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

**FPT UNIVERSITY**

|  |  |
| --- | --- |
| **Capstone Project Document** | |
| **Face Detection For Delivery Payment** | |
| **Group 5 - IS** | |
| **Group members** | **Nguyễn Văn Hiếu – SE61961 (Leader)**  **Đinh Phú Thắng – SE62528**  **Trần Trọng Nghĩa – SE62278**  **Nguyễn Hữu Lâm– SE61234** |
| **Supervisor** | **Nguyễn Huy Hùng** |
| **Ext. Supervisor** | **N/A** |
| **Project Code** | **FDDP** |

**– Ho Chi Minh City, 20 January 2019**

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# Definitions, Acronyms, and Abbreviations

|  |  |
| --- | --- |
| Name | Definition |
| FDDF | **Face Detection For Delivery Payment** |
| FPS | **FacePayment Solution** |

# Introduction

# Project Information

* **Project name:** Face Detection For Delivery Payment
* **Project Code:** FDDP.
* **Product Type:** Mobile Application.
* **Start Date:** January 05, 2019.
* **End Date: --**

1. **Introduction**

Nowadays, In the 4.0 generation we see the rising of millions ecommerce application, we can easily buy and sell something online, following that many kinds of payment solution have been created, such as online payment, COD payment, … If the application has a good payment solution, which help customers easier, safer and more interesting in paying for their product, then that business will grow up a lot faster.

In this document, we introduce a new payment solution for customer: a mobile application called FacePayment Solution (FPS). The FPS application will be a useful assistance to customer when they want to pay for their product through their face recognize. This document also describes our working process in 4 months including our perspective on the system, component designs and detailed core workflows.

1. **Current Situation**

Vietnamese people are more and more shopping through social networks at the rate of 70% in 2018 compared to 66% of the same period last year. Research by Q & Me shows that shopping on social networks offers more fun while e-commerce floors offer better prices and faster delivery times.

According to Vietnam e-commerce report in 2018, which has been announced by market research company Q & Me on November 28, cash is still the main payment method of Vietnamese people when shopping online, with 80% of people asked which form of payment they usually use on delivery choose COD. Forms such as payment cards, e-wallets, and transfers only account for 8%, 6% and 5% respectively.

1. **Problem Definition**

Below are the disadvantages of the current payment solutions:

* In COD payment, when shippers deliver products to customers, there might be potential issues:
* Shippers might not return cash to the company.
* Shippers receive wrong amount of oney.
* Customers might be fake.
* Payment cards, e-wallets, and transfers account for a smaller percentage, only 20%.
* Policies to ensure online shopping and protect buyer rights are still very lax, cases of customers being scammed, paid and not delivered, delivered wrong goods, fake goods, poor quality goods, damaged during transportation.
* Consumers still have not enough time to adapt and change habits payment online.
* The shop owner is not active, only 7.6% of the website integrates online payment facilities, the remaining 92.4% are not integrated for many reasons.

Above payment problems may reduce the effectiveness of product sale, business’s trademark.

1. **Proposed Solution**

Build a Mobile application to support payment when shippers deliver products. It helps create new payment solution through face recognize function. The following workflow and features should be implemented:

## Feature functions

* Create booking and receive booking system for customer and shipper.
* Using Face recognize method to pay for order.

## Advantages and disadvantages

The advantages and disadvantages of the proposed solution:

* **Advantages**:
* Overcome inherent weaknesses of traditional COD form…
* Taking advantage of COD, Customers can view products before paying, reinforcing trust.
* Quick and convenient payment with relatively high reliability.
* **Disadvantages**:
* There may be problems identifying twins.

1. **Functional Requirement**

Function requirements of the system are listed as below:

## 6.1 Customer Application:

+ Registration, add Face, National ID.

+ Login.

+ Buy products, book shipper.

+ Track ride: Tracking rider location real time.

+ Estimate: Location, time, distance and money customer have to pay.

+ Face detection payment.

+ Check driver’s information.

+ Cancel order.

## 6.2 Driver Application:

+ Login.

+ Receive customer booking.

+ Routing for driver real time.

