Software Requirements Specification

Version 1.0
<<Annotated Version>>

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e-Wallet System

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<<Any comments inside double brackets such as these are *not* part of this SRS but are comments upon this SRS example to help the reader understand the point being made.

Refer to the SRS Template for details on the purpose and rules for each section of this document.

This work is based upon the submissions of the CS F213 Object Oriented Programming Course. The students who submitted these team projects were Meghana Gupta, Shirish Kumar, Mukul Kothari, Rutuja Surve, Priyanka Bedarkar, Ranganath Myadam and Yash Verma. >>

Table of Contents

1.0. Introduction

1.1. Purpose

The purpose of this document is to present a detailed description of the e-Wallet System. It will explain the purpose of the e-Wallet system, the flexibility it will guarantee and the constraints under which it will operate.

1.2. Scope of Project

This software system will be an e-Wallet system for the students and faculty of BITS Pilani, K.K Birla Goa Campus. This system will allow any faculty/student (referred to, here on, as Buyer) to make purchases on campus from the eateries, i.e. Monginis, Food King, Institute Cafeteria, Persian Court, Ice n Spice, Borkars, the Evening Snacks and Night Mess available in A and C Messes, the two stationery shops on campus and the two laundry services.

More specifically, this system is designed to allow such services by using the unique ID and login password that will be provided by the SWD, and then deducting the amount of the purchase from the bank account, linked to the SWD Database, of the Buyer. The service also allows you to make a purchase even if your bank balance is insufficient. An SMS is sent at the end of the transaction to notify the Buyer, and the system is designed with minimal frills to reduce all possible hassles. The system also contains a Database containing a list of ID Numbers, the names corresponding to the ID numbers, the Account Number for the linked bank account, the corresponding balance in the account and the phone numbers.

1.3. Glossary

Term	Definition
Admin	The corresponding in-charge in the Student Welfare Division of BITS Pilani, K.K Birla Goa Campus.
Buyer	The student / faculty member who is allowed to use the system for e-Wallet. The Buyer must teach / study in BITS Pilani K.K Birla Goa Campus.
Database	An online repository that will contain the details of all the e-Wallets created, along with all the requisite information.
Retailer	The shopkeeper / owner providing services at Monginis, Food King, Institute Cafeteria, Persian Court, Ice n Spice, Borkars, the Evening Snacks and Night Mess available in A and C Messes, the two stationery shops on campus and the two laundry services.

1.4. Overview of Document

The next chapter, the Overall Description section, of this document gives an overview of the functionality of the product. It describes the informal requirements and is used to establish a context for the technical requirements specification in the next chapter.

The third chapter, Requirements Specification section, of this document is written primarily for the developers and describes in technical terms the details of the functionality of the product.

Both sections of the document describe the same software product in its entirety, but are intended for different audiences and thus use different language.

2.0. Overall Description

2.1 System Environment

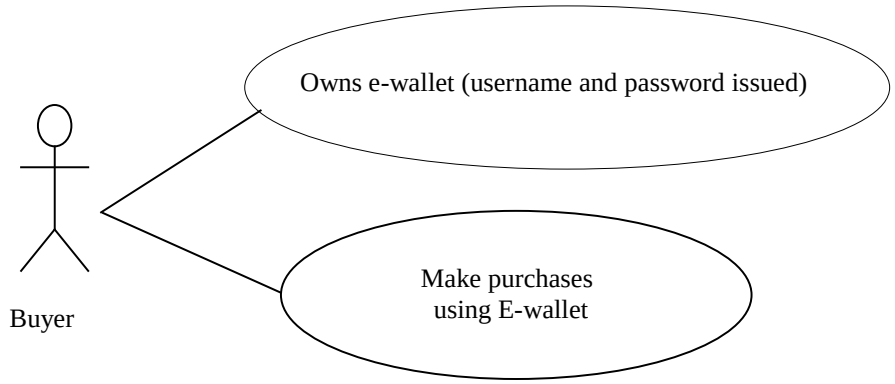
The Web Publishing System has four active actors and one cooperating system. The Buyer, Retailer or Admin accesses the Online Database through the Internet. The Buyer enters his ID and login password, and can make the payment successfully.

2.2 Functional Requirements Specification

This section outlines the use cases for each of the active users separately.

