

# Software Engineering

How To Create Software Products Everyone Loves!

## Module 3

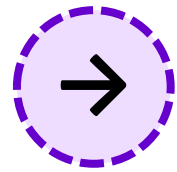
### Introduction to Agile and Scrum

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May. 2023

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# What You Will Learn



Introduction to Agile Development



Introducing Scrum



Start to Build Your Team



Start to Manage Your Software Product

# Before Start: Agility vs Speed

Speed is the ability to move in a straight line as fast as possible, while agility is the ability to change direction quickly while maintaining speed and precision



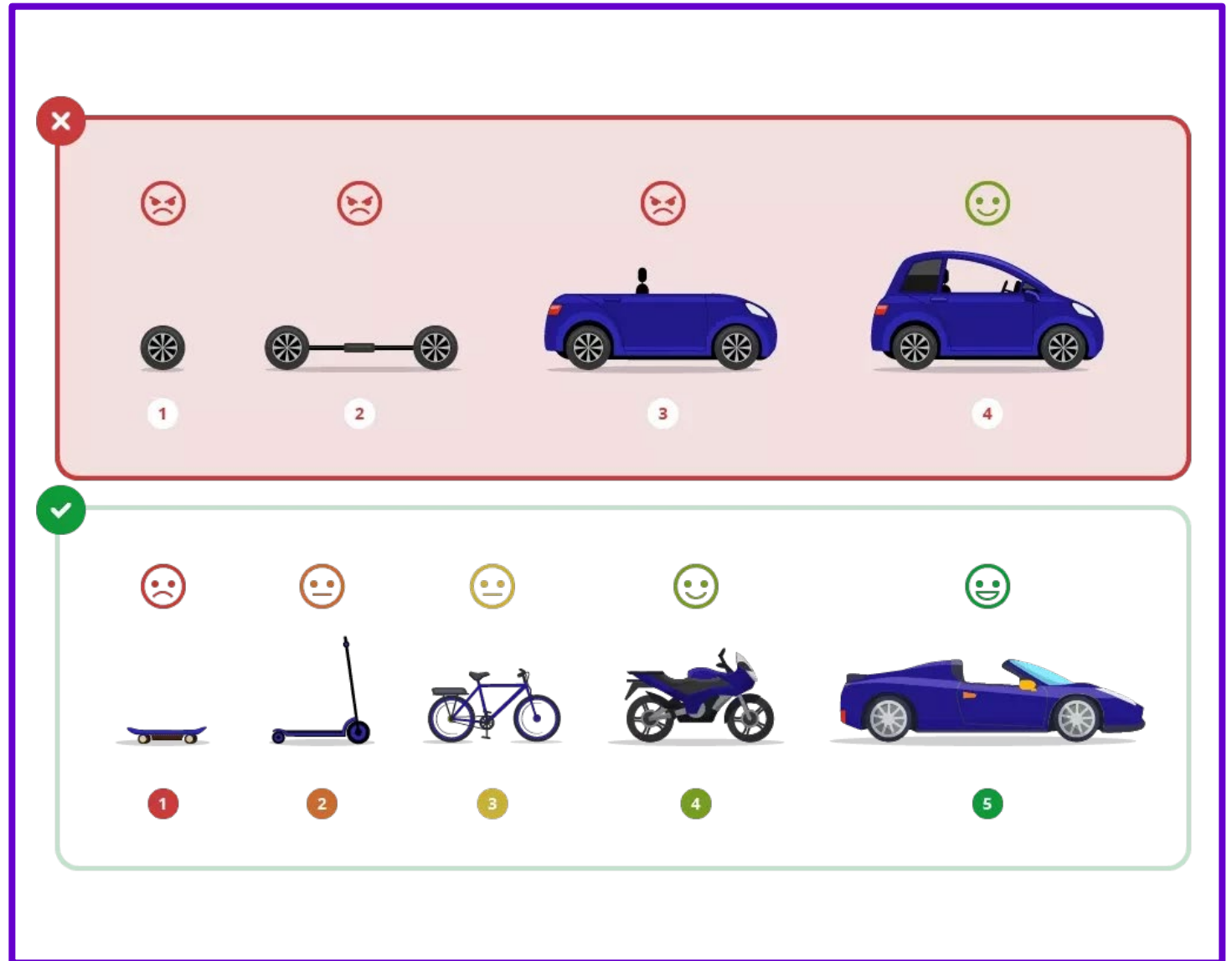
Before Start: Lets Review Some Basics!

