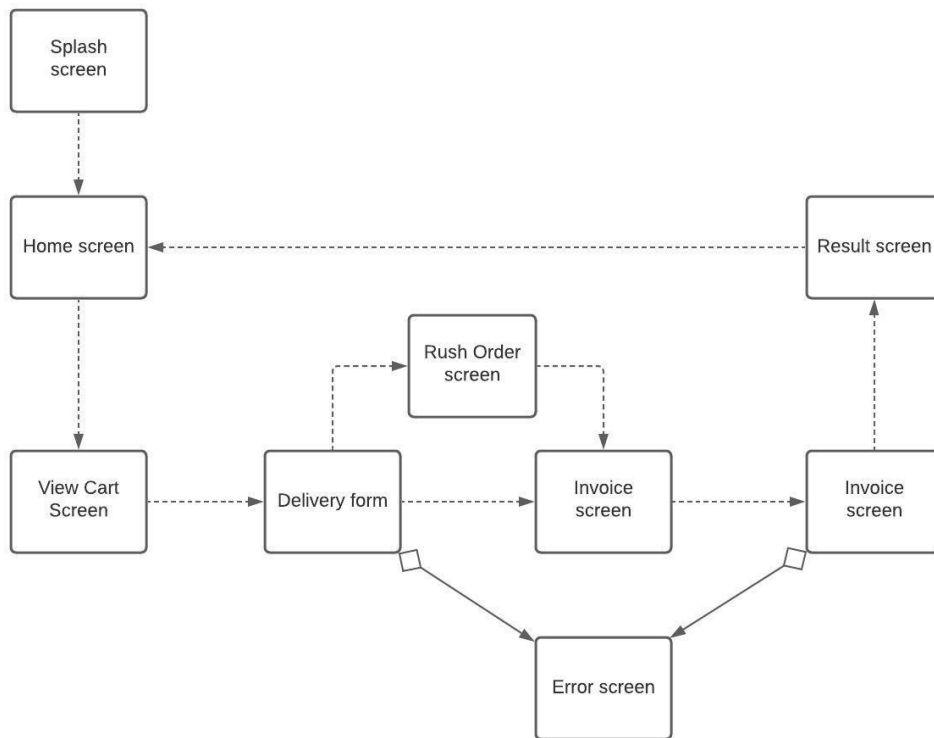
Expiry Date [   ]

CVV Code [   ]

Submit

8. Result screen

SUCCESSFUL

Your transaction has been made successfully.'

Return to main screen

Screen transition diagram

Direct input from the keyboard
There will be no shortcuts. There are back buttons to move back to the previous screen. Also, there is the close button "X" located at the title bar to the right to close the screen.
Error
A message will be given to notify the users what is the problem.

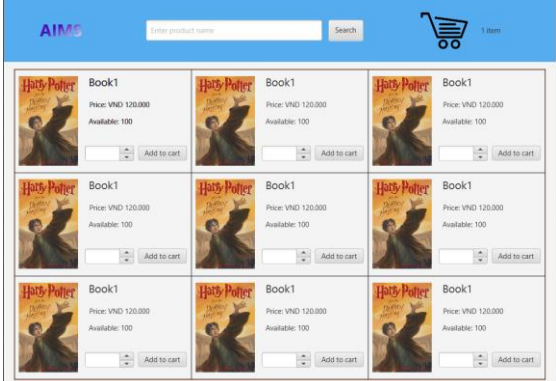## 2. Screen specifications
a. Splash screen

AIMS		Date of creation	Approved by	Reviewed by	Person in charge
Screen	Splash screen				Hoàng Mai Đức Long
		Control	Operation	Function	
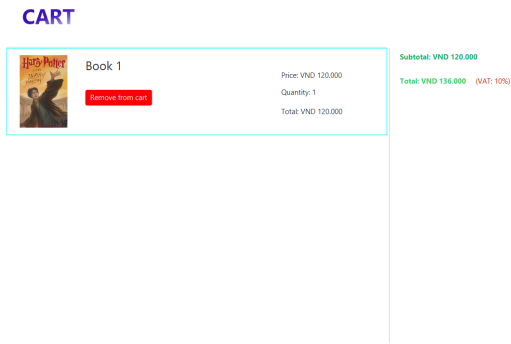
	Icon area	Display	Area to display application's icon
AIMS			

b. Home screen

AIMS		Date of creation	Approved by	Reviewed by	Person in charge
Screen	Home Screen				Hoàng Mai Đức Long
		Control	Operation	Function	
		Item display area	Display	Area to display items	
		Search area	Input	Area for the user to search for media	
		Cart view button	Click	To view cart	

