MODULE 01: SOFTWARE REQUIREMENTS

UNIVERSITY OF ALBERTA : CLIENT NEEDS AND SOFTWARE REQUIREMENTS

THREE "RIGHTS" OF SOFTWARE

- Understand Right Product

- Develop Right (Done it Right)

- Manage Right

UNDERSTAND RIGHT PRODUCT

- The *right product* means meeting the *needs* of your clients and end-users and not just their *wants.*

- This involves understanding the problem they need to solve, and the tasks they need to accomplish with the software.

- To achieve *done right* and *managed right*, software development must start with a quality set of software requirements, which are later planned, designed, implemented, and tested.

- Understanding WHY of your client ?

- In this part of the course, you will learn how to elicit needs from your clients and end-users. You will also learn how to express these needs as a quality set of requirements to initiate software development and planning activities.

WHAT IS REQUIREMENT

- A requirement is most easily understood as *a specific description of your client's needs*, which can be used to help create a real-world product.

IEEE: FORMAL DEFINITION

- A condition or capability that must be met or possessed by a system or system component to satisfy a contract, standard, specification, or other formally imposed documents.

ACTIVITIES OF REQUIREMENT SPECIFICATION PHASE

ACTIVITIES OF REQUIREMENTS

1.   Eliciting requirements

2.   Expressing requirements

3.   Prioritizing requirements

4.   Analyzing requirements

5.   Managing requirements

ELICITING REQUIREMENTS

1. Eliciting requirements
2. Expressing requirements
3. Prioritizing requirements
4. Analyzing requirements
5. Managing requirements

- The activity of **eliciting requirements** is an interactive and investigative process, which occurs when meeting with the client and users.

WHAT CLIENT KNOWS

- Clients often have ideas about what features they would like in a product and what these features should look like.

DO NOT EXPECT FROM CLIENT

- Many clients, however, have limited knowledge of how software is built and vague ideas regarding what makes a project successful

YOUR JOB

- It can be difficult then for clients to understand what they truly require in a product. It is the role of the software product manager to help the client figure out what they "want" and what they "need."

Wants:
"Are desired functions that they'd like to see in the product."

Needs:
"Are the core functions required in order to address the specific problem, that the product is intended to solve."

- The best way to discover and develop "needs" and "wants" with your client is through eliciting requirements, where you engage in discussion about the product with your client.

IMPORTANT

- Note that eliciting requirements as "needs" and "wants" does not necessarily mean that all the client's features and ideas that fall in the "want" category are not doable or should be dismissed.

- That may be excellent but at the moment not feasible.

BRIDGE THE GAP

■ Understand Why of the client and
   tell them WHAT to do

- Do not mix up Requirement Gathering with Requirement Elicitation.

- Requirements gathering is the more passive approach of simply asking the client what they would like done, and it often puts the development team in a reactive process. (that is the mistake that software developers mostly do)

- Eliciting requirements, however, engages in in-depth discussion and collaboration from the start of product development, so both the client and the development team work together to build a successful product.