In terms of project management perspective, what are the main differences between a Computer Program and a Software Product?

## A Million Dollar Question

How should we develop for **Rapidly Changing Markets?**

How could we deliver **high-quality, Functional** software products in a **short amount of time?**



# So, Why do we need to be Agile?

Rapidly **changing market** needs

You need to be flexible and **align yourself with frequent customer requirements changes.**

You have to deliver **high-quality and functional products fast (strictly time-bounded).**

# An Other Million Dollar Question!

**How** should (could) be Agile in Software Development?

(One of) the **answers** is:

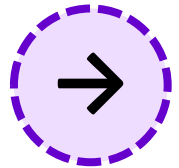
**Scrum Framework**

Scrum is a framework that defines the principles (guidelines) of agile product development

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# What Is Scrum?

Scrum is one of several frameworks for managing product development organizations, lumped under the broad category of agile software development

Agile approaches are designed to support iterative, flexible, and sustainable methods for running a product engineering organization.

# When should we use Scrum?

Scrum is particularly well suited to the types of organizations that develop products such as **websites** and **mobile software**

The focus on developing **cohesive, modular, measurable features** that can be **estimated relatively, tracked easily**, and that may **need to adapt quickly to changing market conditions** makes scrum particularly appropriate for these types of projects.

# A software production line!

## (Software Development Life Cycle-SDLC)

1.  
Plan



Product  
owner

Product  
manager



2.  
Analysis



Project  
manager

Software  
architecture



3.  
Design



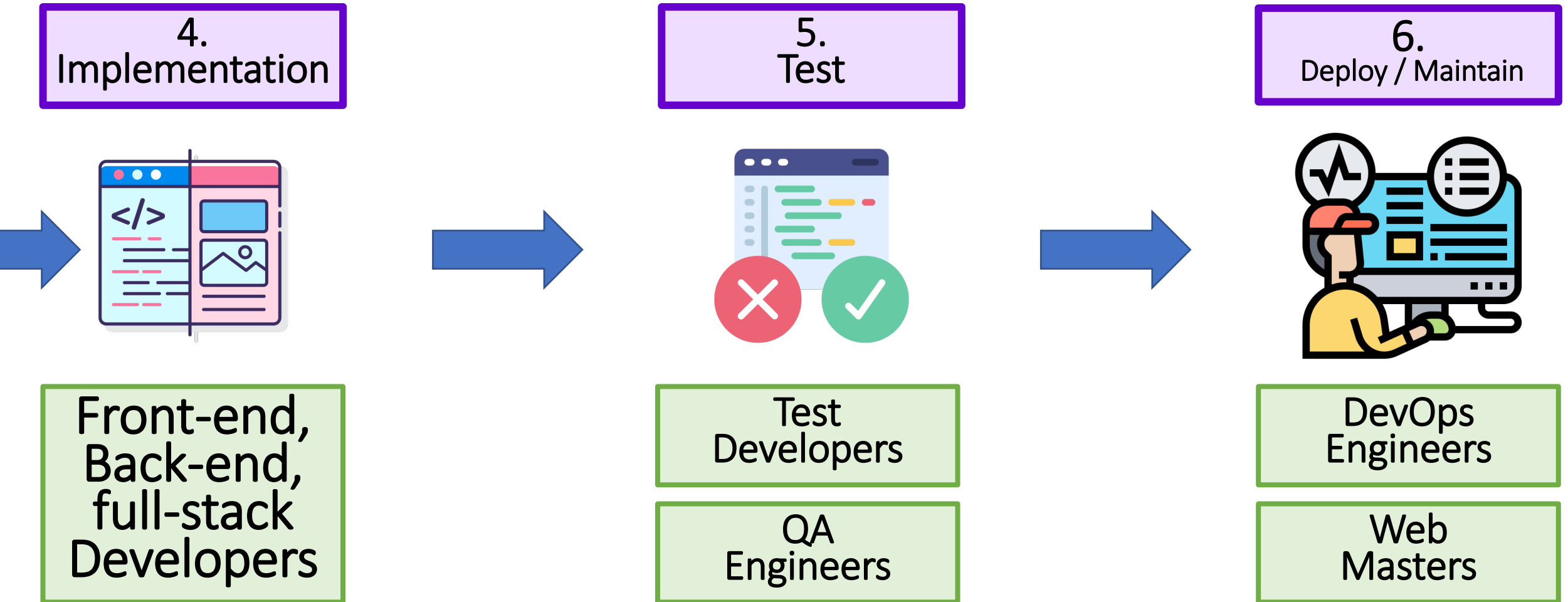
UI/UX  
Designer

Technical  
Designer

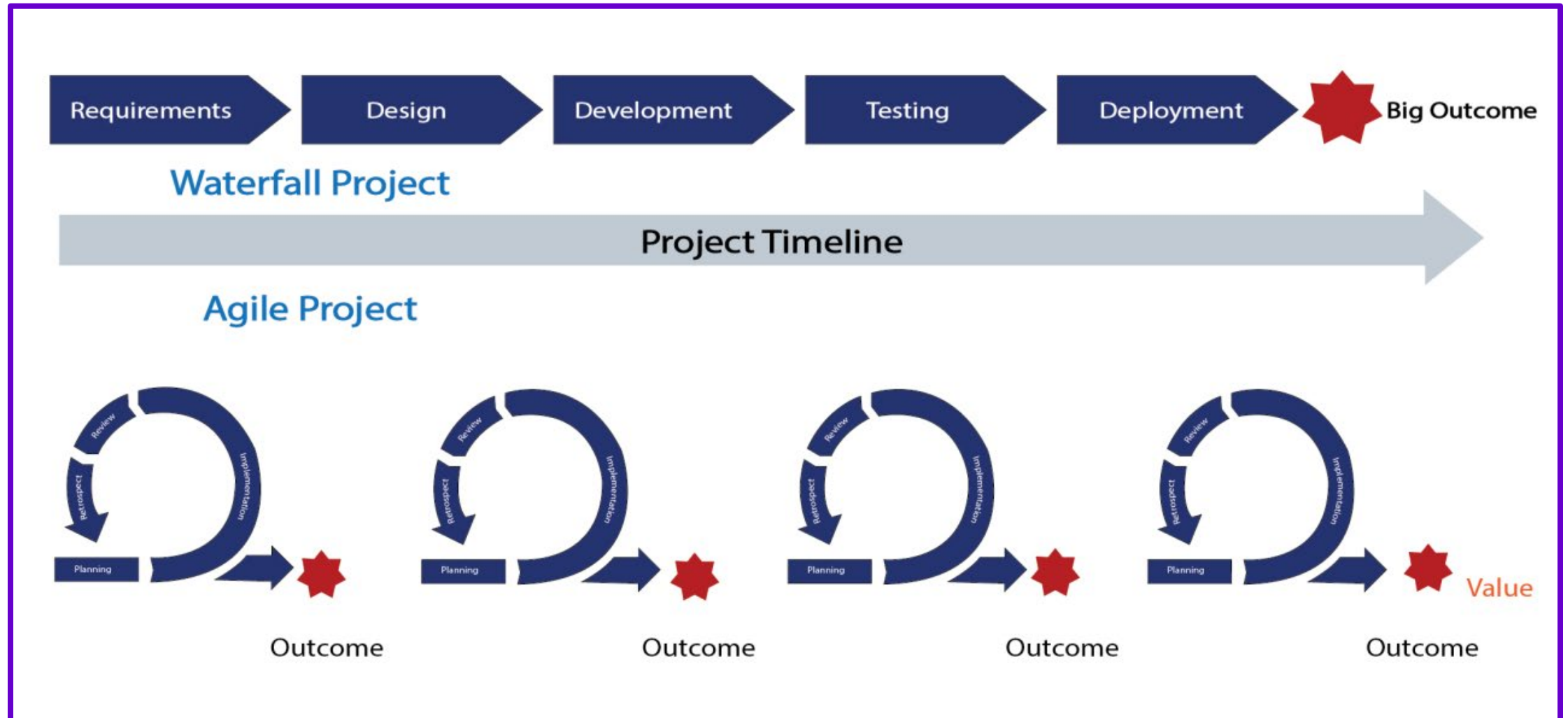


# A software production line!

## (Software Development Life Cycle-SDLC)



# Comparing Scrum and Waterfall



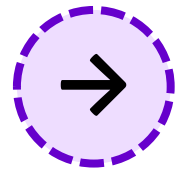
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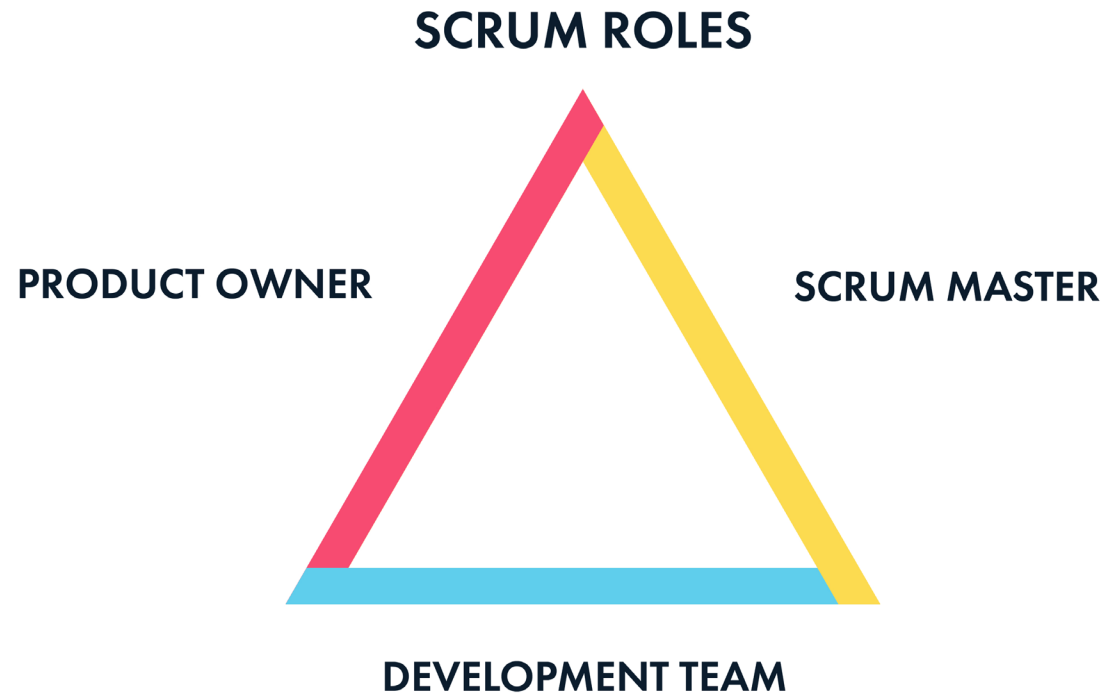
Start to Build Your Team