+ Target define extra earning (optional).

+ Cancel shipping (2 minutes).

## 6.3 Web Administration Application

+ Approve face for payment method.

+ Report revenue.

+ Driver and User manager.

+ Orders manager.

1. **Role & Responsibility**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Full Name** | **Role** | **Position** | **Contact** |
| 1 | Nguyễn Huy Hùng | Project Manager | Supervisor | hungnh@fpt.edu.vn |
| 2 | Nguyễn Văn Hiếu | Developer | Leader | hieunvse61961@fpt.edu.vn |
| 3 | Đinh Phú Thắng | Developer | Member | thangdpse62528@fpt.edu.vn |
| 4 | Trần Trọng Nghĩa | Developer | Member | nghiattse62278@fpt.edu.vn |
| 5 | Nguyễn Hữu Lâm | Developer | Member | lamnhse61234@fpt.edu.vn |

## Table 1: Roles and Responsibilities

1. **Software Project Management**
2. **Problem Definition**
   1. **Name of this Capstone Project**

* **Official name: Face Detection For Delivery Payment.**
* **Vietnamese name: Hệ Thống Hỗ Trợ Thanh Toán Thông Qua Nhận Diện Khuôn Mặt Khi Giao Hàng.**
* **Abbreviation: FDDP.**
  1. **Problem Abstract**
  2. **Project Overview**
     1. **Current Situation**
     2. **The Proposed System**
        1. **Website**
* **For admin (manager)**
* **Admin can manage account:**
* **Admin (**Manager**)**
* **View list of admin.**
* **Search admin with all field.**
* **View data of admin.**
* **User (Customer)**
* **View list of users.**
* **Search user with all field.**
* **View data of user.**
* **Shipper (Staff)**
* **View list of shippers.**
* **Search shipper with all field.**
* **View data of shipper.**
* **Add new shipper.**
* **Deactive shipper.**
* **Select shipper on list and deactive list.**
* **Admin can manage order:**
* **View order list by day.**
* **Search order with all field.**
* **Detected by status.**
* **Cancel order (show who made the actions).**
* **Select order on list and cancel list.**
* **Admin can manage store:**
* **View list of store partners of system.**
* **Search store with all field.**
* **View data of store.**
* **Add new data of store.**
* **Deactive store.**
* **Deactive store selected.**
* **Admin can manage product:**
* **View list of products of store.**
* **Search product with all field.**
* **View data of product.**
* **Add new product depend on store.**
* **Deactive product or list of products selected.**
* **Delete product or list of products selected.**
* **Admin can manage feedback:**
* **Can view feedback from users.**
* **Can make feedback for shipper.**
  + - 1. **Mobile Application**
* **For shipper (staff)**
* **Shipper can register information at the company and Admin will make new account for shipper with this information.**
* **Shipper can take orders of customer.**
* **Shipper can cancel orders of customer in the case allowed.**
* **Shipper can edit their information of account.**
* **Shipper can feedback the service.**
* **Shipper can active or deactive their account when they want.**
* **For users (customer):**
* **User can register new account with their mobile phone.**
* **User can log in or log out system of mobile phone.**
* **User can choose the food or item what they like to add to their cart.**
* **User can edit their information of account.**
* **User can feedback the service.**
* **User can make paying online with face detection.**
  + 1. **Boundaries of the System**
    2. **Future Plans**
    3. **Development Environment**
       1. **Hardware requirements**

**For Server**

|  |  |  |
| --- | --- | --- |
| **Windows** | **Minimum Requirement** | **Recommended** |
| **Internet Connection** | **Cable, Wi-Fi (6 Mbps)** | **Cable, Wi-Fi (16 Mbps)** |
| **Operating System** |  |  |
| **Computer Processor** |  |  |
| **Computer Memory** | **8GB RAM** | **16GB RAM** |

**For Computer**

|  |  |  |
| --- | --- | --- |
| **Windows** | **Minimum Requirement** | **Recommended** |
| **Internet Connection** | **Cable, Wi-Fi (6 Mbps)** | **Cable, Wi-Fi (16 Mbps)** |
| **Operating System** |  |  |
| **Computer Processor** |  |  |
| **Computer Memory** | **4GB RAM** | **8GB RAM** |