- That should be done
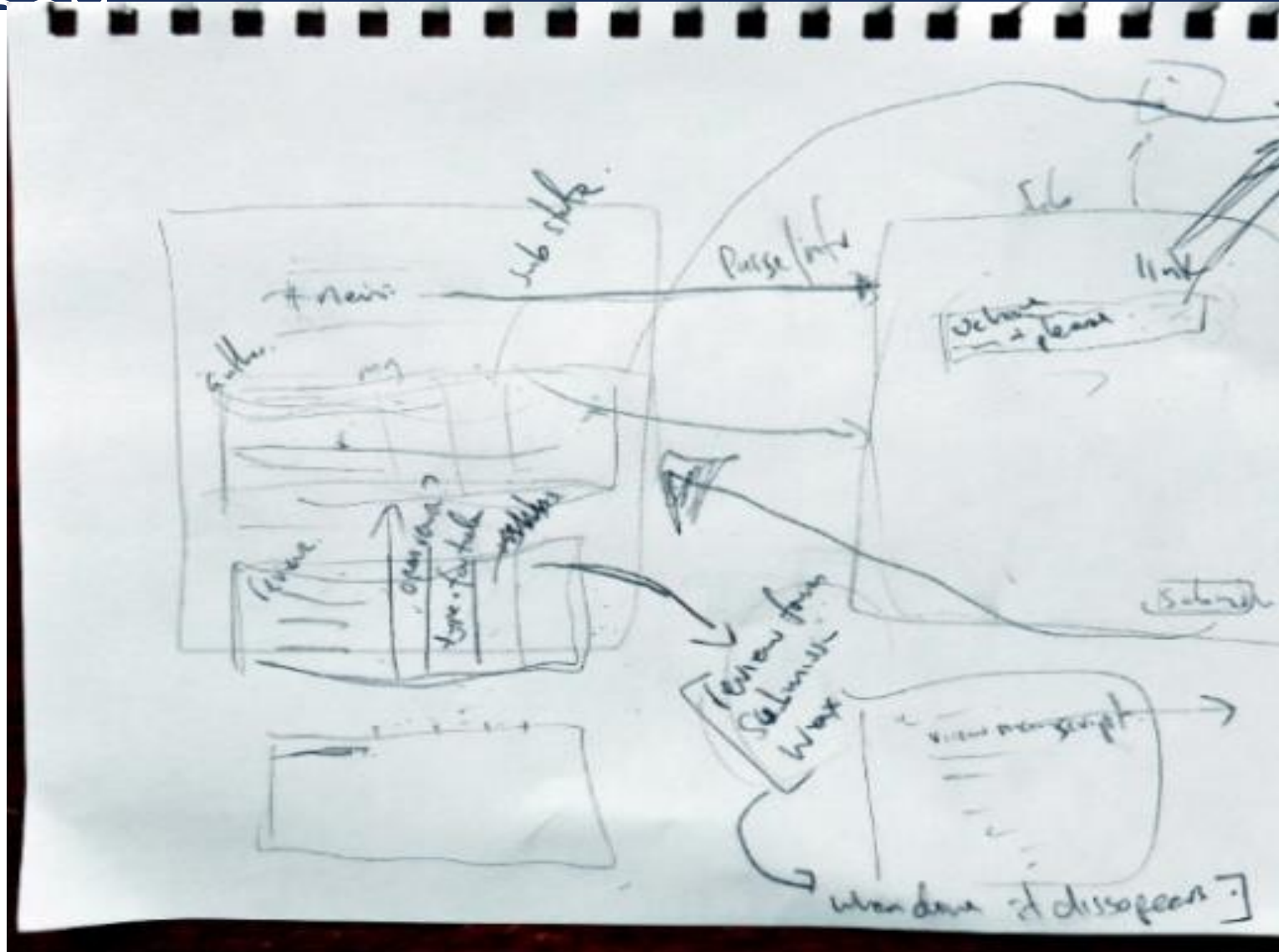