Item display area				
Fields	Number of digits/ characters	Type	Attributes	Remarks
Item title	50	String	Black	Left-adjusted
Item price	10	Numerical	Black	Right-adjusted
Available quantity	10	Numerical	Black	Right-adjusted
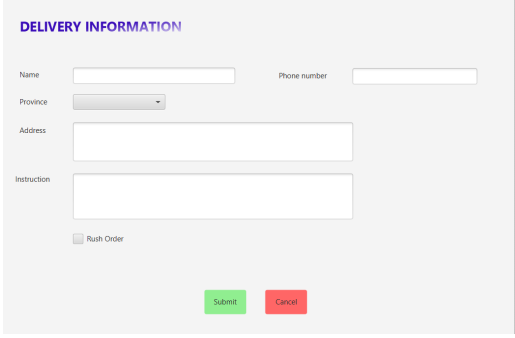
c. View cart screen

AIMS		Date of creation	Approved by	Reviewed by	Person in charge
Screen	View Cart Screen				Hoàng Mai Đức Long
		Control	Operation	Function	
		Screen title area	Display	Area to display screen title	
		Item view area	Display	Area to display details of items in cart	
		Subtotal area	Display	Area to display subtotal amount of items in cart	
		Place order button	Click	Button to place order	
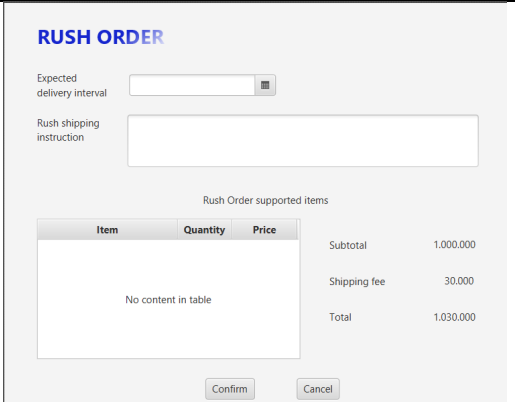
Field specification

Item view area				
Fields	Number of digits/ characters	Type	Attributes	Remarks
Item title	50	String	Black	Left-adjusted
Item price	10	Numerical	Black	Right-adjusted
Quantity	10	Numerical	Black	Right-adjusted
Item total	10	Numerical	Black	Right-adjusted
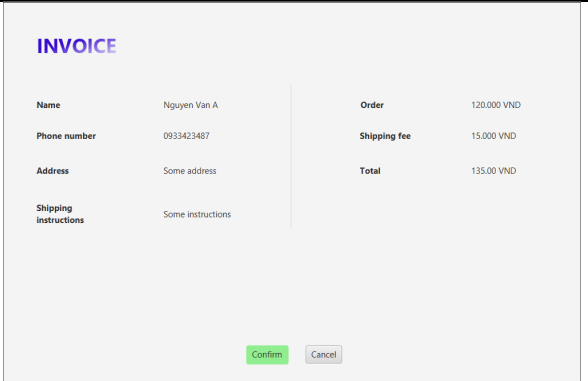
d. Delivery form

AIMS		Date of creation	Approved by	Reviewed by	Person in charge
Screen	View Cart Screen				Hoàng Mai Đức Long
		Control	Operation	Function	
		Form area	Input	Area for user to fill in delivery information	
		Rush Order select area	Click	A checkbox for the user to choose to place rush order	
		Confirm button	Click	A button to submit delivery information	
		Cancel button	Click	A button to cancel placing order process	
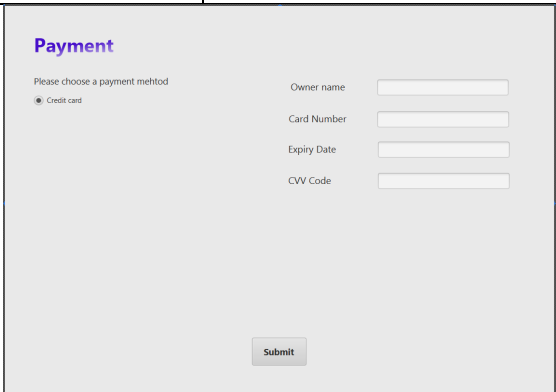
e. Rush Order form

