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|  | **MINISTRY OF EDUCATION AND TRAINING** |

**FPT UNIVERSITY**

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| Capstone Project Document | |
| **Face Detection For Delivery Payment** | |
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# **D. Report No. 4 Software Design Description**

# **1. Design Overview**

# **SystemArchitecture 2. System Architectural Design**

Figure System Architectural Design

## **2.1 Web application architecture description**

* In web application, the system is developed under MVC architecture style. We choose this architecture for Web application because of following advantages:
  + - Business code is separated with View and Controller that make easy to maintain and easy to understand.
    - Model is used to get and update data from database.
    - Controller takes request from web browser and makes a call to business logic layer.

**2.2 Mobile application architecture description**

* The activity in Mobile client act like a controller to redirect command from view in mobile.
* It takes HTTP Response from server and makes call HTTP Request.

# **3. Component Diagram**

Figure Component Diagram

|  |  |
| --- | --- |
| **Component Dictionary: Describe component** | |
| **Component Name** | **Description** |
| Mobile Application | Mobile Application package. |
| Web Application | Web Application package: controller, view. |
| Restful Service | Provide API for Mobile Application. |
| Business Logic | Handle business operation for each component. |
| Model Component | Mapping data from database. |
| User Component | Component to handle User activities in the system. |
| Manager Component | Component to handle Manager activities in the system. |
| Customer Component | Component to handle Customer activities in the system. |
| Shipper Component | Component to handle Shipper activities in the system. |

Table Component Dictionary

# **4. Detail Description**

## **4.1 Class Diagram**

Figure Class Diagram

|  |  |
| --- | --- |
| **Class Dictionary** | |
| **Class Name** | **Description** |
| Payment Type | Abstract class that contains Payment type information. |
| Payment Information | Contain Payment Information |
| Price List | Contain Price List information |
| Role | Contain Role information |
| Account | Contain Account information |
| Shipper | Contain Shipper information |
| Status | Contain Status information |
| Order | Contain Order information |
| Resource | Contain Resource information |
| Order Detail | Contain Order Detail information |
| Town | Contain Town information |
| Store | Contain Store information |
| Product | Contain Product information |
| City | Contain City information |

Table Class Dictionary

## **4.2 Class Diagram Explanation**

### **4.2.1 Payment Type**

**Attribute**

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Type | Visibility | Description |
| id | integer | public | Unique identifier of a payment type. |
| type | String | public | Type of Payment |
| name | String | public | Name of payment’s type. |
| description | String | public | Description of payment’s type. |

Table Payment Type Attribute

**Method**

|  |  |  |  |
| --- | --- | --- | --- |
| Method | Return type | Visibility | Description |
| getter() | string | public | get attribute value |
| setter() | void | public | return value of attribute |

Table Payment Type Method

### **4.2.2 Payment Information**

**Attribute**

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Type | Visibility | Description |
| id | integer | public | Unique identifier of a payment information. |
| Account\_id | integer | public | Linked to table of account |
| Payment\_Type\_id | integer | public | Linked to table of payment type |
| username | String | public | Username of account. |
| password | String | public | Password of account. |

Table Payment Information Attribute

**Method**

|  |  |  |  |
| --- | --- | --- | --- |
| Method | Return type | Visibility | Description |
| getter() | String | public | get attribute value |
| setter() | void | public | return value of attribute |

Table Payment Information Method

### **4.2.3 Account**

**Attribute**

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Type | Visibility | Description |
| id | integer | public | Unique identifier of account. |
| Phone\_number | String | public | Phone number of account. |
| Role\_id | integer | public | Linked to table of role. |
| password | String | public | Password of account. |
| name | String | public | Full name. |
| email | String | public | Email of account. |
| extra\_point | integer | public | Extra point of account. |
| report\_point | integer | public | Report point of account |
| user\_image | Longblob | public | Image of account. |
| nation\_id | String | public | Nation Id Card of account. |
| nation\_id\_created\_date | Bigint | public | Create Date of Nation Id Card |
| date\_of\_birth | Bigint | public | Brithday of account. |
| create\_time | Bigint | public | Create time of account. |
| update\_time | Bigint | public | Update time of account. |
| delete\_time | Bigint | public | Delete time of account. |
| note | String | public | Note of account. |
| status | integer | public | Status of account. |
| editor\_id | integer | public | Id of editor’s account. |
| avatar | Longblob | public | Avatar of account. |

Table Account Attribute

**Method**

|  |  |  |  |
| --- | --- | --- | --- |
| Method | Return type | Visibility | Description |
| getter() | string | public | get attribute value |
| setter() | void | public | return value of attribute |