Start to Manage Your Software Product

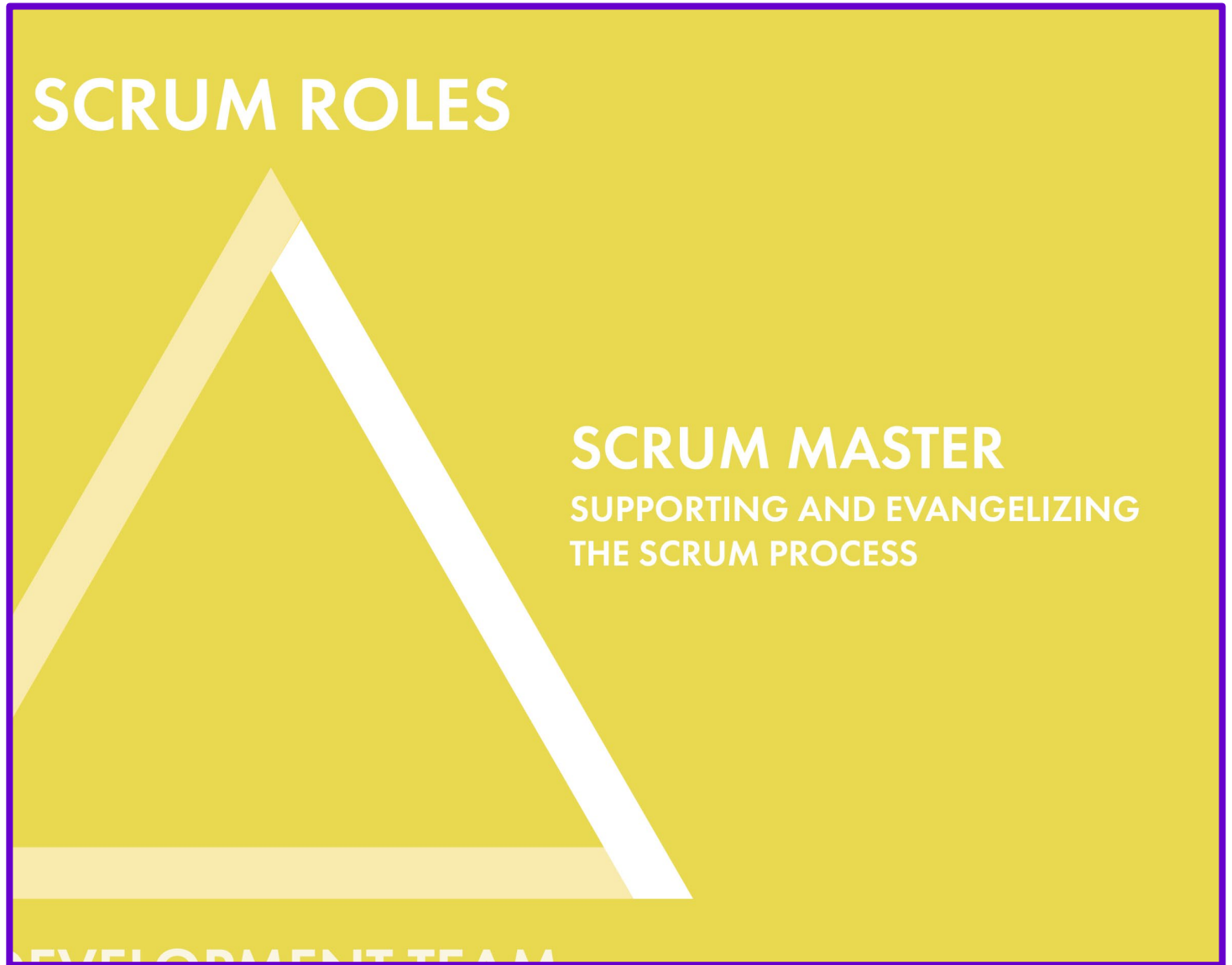
## Build Your Team: Establishing Who Does What

There is **no hierarchy** in a Scrum team. The Scrum roles are all equal as far as the process is concerned.



