

1. Class “InterbankInterface”

| <<interface>> InterbankInterface | |
|---|--|
| + <<exception>> <i>payOrder(card : CreditCard, amount : int, contents : String) : PaymentTransaction</i> + <<exception>> <i>refund(card : CreditCard, amount : int, contents : String) : PaymentTransaction</i> + <<exception>> <i>getBalance(card : CreditCard) : int</i> | |

Attribute

None

Operation

| No | Name | Return type | Description (purpose) |
|----|------------|--------------------|--|
| 1 | payOrder | PaymentTransaction | Pay order, and then return the payment transaction |
| 2 | refund | PaymentTransaction | Refund, and then return the payment transaction |
| 3 | getBalance | int | Get the balance and then return it |

Parameter:

- card – the credit card used for payment/refund
- amount –the amount to pay/refund
- contents – the transaction contents

Exception:

- PaymentException – if responded with a pre-defined error code
- UnrecognizedException – if responded with an unknown error code or something goes wrong

Method:

None

State

None

2. Class “PaymentController”

| <<control>> PaymentController | |
|---|--|
| - card : CreditCard - interbank : InterbankInterface | |
| + payOrder(amount : int, contents : String, cardNumber : String, cardHolderName : String, expirationDate : String, securityCode : String) : Map<String,String> - getExpirationDate(date : String) : String | |

Attribute

| No | Name | Data type | Default value | Description |
|----|-----------|--------------------|---------------|-------------------------------------|
| 1 | card | CreditCard | NULL | Represent the card used for payment |
| 2 | interbank | InterbankInterface | NULL | Represent the Interbank subsystem |

Operation

| No | Name | Return type | Description (purpose) |
|----|----------|--------------------|--|
| 1 | payOrder | Map<String,String> | Pay order, and then return the result with a message |

Parameter:

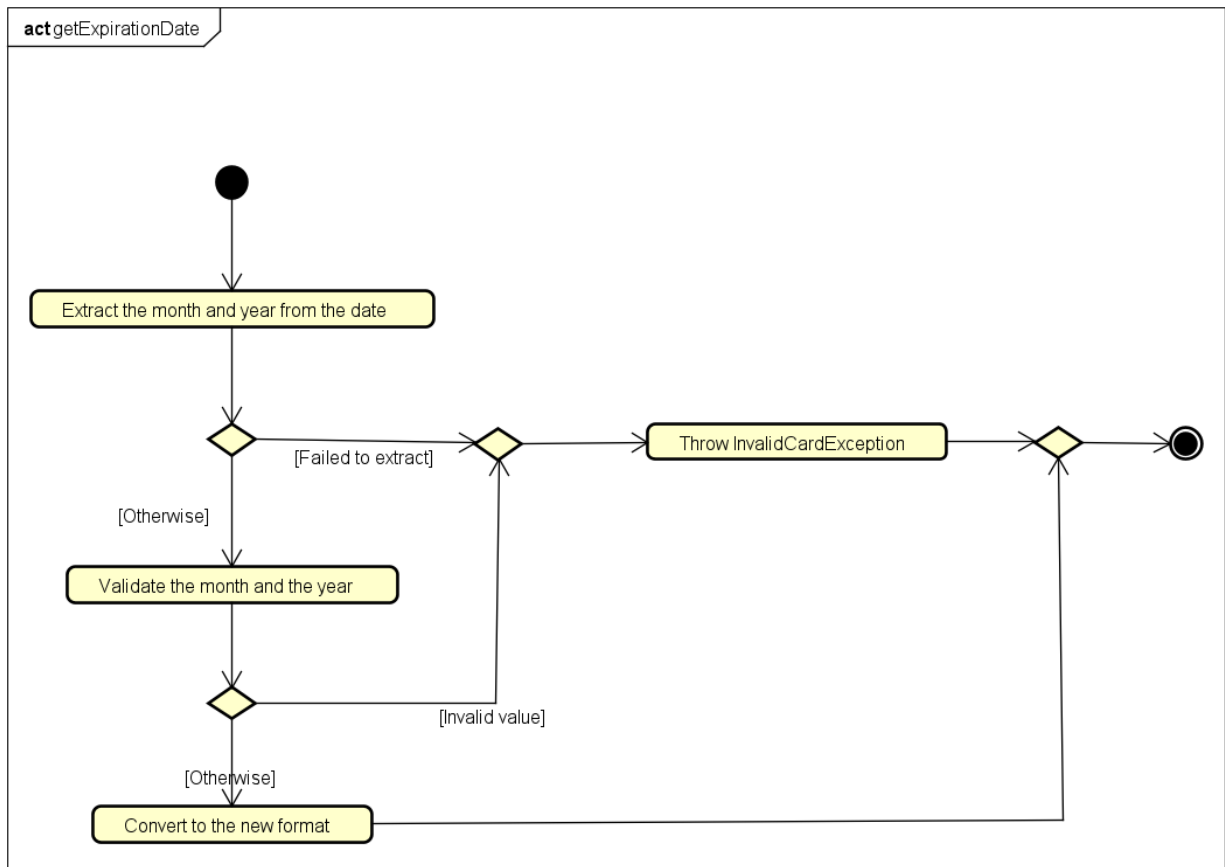
- amount – the amount to pay
- contents – the transaction contents
- cardNumber – the card number
- cardHolderName – the card holder name
- expirationDate – the expiration date in the format “mm/yy”
- securityCode – the cvv/cvc of the credit card