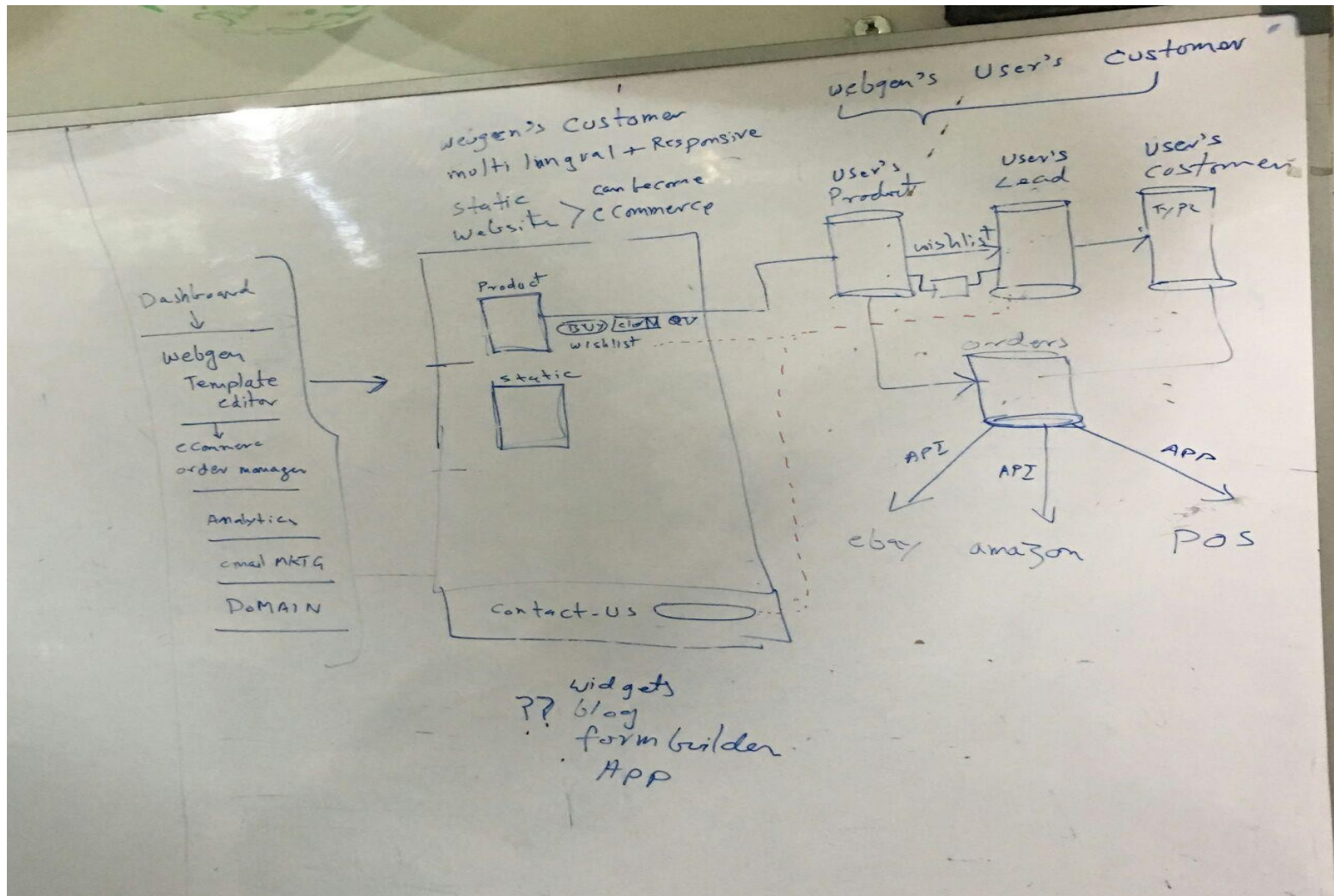# EXPRESSING REQUIREMENTS