**For Table/Mobile**

|  |  |  |
| --- | --- | --- |
| **Windows** | **Minimum Requirement** | **Recommended** |
| **Internet Connection** | **Cable, Wi-Fi (6 Mbps)** | **Cable, Wi-Fi (16 Mbps)** |
| **Operating System** |  |  |
| **Computer Processor** |  |  |
| **Computer Memory** | **4GB RAM** | **8GB RAM** |

* + - 1. **Software requirements**

**For Web**

|  |  |  |
| --- | --- | --- |
| **Software** | **Name / Version** | **Description** |
| **Operating system** |  |  |
| **Environment** |  |  |
| **Modeling tool** |  |  |
| **IDE** |  |  |
| **DBMS** |  |  |
| **Source control** |  |  |
| **Web browser** |  |  |

1. **Project Organization**

## 2.1 Software Process Model

## 2.2 Roles and Responsibilities

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Full name** | **Role in Group** | **Responsibilities** |
| **1** | **Nguyễn Huy Hùng** | **Project manager** | **• Specify user requirement**  **• Control the development process**  **• Give out technique and business analysis support** |
| **2** | **Nguyễn Văn Hiếu** | **Team Leader, BA, DEV, Tester** | **• Managing process**  **• Designing database**  **• Clarifying requirements**  **• Prepare documents**  **• GUI Design**  **• Create test plan**  **• Coding**  **• Testing** |
| **3** | **Đinh Phú Thắng** | **Developer/Tester** | **• Coding**  **• Testing** |
| **4** | **Trần Trọng Nghĩa** | **Developer/Tester** | **• Coding**  **• Testing** |
| **5** | **Nguyễn Hữu Lâm** | **Developer/Tester** | **• Coding**  **• Testing** |

## 2.3 Tools and Techniques

|  |  |
| --- | --- |
| **Tool / Technique** | **Name / version** |
| **Frontend** | **HTML, Thymeleaf, Bootstrap.** |
| **Backend (Web)** | **Java Spring boot MVC, API, My SQL** |
| **Backend (Mobile Application)** | **Android JavaEE , API, My SQL** |

1. **Project Management Plan**

**3.1 Software development life cycle**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Phase** | **Description** | **Deliverables** | **Resource needed** | **Dependencies and constraint** | **Risks** |
| **Requirement analysis** |  |  |  |  |  |
| **Design** |  |  |  |  |  |
| **Implementation** |  |  |  |  |  |
| **Test and complete document** |  |  |  |  |  |
| **Maintenance** |  |  |  |  |  |

**3.2 Phase Detail**

**3.2.1. Phase 1: Requirement Analysis**

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Description** | **Deliverables** | **Author** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

### **3.2.2. Phase 2: System Design**

### **3.2.3. Phase 3: Implementation**

### **3.2.4. Phase 4: Test and complete document**

### **3.2.5. Phase 4: Maintenance**

1. **Coding Convention**

# Software Requirement Specification

1. **User Requirement Specification**
   1. **Guest Requirement**

Guest is a person who doesn’t have access to the system. Guest can use some functions in the system. To use all functions, guest must login. These are some functions guest can use:

* Register.
* Login-Log out.
* View store list.
* View store detail.
* View product list.
* View product detail.
* Add to cart.
  1. **Customer Requirement**
* Make a payment for order.
* Feedback.
* Cancel order.
  1. **Admin Requirement**
* Manage user
  + - * + Search User.
        + View detail of user.
        + Send email to user.
* Manage order
  + - * + Search Order.
        + View detail of order.
        + Cancel order.
* Manage shipper
  + - * + Search shipper.
        + View detail of user.
        + Edit-Update detail of user.
        + Send email to shipper.
* Manage feedback
* View feedback.
* Manage store
  + - * + Search store.
        + View detail of store.
        + Add new store.
        + Deactive store.
* Manage product
  + - * + Search product.
        + View detail of product.
        + Add new product.
        + Deactive product.
        + Delete product.
  1. **Driver Requirement**
* Search order.
* Select order.
* View detail of order.
* View detail of store.
* View detail of product.
* Cancel order.
* Call user (customer).