Exception:

- None

Method:

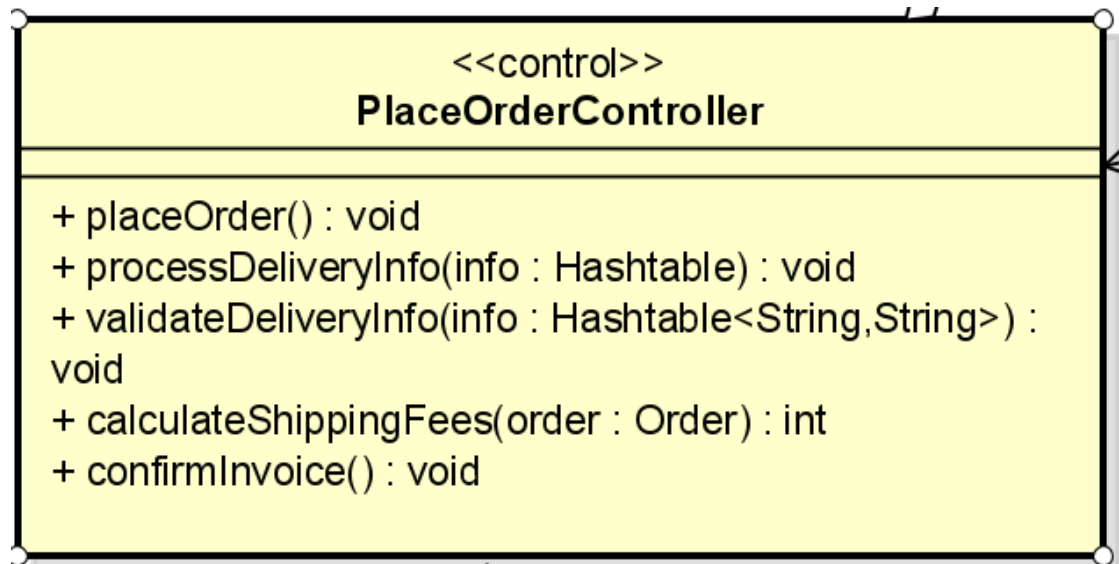
- getExpirationDate: Given the String “date” representing the expiration date in the format “mm/yy”, this method convert it into the required format “mmyy”. The algorithm is illustrated as follows.



State

None

3. Class “PlaceOrderController”



Attribute

None

Operation

| No | Name | Return type | Description (purpose) |
|----|-----------------------|-------------|--|
| 1 | placeOrder | void | Place a new order |
| 2 | processDeliveryInfo | void | Process the delivery information |
| 3 | validateDeliveryInfo | void | Validate the delivery information |
| 4 | calculateShippingFees | Int | Calculate the shipping fees by the formula |
| 5 | confirmInvoice | void | Confirm the information of Invoice |

Parameter

- Info : the information of delivery
- order : the information of order

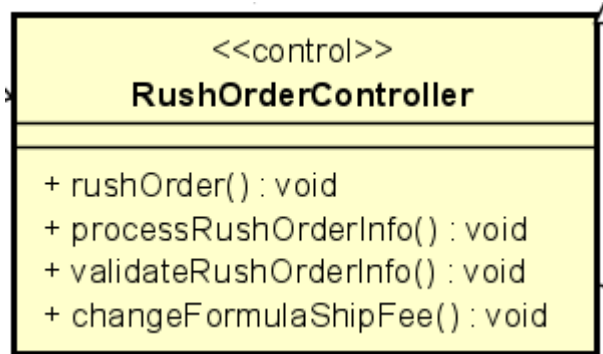
Exception

None

Method

None

4. Class “RushOrderController”



Attribute

None

Operation

| No | Name | Return type | Description (purpose) |
|----|-----------------------|-------------|---|
| 1 | rushOrder | void | Place rush order , check if media and address are supported |
| 2 | processRushOrderInfo | void | Process the rush order information |
| 3 | validateRushOrderInfo | void | Validate the rush order information |
| 4 | changeFormulaShipFee | void | Change the formular of shipping fees |

