Fpt University

TRƯỜNG ĐẠI HỌC FPT

CAPSTONE PROJECT REPORT

Report 5 – Software Test Documentation

– Hanoi, August 2023 –

Table of Conte

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I. Record of Changes

Date	A* M, D	In charge	Change Description
23/02	A	LongCH	Create test documentation.
13/04	M	LongCH	Update test documentation.
14/04	M	LongCH	Update test documentation.

*A - Added M - Modified D - Deleted

II. Testing Documentation

1. Scope of Testing

1.1 Target of Testing

Our test scope includes the following features, functions, and functional requirements:

Functions: Some features – defined in section 3 of [SRS] document.

Non-functional:

1.External Interfaces

+) The system is not connected to any external applications.

2. User Interface

+) Utilise responsive design to ensure seamless interaction across all devices.

3. Performance Requirements

+) The system allows customers to order food quickly.

4. Security Requirements

+) Users MUST authenticate with a password that is a minimum of 4 characters and a maximum of 20 characters and contains no spaces.

1.2 Software testing life cycle.

1. Test planning : Determine the test objective and approach to achieve the goal, can be reviewed based on feedback from monitoring and control activities, information about test basis, output criteria (used throughout the monitoring and control process).

2. Test monitoring and control : Includes continuous comparison of actual progress against test plan using test monitoring metrics identified in the test plan, includes performing the necessary activities to achieve the test plan's goals, check the test results and log the coverage criteria, evaluate the quality level of components or the entire system based on test results and logs.

3. Test analysis : Requirements specification, design and implementation information, evaluate test basis and test items to identify errors, information about test conditions, report an error in test basis.

4. Test design : Design and prioritise test cases and test case sets, identify the test data needed to support test conditions and test cases, design the test environment and determine the necessary infrastructure and tools, capture two-way traceability between test basis, test conditions, test cases and test procedures.

5. Test implementation : Develop and prioritise test procedures, and may create automated test scripts, create test suites from test procedures and automated test scripts (if any), build the test environment and verify that everything necessary is installed correctly, prepare test data and ensure they are loaded correctly in the test environment.

6. Test execution : Analyse anomalies to determine possible causes, defect reports are based on observed failure symptoms, repeat testing activities when there are abnormal results, verify and update 2-way traceability between test basis, test conditions, test cases, test procedures and test results.

1.3 Test phases

ID	Phases of testing	Description
1	Unit test	The main aim of this endeavour is to determine whether the application functions as designed. In this phase, a unit can refer to a function, individual program, or even a procedure, and a White-box Testing method is usually used to get the job done
2	Integration test	Integration testing allows individuals the opportunity to combine all of the units within a program and test them as a group. This testing level is designed to find interface defects between the modules/functions. This is particularly beneficial because it determines how efficiently the units are running together.
3	System test	System testing is the first level in which the complete application is tested as a whole. The goal at this level is to evaluate whether the system has complied with all of the outlined requirements and to see that it meets Quality Standards.

2. Test Strategy

2.1 Testing Types

Function test : Unit testing stands as a cornerstone practice in modern software development, offering a myriad of advantages throughout the development lifecycle. By systematically testing

individual units or components of software in isolation, unit testing contributes significantly to the overall quality, reliability, and maintainability of software systems.

Integration test: Integration testing complements unit testing as another crucial aspect of software quality assurance. While unit testing focuses on verifying the functionality of individual units or components in isolation, integration testing examines the interactions between these units when integrated into larger modules or systems.

Integration testing plays a pivotal role in software development by validating the interactions and interfaces between various modules, ensuring that they function seamlessly together as intended. By simulating real-world scenarios and testing the integration points, this testing approach uncovers potential issues such as communication failures, data inconsistencies, and interface mismatches early in the development cycle. Consequently, integration testing helps mitigate risks associated with system integration, preventing costly defects from surfacing in production environments.

System test: System testing represents the final frontier in the quality assurance process of software development. Unlike unit testing, which focuses on individual components, or integration testing, which verifies interactions between modules, system testing evaluates the entire software system as a unified entity.

System testing serves as the ultimate validation step, encompassing all aspects of the software, including its user interface, functionality, performance, and reliability. By subjecting the system to a battery of tests that simulate real-world usage scenarios, system testing aims to uncover any defects or discrepancies between the software's intended behaviour and its actual performance. This comprehensive testing approach helps identify issues such as usability problems, compatibility issues, security vulnerabilities, and performance bottlenecks, ensuring that the software meets the specified requirements and delivers a satisfactory user experience.

