

**VIETNAM NATIONAL UNIVERSITY, HO CHI MINH CITY**

**HO CHI MINH UNIVERSITY OF TECHNOLOGY**



**SOFTWARE ENGINEERING REPORT**

**TOPIC**

**USABILITY TESTING REPORT FOR UWC 2.0 PROJECT**

**CLASS CC02 --- GROUP 03 --- HK222**

**Lecturer : Bùi Hoài Thắng**

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## **1. Executive Summary**

The rapid urbanization growth has created multiple problems for humankind, waste being one of them. As the amount of trash increases every day, it is essential to create and innovate ways of waste collection around the world to protect the environment and people's health. The common routine for waste collection around the world nowadays usually involves back officers - planning and coordinating janitors and collectors; janitors - collecting waste and moving them to MCPs, and collectors - driving collecting vehicles to MCPs to collect waste. However, in Vietnam the routine is usually cut as collectors will manually collect waste from each household or a smaller scale of MCP. This causes the vehicle to cover almost every path available to pick up waste, resulting in traffic jams, time-wasting and possibly spreading the bad odor around the city. Therefore we urgently need to fix this bad routine as soon as possible. Company Y is a waste management company that provides services for collecting waste around the city. They currently have a management system called UWC 1.0. However, as time passed by, the system proved to be overwhelmed by the increasing waste, therefore making it inefficient and costly. So, they wanted to implement a new system called UWC 2.0 to sharply reduce costs and increase working efficiency. Their requirements for the new system vary from adding new functions, and increasing database size to making room for future upgrades. As company X received this project from company Y, we will help company X to create UWC 2.0.

## **2. Goals**

This usability test is conducted for testing the UWC 2.0 system that we developed. The system is tested by many types of people. In this report, due to lack of workforce, we could only invited 3 students to undertake the testing. Each of them tests all the functions and gives us numerous feedbacks in the end. Since they have some feedbacks about the same function, we just pick out 3 main tasks which are the most important tasks and they need to be improved immediately by our developer team. Lastly, we greatly appreciate all 3 testers for giving us their modest feedbacks without any hesitation. Thank you very much and we wish you guys all the best.

## **3. Methodology**

These tasks are mainly based on **qualitative usability testing**. This method is used to gain insights, findings, and anecdotes about how people use the UWC 2.0 system. The problems occurring during use time will be discovered easily.

Besides, the participants conduct the test without the moderation of facilitators. The participants follow written tasks provided by us at a remote place. The participant completes those tasks alone on her own time. After the participant completes her test, the researcher receives a recording of the session, along with task success.

#### **4. Participant Profiles**

a) Tester 1

- Ngô Trương Trọng Nghĩa
- Age: 20
- Gender: Male
- Career: Student
- In charge of testing task 2

b) Tester 2

- Ngô Chấn Phong
- Age: 20
- Gender: Male
- Career: Student
- In charge of testing task 3

c) Tester 3

- Võ Hoàng
- Age: 20
- Gender: Male
- Career: Student
- In charge of testing task 1

#### **5. Task tested**

The participants are required to conduct below tasks:

a) Task 1:

- Participants log in to the system with provided **username** and **password**.
- Then select the **Assign tasks** section.
- Next, participants find the task with name “Nguyen Nam Phi”.
- Change the ID of “Nguyen Nam Phi” to the ID of “Pham Tuong Linh”.
- Select **OK** to confirm the new changes.

b) Task 2:

- Assuming that participants are already registered and stay at the **Assign tasks** section.
- Participants look for **Checking & Assigning vehicles** button.
- A list of “free-vehicles” workers is shown. Participants choose randomly a worker. Here he chooses “Nguyen Nam Phi”.
- Click the **ASSIGN** button on the down-right side. A message box is displayed with 2 options: “Trollers” and “Trucks”.
- If he chooses “Trucks”, a list of “waiting” trucks is shown and he can assign any “free” truck for that collector.
- If he chooses “Trollers” but the worker is not a janitor, the website will pop-up a message “Cannot assign. Different type of worker. Try again.”
- The website will pop-up a message “Assign vehicles successfully”.

c) Task 3:

- Assumming that participants are already logged in with the given **username** and **password**.
- Nearly the same as the above task but in this case participants look for **Assign Route** button.

- After editing the list of the range of MCPs, participants click the **Assign Route** button to check if workers' tasks are assigned and the **View Route** button will be used to display the route with the map on the right side of our website.

## 6. Post-Test questions

### a) Task 1:

- Is it easy to recognize components of UI/UX?
- Is the font harmonious with the theme of UI?
- Are there any difficulties finding the **Assign tasks** section?
- Can participants easily notice the successfully applied notifications when new changes of **Assign tasks** are applied?