## Build Your Team: Scrum Master

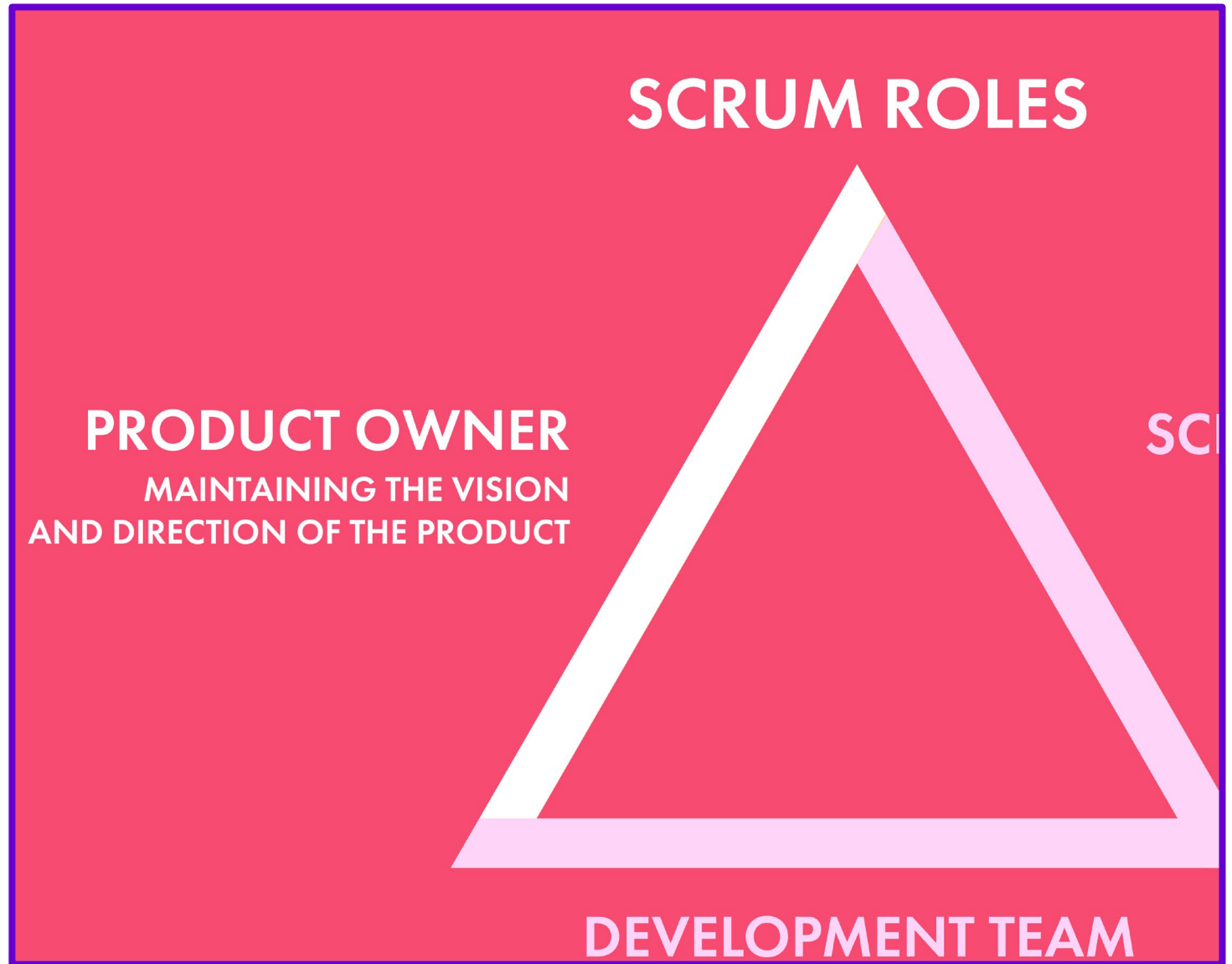
The scrum master has no authority other than the leadership demonstrated in the role of **servant leader** for the scrum process