2.2 Test Levels

Type of Tests	Test Level			
	Unit	Integration	System	Acceptance
Function test	X			
Integration test		X		
System test			X	

2.3 Supporting Tools

Details of the tools the project will use for testing:

Purpose	Tool	Vendor/In-house
View website	Google Chrome	Google
Manage test cases, logging bug	Google Sheet	Google
Manage test plan	Google Doc	Google

Unit Test	Postman	Postman
Integration Test	Google Sheet	Google
System Test	Google Sheet	Google

3. Test Plan

3.1 Human Resources

Below are the roles and responsibilities of team members involved in testing activities in the project:

Worker/Doer	Role	Specific Responsibilities/Comments
Lê Hà Nam	PM	Managing software testing time and bug fixing.
Nguyễn Phương Linh	Develop back-end + fix bug	Back-end processing and bug fixing.
Chu Văn Luân	Develop front-end + fix bug.	Front-end development and bug fixing.
Chu Tuấn Dũng	Develop front-end + fix bug.	Front-end development and bug fixing.
Chu Hồng Long	Leader Test.	Assign task to team member with test summary.

3.2 Test Environment

Details of the devices the project will use for testing:

Purpose	Tool	Provider	Version
View UI of customer.	Iphone XS Max	Apple	IOS 17
View UI of customer.	Sam Sung	Android	Android 11
View manage website	Laptop	Asus	Win 11
View chef website	Laptop	Asus	Win 11
View eatery owner website	Laptop	Asus	Win 11

3.3 Test Milestones

Milestone Task	Start Date	End Date
Create Test Plan	07/03/2024	09/03/2024
Create and execute Unit Test for Iteration 1	12/03/2024	13/03/2024
Create and execute Unit Test for Iteration 2	14/03/2024	16/03/2024
Create and execute Unit Test for Iteration 3	17/03/2024	17/03/2024
Create and execute Integration Test for Iteration 1	18/03/2024	22/03/2024
Create and execute Integration Test for Iteration 2	23/03/2024	26/03/2024
Create and execute Integration Test for Iteration 3	27/03/2024	30/03/2024
Create and execute System Test for Iteration 1	01/04/2024	04/04/2024

Create and execute System Test for Iteration 2	05/04/2024	08/04/2024
Create and execute System Test for Iteration 3	09/04/2024	12/04/2024

4. Test Cases

4.1 Unit Test

Details are shown in the excel file Report5.1_Unit Test.excel

Code Module	*ProductModule*		**Method**				createNewProduct									
Created By			**Executed By**				*LongCH*									
Test requirement																
Passed	**Failed**		**Untested**				**N/A/B**			**Total Test Cases**						
5	5		5				7	2	1	15						
			UTCID01	**UTCID02**	**UTCID03**	**UTCID04**	**UTCID05**	**UTCID06**	**UTCID07**	**UTCID08**	**UTCID09**	**UTCID10**	**UTCID11**	**UTCID12**	**UTCID13**	**UTCID14**	**UTCID15**
Condition	Precondition																
		Login successful	O	O	O	O	O	O	O	O	O	O					
	categoryId																
		"1"	O	O			O	O	O	O							
		null			O	O					O	O					
	image																
		product.jpg	O		O	O			O		O						
		null		O			O	O		O		O					
	name																
		product_1	O	O		O		O		O							
		product_2			O		O		O		O	O					
	price																
		12500	O	O	O			O			O						
		null				O	O		O	O		O					
	status																
		TRUE	O	O	O		O		O		O						
		FALSE				O		O		O		O					
Confirm	Return																
		success	O		O			O	O	O	O	O					
		failed		O		O	O										
	Log message																
Result	Type(N : Normal, A : Abnormal, B : Boundary)		N	N	N	B	A	A	N	N	N	N					
	Passed/Failed		P	P	P	P	P	F	F	F	F	F					
	Executed Date		03/17	03/17	03/17	03/17	03/17	03/17	03/17	03/17	03/17	03/17					
	Defect ID																

Figure Test case unit test

4.2 Integration Test

Details are shown in the excel file Report5.2_Integration Test.excel

Feature	Update Product													
Test requirement	Update product													
Number of TCs	9													
Testing Round	*Passed*	*Failed*	*Pending*	*N/A*										
Round 1	9	0	0	0										

