



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

FACULTY OF COMPUTING
UTM Johor Bahru

Project Part #2: Establishing Requirements (10%)

Subject : Human-Computer Interaction (SECV2113)
Session : 2024/2025 Semester 2
Title : Project Part #2: Establishing Requirements
Duration : 7 Days
Submission : This is a **TEAMWORK**. The team must upload the blog accordingly, by the 18th of May 2025

Instruction:

From the class lectures, discussions, activities and assignments performed in the past weeks, as a group, you need to come up with a proposal you wish to pursue for the HCI project. In this semester-long project, each group will have to design a particular interactive system/application/product (either for computer desktop/laptop or mobile/standalone or other new emerging technologies) that interests them. The project may aim to replace or update an established system, or it may aim to develop a totally innovative product with no obvious precedent. The project phases will reflect the stages of interaction design process and submitted as project deliverables throughout the semester.

Process 1: Identifying needs and establishing requirements

Continuing from Submission project part 1 (project proposal), each group will now start to materialise their proposed solution by designing the interaction of the system/application/product. Designing interaction firstly requires an understanding of the users and their capabilities, their current tasks and goals, the conditions under which the product/application will be used, and constraints on the product/application's performance. Each group should attempt to achieve this understanding through the process of User and Task Analysis described below:

(a) User Analysis

- Identify the characteristics of your **three (3)** target user groups. Create one persona from each user group (total of 3 personas).
- Determine **3 tasks** for your proposed solution (with at least **2 of them as main functional tasks**). Think of the context behind why your persona would need to do the 3 tasks you identified for your system, and their expectations when doing it. Create a scenario for each persona when illustrating this.

(b) Task Analysis and User Observation (using Think Aloud technique)

- The purpose is to find and analyze what type of tasks your system / application / product should offer.
- Find an **existing** system/application/product that provides similar solution to what you are proposing e.g., if you are proposing an online food delivery system, a similar solution could be foodpanda app.
- Identify **3 tasks** (with at least **2 of them as main functional tasks** related to your domain) that a user can do with the system, for example 1) order food, 2) track delivery and 3) search for store.
- Find **three (3)** REAL users who represents your target user that you have identified in proposal (e.g., a research student, a doctor, a housewife). If you can't find an actual representative, find a potential user that is most similar to your user target group.
- Ask the user representing each of your target group to use the system to complete each of the tasks, while thinking aloud (**One** of the data gathering techniques that you carry out. Explain beforehand to the user what think aloud is). Give clear instruction to user for the task for example "Use foodpanda app to order the cheapest nasi lemak".
- **Record** and **observe** each time a user is doing the task in order to understand the task analysis. You should have nine (9) videos (3 user x 3 tasks). Make sure that it can also record the voice of the user thinking aloud.

Report - Report should include the following:

For User Analysis:

- **Users' Personas.** Description of each persona created. **Hint:** Create their personalities in line with how your system/application can benefit them. Use the 'empathy map' to assist you. What would be their motivation, skills, goal, pains and gains?
- **Scenarios.** Description of **task scenario** for each of the tasks you have identified. The analysis of the HTA should help you define the **design needs/design requirements** for your proposed system, and further give ideas on what tasks the user can do with your system (i.e., what function your system provides). **Hint:** Think of what your persona might expect/ his or her goal (This is based on their own characteristics/personality) when doing the task. See example of "Brad" in the slides.

For Task Analysis and User Observation:

- **Hierarchical Task Analysis.** Based on the user observation videos, analyze the 3 tasks you have identified. Create the HTA for each task based on each video (So you should produce 9 HTAs). At least one task should have more subtasks. Identify plans as needed. See example of "Borrow a book from library" from the teaching slides. You can sketch the diagram by hand (But you will need to take a

- picture/scan and upload) or use appropriate drawing software. Make sure that the HTA is constructed following the correct format. You can use textual HTA to describe Task A, and graphical for Task B, etc.
- **Discussion.** What information/issues did you obtain from the HTAs you derived **AND** from the user's thought process (Thinking aloud)? Is there any difference in the way the three different users accomplish the same task? By comparing the HTA's for each user on the same task, what can you conclude? Is there any process that can be made simpler or more effective?
 - For your **proposed solution**, what lessons **(Design requirements)** from the HTA should you consider i.e., which bits of the task would you keep, and which would you do away with or redesign? What insight have you learned from the user's thought process (the thinking aloud)?
 - See an example deriving design requirements from HTA from teaching slides (i.e., example on the filing system and cataloguing system). DISCUSS YOUR FINDINGS.