ACTIVITIES OF REQUIREMENTS

1. Eliciting requirements

2. Expressing requirements

3. Prioritizing requirements

4. Analyzing requirements

5. Managing requirements

- Expressing the Requirement is process to inform about the elicited requirements to your developer and also verify from the client.

- Different way to express, we shall see shortly.
  - Writing Requirements in meaningful way
  - Writing Use Cases
  - Wire framing
  - Story Boarding.

PRIORITIZING REQUIREMENTS

ACTIVITIES OF REQUIREMENTS

1. Eliciting requirements

2. Expressing requirements

3. Prioritizing requirements

4. Analyzing requirements

5. Managing requirements

PRIORITIZATION IS IMPORTANT

- Once a vision of what needs to be done for the project has been established through both eliciting and expressing requirements, it is important to **prioritize** client needs, especially in Scrum methodology.

QUESTIONS TO HELP ESTABLISH PRIORITIES:

- What requirements must be completed for the project and product to be successful?
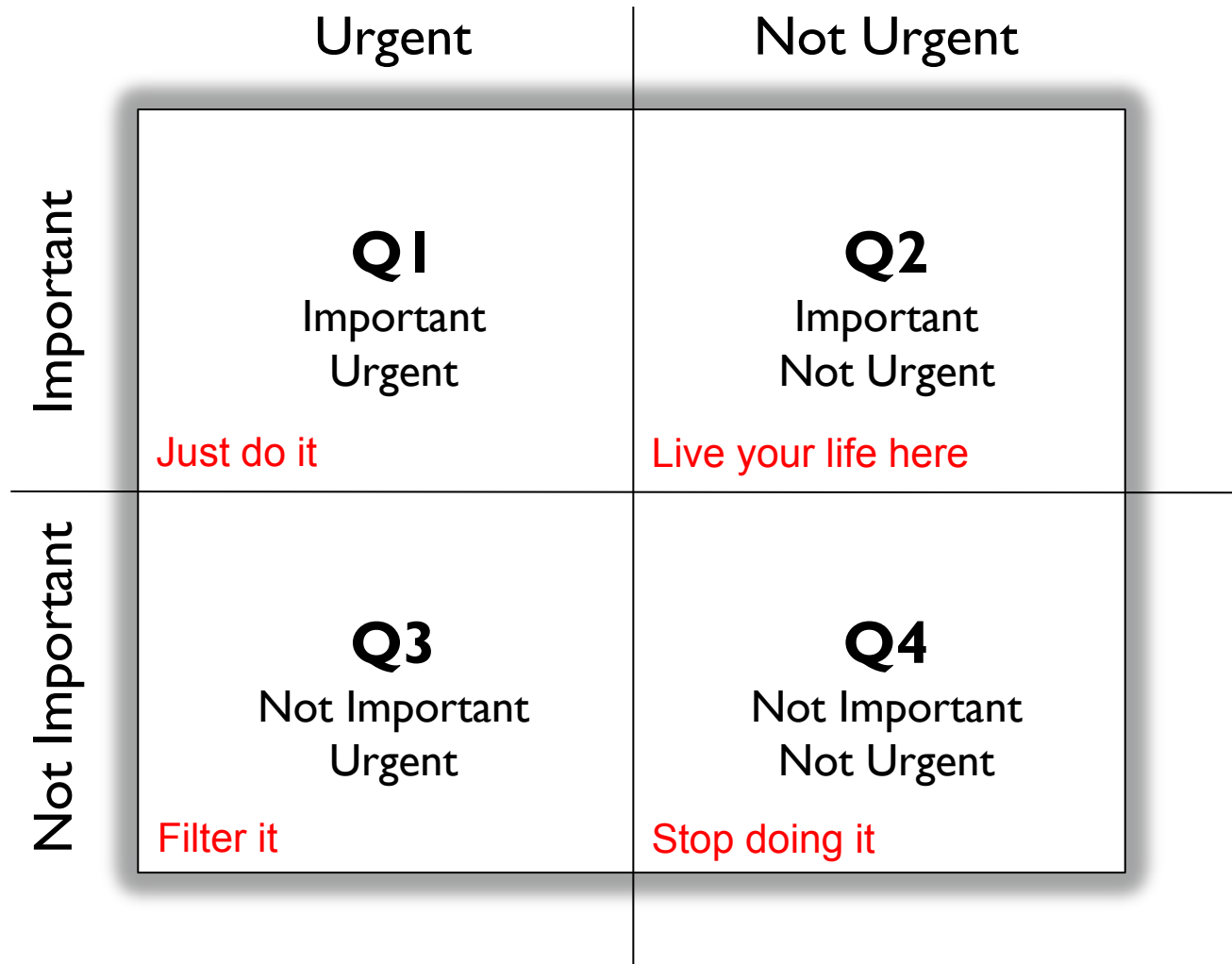
QUESTIONS TO HELP ESTABLISH PRIORITIES:

- What could be done to improve the project or product but is not necessary? These priorities are usually only included if both time and resources allow for it.

- What requirements should be done ? In other words, what is important but is not as time-critical or could be satisfied another way or at a later time on the project?

- **MUST BE DONE**: Important and
  Urgent for success.

- **SHOULD BE DONE**: Important but not Urgent for success.

- **COULD BE DONE**: Not Important not Urgent but make the project more attractive.

■Prioritizing is important and critical

 for a successful life.

	Urgent	Not Urgent
Important	**Q1** Important Urgent Just do it	**Q2** Important Not Urgent Live your life here
Not Important	**Q3** Not Important Urgent Filter it	**Q4** Not Important Not Urgent Stop doing it

ANALYZING THE REQUIREMENTS

ACTIVITIES OF REQUIREMENTS

1. Eliciting requirements
2. Expressing requirements
3. Prioritizing requirements
4. Analyzing requirements
5. Managing requirements

■ The process of examining the listed requirements of a project to ensure that they are clear, complete, and consistent is known as **analyzing requirements**.

- Some time we have the requirement those are not consistent with each other. Fulfilling one requirement may disturb other one.

- For example consider following two requirments

CONFLICTING REQUIREMENT

- App should not access the user messages.

- When confirmation message arrives, the app should automatically read pin code and proceed.

- Analyzing requirement helps to resolve any potential conflicting requirement or to identify problems between requirements that might not be easily seen at first glance.

MANAGING REQUIREMENTS

1. Eliciting requirements

2. Expressing requirements

3. Prioritizing requirements

4. Analyzing requirements

5. Managing requirements

- If something changes in one requirement, it will affect other requirements and the development of the product.

- Managing Requirement allows you To identify the impact of a requirement change.

■Managing requirements also means ensuring that the identified requirements are central to the many processes of product creation, including coding, testing, and change logs.