AIMS		Date of creation	Approved by	Reviewed by	Person in charge
Screen	View Cart Screen				Hoàng Mai Đức Long
		Control	Operation	Function	
		Rush Order form	Input	Area for the user to fill in additional information for rush order	
		Confirm button	Click	Button to confirm rush order placement	
		Cancel button	Click	Button to cancel rush order placement	
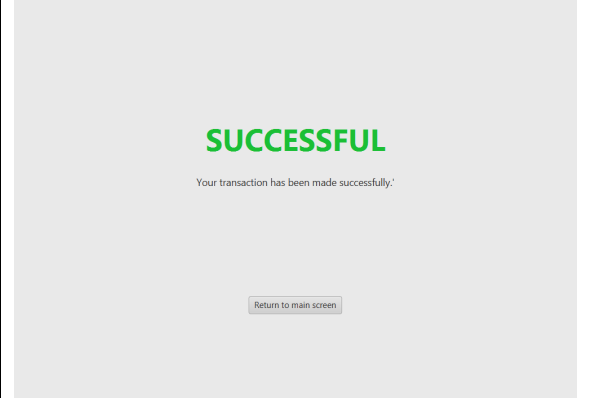
f. Invoice screen

AIMS		Date of creation	Approved by	Reviewed by	Person in charge
Screen	View Cart Screen				Hoàng Mai Đức Long
		Control	Operation	Function	
		Delivery info area	Display	Area to display user's delivery info	
		Payment info area	Display	Area to display total amount the user have to pay	
		Confirm button	Click	Button to confirm invoice	
		Cancel button	Click	Button to cancel invoice	

g. Payment form

AIMS		Date of creation	Approved by	Reviewed by	Person in charge
Screen	View Cart Screen				Hoàng Mai Đức Long
		Control	Operation	Function	
		Payment method area	Click	Area for user to choose payment method	
		Payment form area	Input	Area for user to fill in credit card information	
		Submit button	Click	Button to	

h. Result screen

AIMS		Date of creation	Approved by	Reviewed by	Person in charge
Screen	View Cart Screen				Hoàng Mai Đức Long
		Control	Operation	Function	
		Message area	Display	Area to display the result message of the	

SUCCESSFUL

Your transaction has been made successfully.'

Return to main screen

3. Interface design

Interbank subsystem.

a. Assigning behaviors
- Pay Order

- Refund

sd Refund

: InterbankSubsystem

: InterbankSubsystemController

: InterbankBoundary

: Interbank

1: refund(card:CreditCard, amount:int, contents:String) : PaymentTransaction

1.1: refund(card:CreditCard, amount:int, contents:String) : PaymentTransaction

1.1.1: url = generateURL(data:Map<String,String>) : String

1.1.2: response = query(url:String) : String

1.1.2.1: processTransaction()

1.1.3: handleResponse(response:String) : Map<String,String>

- Get Balance

sd GetBalance

: InterbankSubsystem

: InterbankSubsystemController

: InterbankBoundary

: Interbank

1: getBalance(card:CreditCard) : int

1.1: getBalance(card:CreditCard) : int

1.1.1: url = generateURL(data:Map<String,String>) : String

1.1.2: response = query(url:String) : String

1.1.2.1: processTransaction()

1.1.3: handleResponse(response:String) : Map<String,String>

b. Overall class diagram

pkg

<<exception>>
NotEnoughBalanceException
+ NotEnoughBalanceException(message : int) : void

<<exception>>
InvalidCardException
+ InvalidCardException(message : int) : void

<<exception>>
InternalServiceErrorException
+ InternalServiceErrorException(message : int) : void

<<interface>>
InterbankInterface
+ <<exception>> *payOrder(card : CreditCard, amount : int, content : String) : PaymentTransaction*
+ <<exception>> *refund(card : CreditCard, amount : int, contents : String) : PaymentTransaction*
+ <<exception>> *getBalance(card : CreditCard) : int*

<<entity>>
CreditCard
- cardNumber : String
- ownerName : String
- issueBank : String
- expiryDate : String
- cvvCode : String

<<entity>>
PaymentTransaction
- transactionId : int
- card : CreditCard
- amount : int
- contents : String
- transactionTime : Timestamp
- errorMessage : String

InterbankSubsystem

<<control>>
InterbankSubsystemController
- PUBLIC_KEY : String
- API_PATH : String
+ <<exception>> payOrder(card : CreditCard, amount : int, contents : String) : PaymentTransaction
+ <<exception>> refund(card : CreditCard, amount : int, contents : String) : PaymentTransaction
+ <<exception>> getBalance(card : CreditCard) : int
- generateURL(data : Map<String,String>) : String
- <<exception>> handleResponse(response : String) : Map<String,String>

<<boundary>>
InterbankBoundary
+ query(url : String) : String