2.2.1 Buyer Use Case

Diagram:

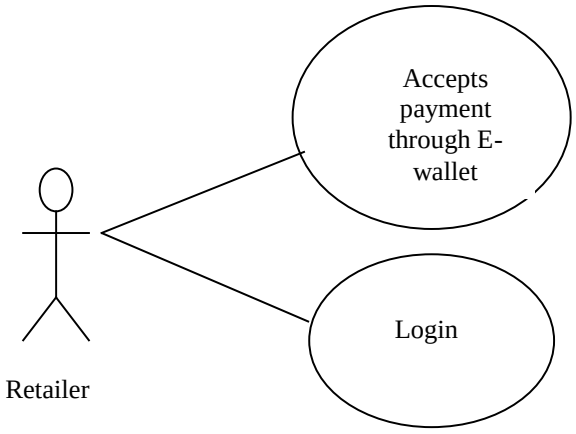


Brief description:
The Buyer uses E-wallet to purchase different items/services on campus.

Step by Step Description:
1. The Buyer goes to a shop to buy items or avail of a service.
2. Selects the items that he wants.
3. Goes to the cash counter for billing.
4. Uses E-wallet for payment.
5. Logs in into his account by entering username and password.
6. Money gets deducted from his account when he buys/uses a particular service/item.
7. Receives an SMS of a successful payment.

2.2.2 Retailer Use Case

Use case: Retailer use case
Diagram:

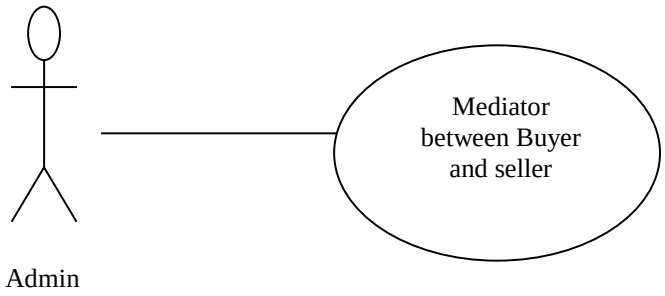


Brief Description:
The Retailer asks the students to log in to their e-Wallet account and make the payment, and then logs into his own e-Wallet to check whether the payment was successful or not.

Step By Step Description:
1. Brings items or goods to be sold to the store; in case of Eateries, cooks food that is eaten by students.
2. Charges students for the services they provide.
3. Accepts the payment through e-wallet of Buyers.
4. Logs in using user-name and password to check whether the payment was successful or not.
5. Keeps the transaction details of each and every transaction.
6. Receives an SMS of payment received.

2.2.3 Admin Use Case

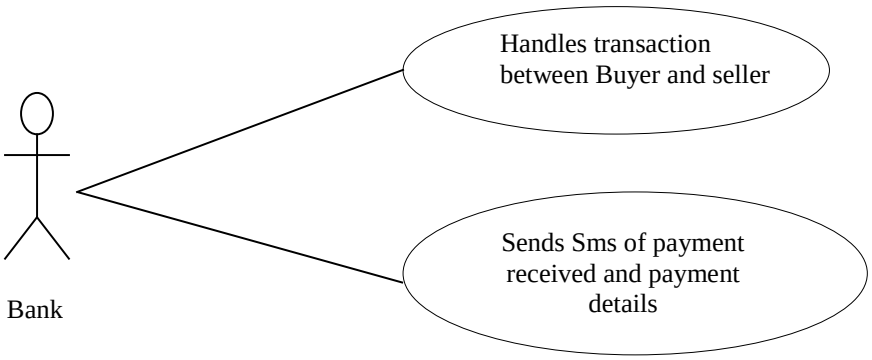
Diagram:



Brief Description
The Admin manages all the transactions between Buyers, Retailers and bank.

Initial Step-By-Step Description
1. Issues the E-wallet to the students & provides default username and password.
2. Manages the money flow from Buyer's bank account to Retailers bank account.
3. Provides username and password to the Retailer to check the transactions.
4. Maintains the record of the all the transactions.
5. Deletes the E-wallet account of the Buyer.

2.2.4 Bank Use Case

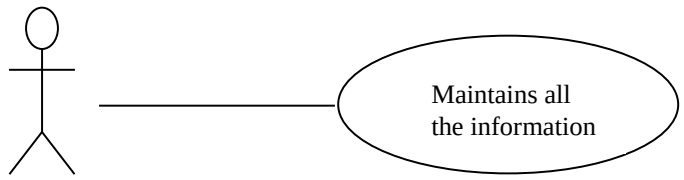


Brief Description
Transfers money from student's account to Retailer's account and manifests E-wallet.