Parameter

None

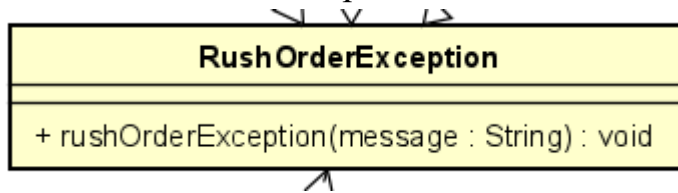
Exception

None

Method

None

5. Class “RushOrderException”



Attribute

None

Operation

| No | Name | Return type | Description (purpose) |
|----|--------------------|-------------|--------------------------|
| 1 | rushOrderException | void | Exceptions of rush order |

Parameter

- message : the different message of exception

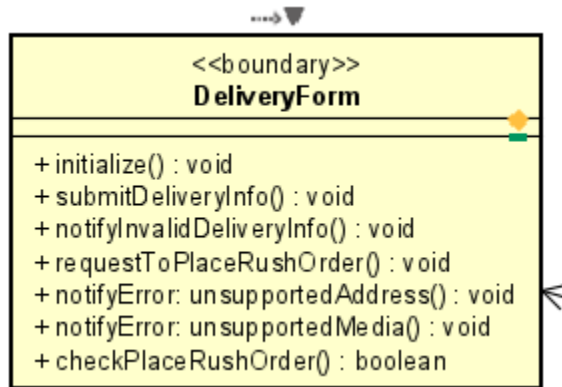
Exception

None

Method

None

6. Class “DeliveryForm”



Attribute

None

Operation

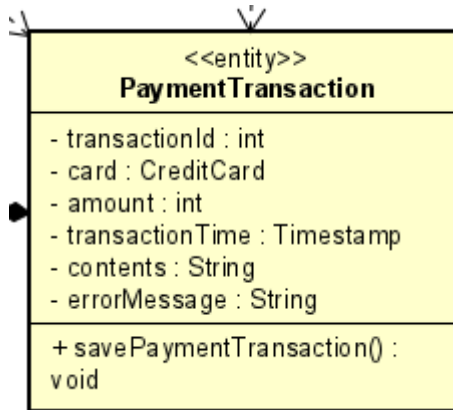
| No | Name | Return type | Description (purpose) |
|----|------------------------------------|-------------|---|
| 1 | initialize | void | Inititalize the delivery form |
| 2 | submitDeliveryInfo | void | Submit the delivery information |
| 3 | notifyInvalidDeliveryInfo | void | Notify that the delivery information is invalid |
| 4 | requestToPlaceRushOrder | void | Request to place rush order |
| 5 | notifyError: unsupportedAddress | void | Notify that the address is unsupported for rush order |
| 6 | notifyError: unsupportedMedia | void | Notify that the media is unsupported for rush order |
| 7 | checkPlaceRushOrder | Boolean | Check if user choose placing rush order |

Parameter

Exception

Method

7. Class “PaymentTransaction”



Attribute

| No | Name | Data type | Default value | Description |
|----|-----------------|------------|---------------|-------------------------------------|
| 1 | card | CreditCard | NULL | Represent the card used for payment |
| 2 | transactionId | int | NULL | Represent the id of transaction |
| 3 | amount | int | NULL | The amount to pay |
| 4 | transactionTime | Timestamp | NULL | Time of the transaction |
| 5 | contents | String | NULL | The transaction contents |
| 6 | errorMessage | String | NULL | The error message |

Operation

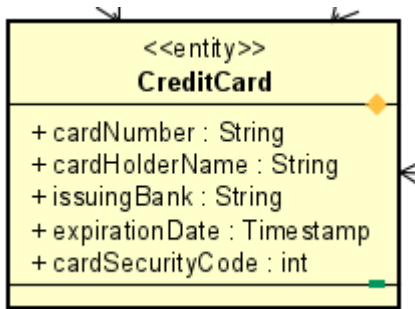
| No | Name | Return type | Description (purpose) |
|----|------------------------|-------------|---|
| 1 | savePaymentTransaction | void | Save the information of payment transaction |