### b) Task 2:

- Is the interface friendly enough for participants to use without confusion?
- Are there challenges during the process of operating those functions? If it has, what should developers improve?

### c) Task 3:

- How easy is it to find specific information on this website?
- How confused did group members feel while working on this site?
- How hard was it to concentrate on searching for information?

## 7. Results

### a) Task 1:

Before:

MCP ASSIGNMENT

ROUTE PLANNING

VEHICLE ASSIGNMENT

Task

Task ID:

Range:

Collector ID:

C8401

Collector Name:

Nguyen Nam Phi

List Of MCPs:

EDIT

OK

Task ID:

Range:

Collector ID:

C5762

Collector Name:

Tran Gia Lap

List Of MCPs:

EDIT

OK

Task ID:

Range:

Collector ID:

C2278

Collector Name:

Tran Tuong Linh

List Of MCPs:

EDIT

OK

Apply conducting tasks:

MCP ASSIGNMENT
ROUTE PLANNING
VEHICLE ASSIGNMENT

### Task

Task ID:
Range:

Collector ID: C2278

Collector Name: Tran Tuong Linh
List Of MCPs:

EDIT
OK

Task ID:
Range:

Collector ID: C5762

Collector Name: Tran Gia Lap
List Of MCPs:

EDIT
OK

Task ID:
Range:

Collector ID: C2278

Collector Name: Tran Tuong Linh
List Of MCPs:

EDIT
OK

b) Task 2:



Assign Task

ASSIGN TO MCPs

ASSIGN ROUTE

CHECKING & ASSIGNING VEHICLES

Task

Task ID:	T2210	Range:	10/1 - 18/2
Collector ID:	C2278	Collector Name:	Tran Tuong Linh
List Of MCPs:	2, 15, 19, 10, 6	<div>VIEW ROUTE</div>	
Task ID:	T3464	Range:	10/1 - 28/2
Collector ID:	C0762	Collector Name:	Nguyen Minh Vy
List Of MCPs:	16, 8, 22, 11, 2	<div>VIEW ROUTE</div>	
Task ID:	T4034	Range:	10/1 - 28/2
Collector ID:	C8401	Collector Name:	Nguyen Nam Phi
List Of MCPs:	24, 14, 7, 18, 4, 3	<div>VIEW ROUTE</div>	
Task ID:	T4319	Range:	
Collector ID:	C2278	Collector Name:	Tran Tuong Linh
List Of MCPs:		<div>VIEW ROUTE</div>	

c) Task 3:

### Assign Task

ASSIGN TO MCPs

ASSIGN ROUTE

CHECKING & ASSIGNING VEHICLES

#### Task

Task ID:	T2210	Range:	10/1 - 18/2
Collector ID:	C2278	Collector Name:	Tran Tuong Linh
List Of MCPs:	2, 15, 19, 10, 6		
VIEW ROUTE			
Task ID:	T3464	Range:	10/1 - 28/2
Collector ID:	C0762	Collector Name:	Nguyen Minh Vy
List Of MCPs:	16, 8, 22, 11, 2		
VIEW ROUTE			
Task ID:	T4034	Range:	10/1 - 28/2
Collector ID:	C8401	Collector Name:	Nguyen Nam Phi
List Of MCPs:	24, 14, 7, 18, 4, 3		
VIEW ROUTE			
Task ID:	T4319	Range:	
Collector ID:	C2278	Collector Name:	Tran Tuong Linh
List Of MCPs:			
VIEW ROUTE			

The map have not displayed the correct route for each task yet.

#### d) Summary

All participants finish their testing sessions in less than 5 minutes. All the requirements are satisfied except for task 2 and task 3. New changes had been made correctly according to conductors' requirements. The uncompleted tasks will be updated soon from us.

## 8. Feedback from participants

#### a) Task 1:

Generally, all participants have no difficulties during the test. They can easily get familiar with the UI/UX without hesitation or disability of finding required sections. The necessary information is positioned and organized clearly. The only problem is occurred when Hoang tried to find the ID of a new collector.

b) Task 2:

The “Checking & Assigning vehicles” function is still being developed. So Nghia can not run this function correctly. Nghia hopes that the development team will soon finish this feature because it is one of the most important features of this project.

c) Task 3:

As can be seen that the “View Route” function have not done yet, but it is still being researched by our group. Hence, Phong cannot run this case completely. Therefore, as same as Nghia, Phong expects that our group will complete these cases well in the near future.