Initial Step-By-Step Description
1. Validates E-wallet.
2. Receives the payment from the Buyer.
3. Transfers the money into the bank account of the Retailer.
4. Generates a transaction copy of every transaction.
5. Responsible for providing message of a successful transaction to the Buyer as well as the seller.

2.2.5 Database Use Case:

Diagram:



Database

Brief Description
The Database contains all the information about the Buyers, Retailers, transactions, account, numbers, etc.

Initial Step-By-Step Description
1. Contains all the information about the Buyers and Retailers, like their username, password, bank account no., etc.
2. It has all the transaction details of each and every transaction.
3. Supplies the information to the Admin (SWD), when needed.

2.3 User Characteristics

The Buyer has a unique login ID and password, and is expected to remember his login ID and password. If he forgets either, he will have to log into their SWD and click on the “forgotten password” link.

The Retailer is provided with a unique ID and password of his own, to check whether

the transaction has been successful or not. The Retailer needs to have an internet connection to allow the Buyer to login and sanction the transaction, and is expected to be Internet literate.

The Admin is basically an automated software that will be handled by someone in the SWD, although they will not be given privileges to view passwords, the account balance and other sensitive information.

The Database will contain a profile table, that will have the ID number, phone number and total balance, and a transaction table, that will contain the account number and transaction ID.

2.4 Non-Functional Requirements

The software to login and make the transaction will be given exclusively to the Retailers and will be pre-installed on their computers.

For password resetting in case the Buyer forgets his/her password, a request will be made through their SWD account, which will send a randomly generated password on the Buyer's registered email ID. The student will have to reset their password thereafter.

The Database will be automated, so that no one is given access to private information.

3.0.Requirements Specification

3.1 Functional Requirements

3.1.1 Make payment

Trigger	The Buyer wants to purchase a service/ good.
Precondition	The Buyer must have an e-Wallet account.
Basic Path	1. The Buyer selects the item. 2. He goes ahead to the Retailer to request the purchase. 3. The Buyer logs into his e-Wallet with his unique ID and password. 4. The Buyer sanctions the payment. 5. He logs out after a successful transaction.
Alternative Paths	In step 3, in case the Database in unable to find any Buyer with the entered unique ID: 1. The Database will throw up an error message. 2. The Buyer will reenter the correct ID or abandon the purchase.
Postcondition	The Retailer and Buyer are informed of the purchase through an SMS to the registered number in the Database.
Exception Paths	The Buyer may abandon the purchase at any time.

3.1.2 Change password

Trigger	The user requests a change in password.
Precondition	Has to click on the link to "change password".
Basic Path	1. The Buyer logs into their SWD account. 2. Clicks on the link to change password. 3. Changes his/her password.
Alternative Paths	If the user has forgotten their password, they can click on the "forgotten password" link and a randomly generated password will be sent to their registered email ID.
Postcondition	A "password successfully changed" message is displayed.
Exception Paths	The attempt may be abandoned at any time.
Other	None

3.1.3 Delete e-Wallet

Trigger	The Buyer deletes his/her e-Wallet account.
Precondition	The request is made through the SWD account.
Basic Path	1. The Buyer decides to delete his/her e-Wallet account. 2. A request is sent to the SWD Admin. 3. The account is deleted from the Database.
Alternative Paths	None
Postcondition	The Buyer is sent a mail on the email ID stating that the account is deleted.

Exception Paths	The Buyer may abandon the operation at any time.
Other	None.

3.1.4 Create e-Wallet and issue username and password

Trigger	The Buyer makes a request to create an e-Wallet for them.
Precondition	The Buyer makes the request through the registered SWD account.
Basic Path	1. The buyer fills in the email ID and phone number he/she would like to use for correspondence. 2. The Admin receives the request to create an e-Wallet. 3. The buyer's college ID number is issued as the ID number for the e-Wallet, and a randomly generated password is sent. 4. The corresponding details are added in the Database to make a copy and record all details.
Alternative Paths	None
Postcondition	The Buyer is sent an email on their registered email ID.
Exception Paths	None.
Other	None.

3.2 Security:

The automated SWD software will maintain a log of all the times a change in the password is made. In case the actual owner of the e-Wallet has not authorized a purchase/password change, they can ask for the log and check what transaction was made by whom, and when and where was it done.

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