Table Account Method

### **4.2.4 City**

**Attribute**

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Type | Visibility | Description |
| id | integer | public | Unique identifier of account. |
| name | String | public | Name of city. |
| postal\_code | String | public | Postal code of city |

Table City Attribute

**Method**

|  |  |  |  |
| --- | --- | --- | --- |
| Method | Return type | Visibility | Description |
| getter() | string | public | get attribute value |
| setter() | void | public | return value of attribute |

Table City Method

### **4.2.5 District**

**Attribute**

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Type | Visibility | Description |
| id | integer | public | Unique identifier of account. |
| name | String | public | Name of city. |
| City\_id | integer | public | Linked to table of city. |

Table District Attribute

**Method**

|  |  |  |  |
| --- | --- | --- | --- |
| Method | Return type | Visibility | Description |
| getter() | string | public | get attribute value |
| setter() | void | public | return value of attribute |

Table District Method

### **4.2.6 Order**

**Attribute**

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Type | Visibility | Description |
| id | integer | public | Unique identifier of account. |
| editor\_id | integer | public | Id of editor account. |
| account\_id | integer | public | Linked to table of account(customer). |
| shipper\_id | integer | public | Linked to table of shipper. |
| buyer\_face | Longblob | public | Face’s Image of customer. |
| bill | String | public | Bill of customer. |
| order\_code | String | public | Code of order. |
| total\_price | double | public | Total of price. |
| book\_time | Bigint | public | Book time of order |
| receive\_time | Bigint | public | Receive time of order |
| shipper\_earn | double | public | Shipper earn from order. |
| shipper\_address | String | public | Address of delivery. |
| district\_id | integer | public | Linked to table of district. |
| longitude | double | public | Longitude of earth. |
| latitude | double | public | Latitude of earth. |
| customer\_description | String | public | Description of customer. |
| create\_time | Bigint | public | Create time of order. |
| update\_time | Bigint | public | Update time of order. |
| delete\_time | Bigint | public | Delete time of order. |
| note | String | public | Note of order. |
| status | integer | public | Status of order. |

Table Order Attribute

**Method**

|  |  |  |  |
| --- | --- | --- | --- |
| Method | Return type | Visibility | Description |
| getter() | string | public | get attribute value |
| setter() | void | public | return value of attribute |

Table Order Method

### **4.2.7 Order Detail**

**Attribute**

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Type | Visibility | Description |
| id | integer | public | Unique identifier of account. |
| order\_id | integer | public | Linked to table of order |
| product\_id | integer | public | Linked to table of product |
| unit\_price | double | public | Unit\_price of product. |
| quantity | integer | public | Quantity of product. |

Table Order Detail Attribute

**Method**

|  |  |  |  |
| --- | --- | --- | --- |
| Method | Return type | Visibility | Description |
| getter() | string | public | get attribute value |
| setter() | void | public | return value of attribute |

Table Order Detail Method

### **4.2.8 Price Level**

### **4.2.9 Product**

### **4.2.8 Rating**

## **4.3 Interaction Diagram**

# **5. Interface**

## **5.1 Component interface**

## **5.2 User Interface Design**

## **5.3 Guest Interface Design**

# **6. Database Design**

## **6.1 Entity Relationship Diagram (ERD)**

Figure Entity Relation Diagram

## **6.2 Data Dictionary**

|  |  |  |
| --- | --- | --- |
| **Entity Data Dictionary: Describe content of all tables** | | |
| **No.** | **Table Name** | **Description** |
| 1 | Fr\_account | Contain account information |
| 2 | Fr\_city | Contain city information |
| 3 | Fr\_district | Contain district data of city |
| 4 | Fr\_order | Contain data of order’s list |
| 5 | Fr\_order\_detail | Contain data of order |
| 6 | Fr\_payment\_information | Contain data of payment |
| 7 | Fr\_payment\_type | Type of payment |
| 8 | Fr\_price\_level | Select price level for shipper |
| 9 | Fr\_product | Contain data of every product of store |
| 10 | Fr\_rating | Contain data rating of account for product and store |
| 11 | Fr\_role | Contain data role of member |
| 12 | Fr\_schedule | Contain open and close time of store |
| 13 | Fr\_shipper | Contain data of shipper |
| 14 | Fr\_source | Contain source of data |
| 15 | Fr\_store | Contain data of store |
| 16 | Fr\_weekday | Contian id for everyday (Monday, Tuesday, Sunday,…) |

Table Data Dictionary

# **7. Algorithms**