Test Case ID	Test Case Description	Test Case Procedure	Expected Results	Pre-conditions	Round 1	Test date	Tester	Round 2	Test date	Tester	Round 3	Test d
Update Product												
Product_15	Test UI update product.	1. Click icon update of product in each line of product.	1. Update product pop-up is displayed with fields "Danh mục" , "Tên sản phẩm", "Giá", "Trạng thái", "Ảnh" with data, button "Đóng" , "Lưu".	Login with manager account or eatery owner , go to the product page.	Failed	18/03/2024	LongCH	Failed	23/03/2024	LongCH	Passed	27/0
Product_16	Test update product with change "Danh mục".	1. Change "Danh mục" of this product. 2. Click "Lưu".	1. Pop-up "Cập nhập thành công" is display. 2. Redirect to list product screen. 3. "Danh mục" of this product change.	Login with manager account or eatery owner, go to the product page and choose product to update.	Passed	18/03/2024	LongCH	Passed	23/03/2024	LongCH	Passed	27/0
Product_17	Test update product with change "Tên sản phẩm"	1. Change "Tên sản phẩm" of this product. 2. Click "Lưu".	1. Pop-up "Cập nhập thành công" is display. 2. Redirect to list product screen. 3. "Tên sản phẩm" of this product change.	Login with manager account or eatery owner, go to the product page and choose product to update.	Failed	18/03/2024	LongCH	Failed	23/03/2024	LongCH	Passed	27/0
Product_18	Test update product with change "Giá" is number	1. Change "Giá" of this product. 2. Click "Lưu".	1. Pop-up "Cập nhập thành công" is display. 2. Redirect to list product screen. 3. "Giá" of this product change.	Login with manager account or eatery owner, go to the product page and choose product to update.	Passed	18/03/2024	LongCH	Passed	23/03/2024	LongCH	Passed	27/0
Product_19	Test update product with change "Giá" is not number	1. Change "Giá" of this product is "ABCCC". 2. Click "Lưu",	1. Pop-up "Lỗi, Xin vui lòng thử lại" is display. 2. Redirect to "Chỉnh sửa" screen.	Login with manager account or eatery owner, go to the product page and choose product to update.	Failed	18/03/2024	LongCH	Passed	23/03/2024	LongCH	Passed	27/0
Product_20	Test update product with change "Trạng thái"	1. Change "Trạng thái" of this product. 2. Click "Lưu".	1. Pop-up "Cập nhập thành công" is display. 2. Redirect to list product screen. 3. "Trạng thái" of this product change.	Login with manager account or eatery owner, go to the product page and choose product to update.	Passed	18/03/2024	LongCH	Passed	23/03/2024	LongCH	Passed	27/0
Product_21	Test update product with change "Ảnh"	1. Change "Ảnh" of this product. 2. Click "Lưu"	1. Pop-up "Cập nhập thành công" is display. 2. Redirect to list product screen. 3. "Ảnh" of this product change.	Login with manager account or eatery owner, go to the product page and choose product to update.	Failed	18/03/2024	LongCH	Passed	23/03/2024	LongCH	Passed	27/0
Product_22	Test update product with change "Ảnh" when click button "Tải Ảnh Lên"	1. Choose "Ảnh" from device and click "Open". 2. Click "Lưu".	1. Pop-up "Cập nhập thành công" is display. 2. Redirect to list product screen. 3. "Ảnh" of this product change.	Login with manager account or eatery owner, go to the product page and choose product to update, click button "Tải ảnh lên" ;	Failed	18/03/2024	LongCH	Failed	23/03/2024	LongCH	Passed	27/0
Product_23	Test update product with change all "Danh mục", "Giá", "Trạng thái", "Tên sản phẩm", "Ảnh"	1. Change all product data fields.	1. Pop-up "Cập nhập thành công" is display. 2. Redirect to list product screen. 3. "Danh mục", "Giá", "Trạng thái", "Tên sản phẩm", "Ảnh" of this product change.	Login with manager account or eatery owner, go to the product page and choose product to update.	Failed	18/03/2024	LongCH	Failed	23/03/2024	LongCH	Passed	27/0

Figure Test case integration test

4.3 System Test

System test:

Details are shown in the excel file Report5.3_System Test.excel

Workflow	Manage Product			
Test requirement	Manage Product			
Number of TCs	12			
Status	*Passed*	*Failed*	*Pending*	*N/A*
Total	12	0	0	0