Parameter

Exception

Method

8. Class “CreditCard”



Attribute

| No | Name | Data type | Default value | Description |
|----|------------------|-----------|---------------|-----------------------------------|
| 1 | cardNumber | String | NULL | Represent the number of card |
| 2 | cardHolderName | String | NULL | Represent the name of card holder |
| 3 | issuingBank | String | NULL | Represent name of issuing bank |
| 4 | expirationDate | Timestamp | NULL | Represent expiration date |
| 5 | cardSecurityCode | int | NULL | Represent the card security code |

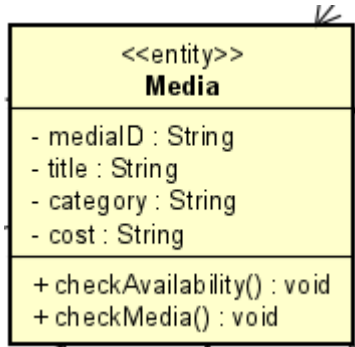
Operation

Parameter

Exception

Method

9. Class “Media”



Attribute

| No | Name | Data type | Default value | Description |
|----|----------|-----------|---------------|-----------------------------|
| 1 | mediaID | String | NULL | Represent ID of media |
| 2 | title | String | NULL | Represent title of media |
| 3 | category | String | NULL | Represent category of media |
| 4 | cost | float | NULL | Represent cost of media |

Operation

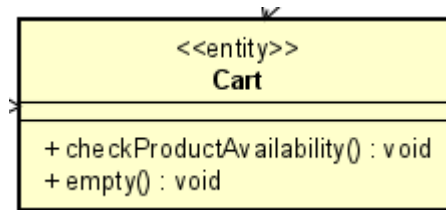
| No | Name | Return type | Description (purpose) |
|----|-------------------|-------------|--|
| 1 | checkAvailability | void | Check availability of media |
| 2 | checkMedia | void | Check if media is supported for rush order |

Parameter

Exception

Method

10. Class “Cart”



Attribute

Operation

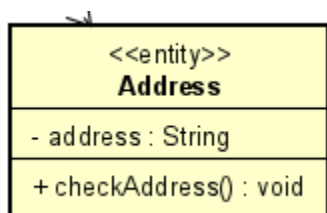
| No | Name | Return type | Description (purpose) |
|----|--------------------------|-------------|-------------------------------------|
| 1 | checkProductAvailability | void | Check if media is availability |
| 2 | empty | void | Empty the cart after saving invoice |

Parameter

Exception

Method

11. Class “Address”



Attribute

| No | Name | Data type | Default value | Description |
|----|---------|-----------|---------------|--------------------------------|
| 1 | address | String | NULL | Represent the delivery address |

Operation

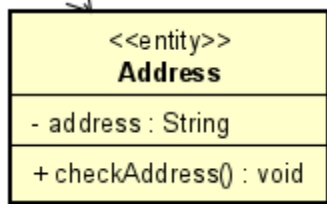
| No | Name | Return type | Description (purpose) |
|----|--------------|-------------|--|
| 1 | checkAddress | void | Check if address is supported for rush order |

Parameter

Exception

Method

12. Class “Address”



Attribute

| No | Name | Data type | Default value | Description |
|----|---------|-----------|---------------|--------------------------------|
| 1 | address | String | NULL | Represent the delivery address |

Operation

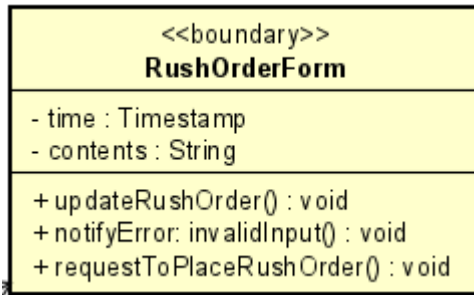
| No | Name | Return type | Description (purpose) |
|----|--------------|-------------|--|
| 1 | checkAddress | void | Check if address is supported for rush order |

Parameter

Exception

Method

13.Class “RushOrderForm”



Attribute

| No | Name | Data type | Default value | Description |
|----|----------|-----------|---------------|---|
| 1 | time | Timestamp | NULL | Represent expected delivery time interval |
| 2 | contents | String | NULL | Represent note of customer |

Operation

| No | Name | Return type | Description (purpose) |
|----|--------------------------|-------------|--------------------------------------|
| 1 | updateRushOrder | void | Update the information of rush order |
| 2 | notifyError:invalidInput | void | Notify that the input is invalid |
| 3 | requestToPlaceRushOrder | void | Request to place rush order |

Parameter

Exception

Method