1. **System Requirement Specification**

## 2.1 External Interface Requirement

### **2.1.1 User Interface**

### **2.1.2 Hardware Interface**

* Smartphone with NFC, 3-4G, Wi-Fi support.
* Smartphone with good camera to support face detection of system.

### **2.1.3 Software Interface**

* Mobile phone should use android OS version above 6.0.
* Web application: work with Firefox, Chrome, Internet Explorer browsers.
* Website for user with responsive, easy to use with many devices.

### **2.1.4 Communication Protocol**

* Http protocol.

## 2.2 System Overview Use Case

**Figure 2: System Overview Use Case**

## 2.3 List of Use Case

### **2.3.1 <User> Overview Use Case**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **USE CASE – UC\_** | | | | | | |
| **Use Case No.** | | UC\_ | | **Use Case Version** | | 1.0 |
| **Use Case Name** | |  | | | | |
| **Author** | |  | | | | |
| **Date** | |  | | **Priority** |  | |
| **Actor:**  **Summary:**  **Goal:**  **Triggers:**  **Preconditions:**  **Post Conditions:**  **Main Success Scenario:** | | | | | | |
| **Step** | **Actor Action** | | **System Response** | | | |
|  |  | |  | | | |
|  |  | |  | | | |
|  |  | |  | | | |
| **Alternative Scenario**: | | | | | | |
| **Step** | **Actor Action** | | **System Response** | | | |
|  |  | |  | | | |
| **Exceptions**: | | | | | | |
| **Step** | **Actor Action** | | **System Response** | | | |
|  |  | |  | | | |
| **Relationships:**  **Business Rules:** | | | | | | |

### **2.3.2 <Admin> Overview Use Case**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **USE CASE – UC\_** | | | | | | |
| **Use Case No.** | | UC\_ | | **Use Case Version** | | 1.0 |
| **Use Case Name** | |  | | | | |
| **Author** | |  | | | | |
| **Date** | |  | | **Priority** |  | |
| **Actor:**  **Summary:**  **Goal:**  **Triggers:**  **Preconditions:**  **Post Conditions:**  **Main Success Scenario:** | | | | | | |
| **Step** | **Actor Action** | | **System Response** | | | |
|  |  | |  | | | |
|  |  | |  | | | |
|  |  | |  | | | |
| **Alternative Scenario**: | | | | | | |
| **Step** | **Actor Action** | | **System Response** | | | |
|  |  | |  | | | |
| **Exceptions**: | | | | | | |
| **Step** | **Actor Action** | | **System Response** | | | |
|  |  | |  | | | |
| **Relationships:**  **Business Rules:** | | | | | | |

### **2.3.3 <Shipper> Overview Use Case**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **USE CASE – UC\_** | | | | | | |
| **Use Case No.** | | UC\_ | | **Use Case Version** | | 1.0 |
| **Use Case Name** | |  | | | | |
| **Author** | |  | | | | |
| **Date** | |  | | **Priority** |  | |
| **Actor:**  **Summary:**  **Goal:**  **Triggers:**  **Preconditions:**  **Post Conditions:**  **Main Success Scenario:** | | | | | | |
| **Step** | **Actor Action** | | **System Response** | | | |
|  |  | |  | | | |
|  |  | |  | | | |
|  |  | |  | | | |
| **Alternative Scenario**: | | | | | | |
| **Step** | **Actor Action** | | **System Response** | | | |
|  |  | |  | | | |
| **Exceptions**: | | | | | | |
| **Step** | **Actor Action** | | **System Response** | | | |
|  |  | |  | | | |
| **Relationships:**  **Business Rules:** | | | | | | |

1. **Software System Attribute**

**3.1 Usability**

**3.2 Reliability**

**3.3 Availability**

**3.4 Security**

**3.5 Maintainability**

**3.6 Portability**

**3.7 Performance**

1. **Conceptual Diagram**

**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,…) |