Test Case ID	Test Case Description	Test Case Procedure	Expected Results	Pre-conditions	Round 1	Test date	Tester	Round 2	Test date	Tester	Round 3	Test date	Tester	Note
Manage Product														
Manager_Product_1	Test view list products.	1. Click on "Sản phẩm" button on left-corner menu.	1. Product list screen is displayed with fields "Số thứ tự", "Ảnh" , "Tên sản phẩm" , "Giá" , "Danh mục" , "Trạng thái" , "Quản lý".	Login with account manager or eatery owner role.	Passed	02/04/2024	LongCH	Passed	06/04/2024	LongCH	Passed	10/04/2024	LongCH	
Manager_Product_2	Test view UI of create products.	1. Click on "Sản phẩm" button on left-corner menu. 3. Click button "Thêm mới".	2. Product list screen is displayed. 4. Create product pop-up is display with "Danh mục", "Tên sản phẩm", "Giá", "Trạng thái", "Ảnh" and button "Tải Ảnh Lên" , "Đóng" , "Lưu"	Login with account manager or eatery owner role.	Failed	02/04/2024	LongCH	Passed	06/04/2024	LongCH	Passed	10/04/2024	LongCH	
Manager_Product_3	Test create product successfully.	1. Click on "Sản phẩm" button on left-corner menu. 3. Click button "Thêm mới". 5. Enter input : - Danh mục : Món tráng miệng - Tên sản phẩm : Bánh gạo - Giá : 25000 - Trạng thái : Đanh kinh doanh. - Ảnh : image.png 6. Click "Lưu".	2. Product list screen is displayed. 4. Create product pop-up is display. 7. Pop-up "Thêm mới thành công" is display.	Login with account manager or eatery owner role.	Failed	02/04/2024	LongCH	Failed	06/04/2024	LongCH	Passed	10/04/2024	LongCH	
Manager Product_4	Test create product with do not select "Trạng thái".	1. Click on "Sản phẩm" button on left-corner menu. 3. Click button "Thêm mới". 5. Enter input : - Danh mục : Món ăn phụ - Tên sản phẩm : Nước ngọt - Giá : 30000 - Ảnh : Pizza.png 6. Click "Lưu".	2. Product list screen is displayed. 4. Create product pop-up is display. 7. Pop-up "Thêm mới thành công" and the product is added to the product list with "Trạng thái" : Ngừng kinh doanh.	Login with account manager or eatery owner role.	Passed	02/04/2024	LongCH	Passed	06/04/2024	LongCH	Passed	10/04/2024	LongCH	
Manager Product_5	Test create product with Danh mục , Tên sản phẩm, Trạng thái,Giá ,Ảnh empty	1. Click on "Sản phẩm" button on left-corner menu. 3. Click button "Thêm mới" 5. Enter input : - Danh mục : - Tên sản phẩm:	2. Product list screen is displayed. 4. Create product pop-up is display. 7. Fields "Danh mục", "Tên sản	Login with account manager or eatery owner role.	Failed	02/04/2024	LongCH	Passed	06/04/2024	LongCH	Passed	10/04/2024	LongCH	

Figure Test case system test

5. Test Reports

5.1 Unit Test

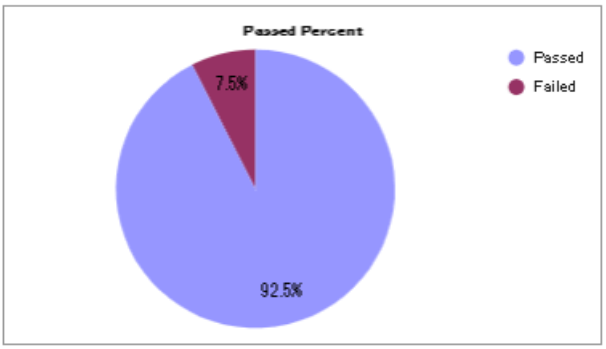
The following is the unit test statistics table.