Reference Slides – Refer on HTA, User & Scenarios in Note – 05a Requirements and Data Gathering and Note 05b- Persona and Tasks

FORMAT REPORT SUBMISSION:

Submission: User Analysis

- 1. Title: Gathering Requirements - User Analysis**
- 2. Proposed Tasks**
{State the 3 tasks of your proposed system}
- 3. Persona**
{A two-paragraph description of Persona 1 from User Group 1. Include his/her picture.}
{A two-paragraph description of Persona 2 from User Group 2. Include his/her picture.}
{A two-paragraph description of Persona 3 from User Group 3. Include his/her picture.}
- 4. Scenario**
{Name of Task 1 e.g., Buy Coffee}
{A two-paragraph narration of Task Scenario 1 for Persona 1.}

{Name of Task 2}
{A two-paragraph narration of Task Scenario 2 for Persona 2.}

{Name of Task 3}
{A two-paragraph narration of Task Scenario 3 for Persona 3.}

Submission: Task Analysis

1. Title: Gathering Requirements - Task Analysis

2. Introduction

{Describe briefly the system/application/product you're testing. e.g., foodpanda app}

{State the 3 tasks from the existing system/application/product that you chose for observation}

3. Derivation of HTA

a) HTA for Task 1 - {Name of Task 1 e.g., Order Food}

{Type of User 1}

{Link/Embedded Video on User 1 doing Task 1 (e.g., research student testing tasks 1)}

{HTA for User 1 doing Task 1 in textual presentation} and

{HTA for User 1 doing Task 1 in diagram presentation}

{Type of User 2}

{Link/Embedded Video on User 2 doing Task 1(e.g., doctor testing task 1)}

{HTA for User 2 doing Task 1 in textual presentation} and

{HTA for User 2 doing Task 1 in diagram presentation}

{Type of User 3}

{Link/Embedded Video on User 3 doing Task 1(e.g., Housewife testing tasks 1)}

{HTA for User 3 doing Task 1 in textual presentation} and

{HTA for User 3 doing Task 1 in diagram presentation}

b) Findings from the HTAs for Task 1

{Discuss elaborately on your findings}

c) Repeat step a and step b for Task 2 and Task 3

4. Design requirements

{A description of requirements for your proposed solution}

Scoring rubric:

Item	Absent (0)	Minimal (1)	Moderate (2)	Good (3)	Excellent (4)	Weightage	Score
Persona	No persona identified	Provided only 1 to 2 personas, but are not clearly distinguished Each persona	Provided 3 personas, but are not clearly distinguished Each persona partly has,	Provided 3 personas, but are not clearly distinguished Each persona has, either or,	Provided 3 distinguished personas Each persona has its: profile, motivation,	1.5	/6

		has or partly has either or, its: profile, motivation, goals, pains, gains	either or, its: profile, motivation, goals, pains, gains	its: profile, motivation, goals, pains, gains	goals, pains, gains		
Scenario	No scenario provided	Identified 1 scenarios, but lack of details. The scenario may have only 1 out of 3: persona + task + situation	Identified 2 scenarios, but lack of details. Each scenario may have only 1 out of 3: persona + task + situation	Identified 3 scenarios, but lack of details. Each scenario may have only 2 out of 3: persona + task + situation	Clearly identified 3 scenarios. Each scenario has: persona + task + situation	1.5	/6
HTA	No solution	*HTAs describing the 3 tasks – which gathered from the recorded videos *Less than 9 HTAs with poor technical drawing	*HTAs describing the 3 tasks – which gathered from the recorded videos * Less than 9 HTAs with mostly correct technical drawing	HTAs distinguishing the 3 tasks – which gathered from the recorded videos *9 HTAs with mostly correct technical drawing	HTAs distinguishing the 3 tasks – which gathered from the recorded videos *9 HTAs with correct technical drawing	2	/8
Discussion	No identified target users	A discussion is present, but with no substantial points	A discussion is present, discussing ONE out of THREE below: *Information on HTAs & thinking aloud **any differences of 3 personas on the same task ***design requirements – what to keep, what's new	A discussion is present, discussing TWO out of THREE below: *Information on HTAs & thinking aloud **any differences of 3 personas on the same task ***design requirements – what to keep, what's new	Well thought discussion: *Information on HTAs & thinking aloud **any differences of 3 personas on the same task ***design requirements – what to keep, what's new	2	/8
Video observation of tasks	No video provided	less than 6 videos present	More than 6 but less than 9 videos present	9 videos present but not showing clearly how the user does the task	9 videos present with each video showing clearly how the user does the task	1	/4