UNIT TEST REPORT

Project Name	*Eatery Management System*	**Creator**	LongCH
Project Code	*EMS*	**Reviewer/Approver**	NAMLH
Document Code	*EMS_Test Report_v1.0*	**Issue Date**	*13/03/2024*
Notes			

No	Function code	Passed	Failed	Untested	N	A	B	Total Test Cases
1	bgin	9	0	0	6	3	0	9
2	createNewCategory	6	0	0	3	2	1	6
3	getAllCategory	5	0	0	3	1	1	5
4	getCategoryById	6	1	0	3	3	1	7
5	updateCategory	6	0	0	3	1	2	6
6	deleteCategory	6	0	0	3	2	1	6
8	createNewProduct	5	5	0	3	2	1	10
9	getAllProduct	6	0	0	3	2	1	6
10	getProductById	9	0	0	5	2	2	9
11	updateProduct	7	0	0	4	2	1	7
12	deleteProduct	9	0	0	5	1	3	9
	Sub total	74	6	0	41	21	14	80

Test coverage	**100.00 %**
Test successful coverage	**92.50 %**
Normal case	**51.25 %**
Abnormal case	**26.25 %**
Boundary case	**17.50 %**



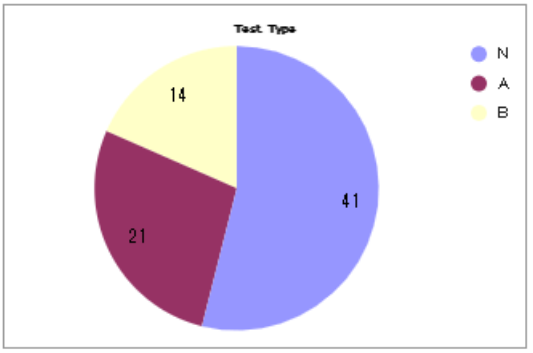


Figure Test reports unit test

5.2 Integration Test

Here we have combined many functions together for IT. that will ensure the product has the fewest possible defects.

TEST STATISTICS

Project Name	*Eatery Management System*	Creator	LongCH
Project Code	*EMS*	Reviewer/Approver	NAMLH
Document Code	*EMS Integration Test Report v1.2*	Issue Date	23/02/2024
Notes			

No	Module code	Passed	Failed	Pending	N/A	Number of test cases
1	Login	6	0	0	0	6
2	Logout	3	0	0	0	3
3	View List Product	4	0	0	0	4
4	Create product	10	0	0	0	10
5	Update Product	9	0	0	0	9
6	View Detail Product	1	0	0	0	1
7	View List Category	4	0	0	0	4
8	Create Category	4	0	0	0	4
9	Update Category	4	0	0	0	4
10	View Detail Category	1	0	0	0	1
11	View List User	4	0	0	0	4
12	Create User	10	0	0	0	10
13	Update User	9	0	0	0	9
14	View Detail User	1	0	0	0	1
15	View List Table	3	0	0	0	3
16	Create Table	4	0	0	0	4
17	Update Table	4	0	0	0	4
18	View Menu	6	0	0	0	6
19	Add To Cart	3	0	0	0	3
20	View Cart	6	0	0	0	6
21	View List Order Dish	5	0	0	0	5
22	View List Order	3	0	0	0	3
23	View Order Detail	1	0	0	0	1
24	View List Bill	3	0	0	0	3
	Sub total	108	0	0	0	108

Test coverage	100.00 %
Test successful coverage	100.00 %

Figure Test reports integration test

5.3 System Test

Here we have used a common restaurant flow that customers often use to test possible customer situations.

TEST STATISTICS

Project Name	Eatery Management System	Creator	LongCH
Project Code	EMS	Reviewer/Approver	NAMLH
Document Code	Report5.3_System Test_v1.3	Issue Date	*25/02/2024*
Notes			

No	Module code	Passed	Failed	Pending	N/A	Number of test cases
1	Login	6	0	0	0	6
2	Logout	3	0	0	0	3
3	Manage Product	12	0	0	0	12
4	Manage Category	9	0	0	0	9
5	Manager User	10	0	0	0	10
6	Manage Table	8	0	0	0	8
7	Manage Cart	7	0	0	0	7
8	Manager Order	2	0	0	0	2
	Sub total	57	0	0	0	57

Test coverage	100.00 %
Test successful coverage	100.00 %

Figure Test reports system test

5.4 Summary Test

The table below summarises the results of the testing process.

SUMMARY TEST REPORT

Project Name	Eatery Management Systems	**Creator**	Long CH
Project Code	EMS	**Reviewer/Approver**	NamLH
Document Code		**Issue Date**	15/04/2024
Notes	Release 1 (v0.01.0)		

No	Module code	Pass	Fail	Pending	N/A	Number of test cases
1	Unit Test	80	0	0	0	80
2	Intergration Test	108	0	0	0	108
3	System Test	57	0	0	0	57
	Sub total	245	0	0	0	245

Test coverage	100.00	%
Test successful coverage	100.00	%

Figure Summary test