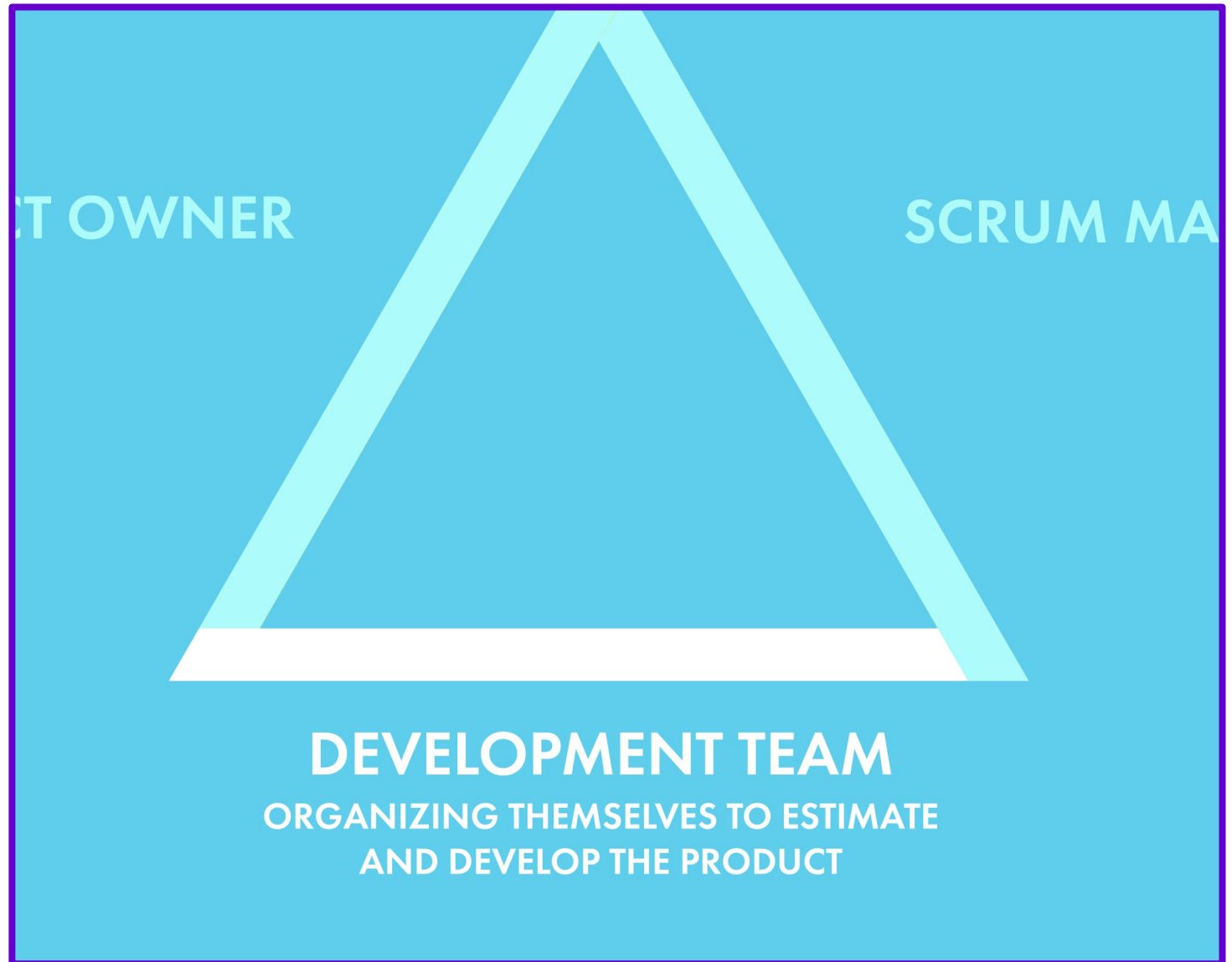
## Build Your Team: Product Owner

The product owner has no authority other than **maintaining the vision of the product** and shepherding it through the scrum process



## Build Your Team: **Dev Team**

And the team has  
no authority other  
than the power to  
estimate, accept,  
reject, commit to,  
work on, and  
complete stories



# SCRUM ROLES

**PRODUCT OWNER**  
MAINTAINING THE VISION  
AND DIRECTION OF THE PRODUCT

**SCRUM MASTER**  
SUPPORTING AND EVANGELIZING  
THE SCRUM PROCESS

**DEVELOPMENT TEAM**  
ORGANIZING THEMSELVES TO ESTIMATE  
AND DEVELOP THE PRODUCT

# What You Will Learn



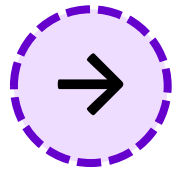
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# Define Requirements

**Stories** are how the product owner communicates to the development team **what needs to be developed**

User Story

As a \_\_\_\_\_,

I want to \_\_\_\_\_,

so that I can \_\_\_\_\_.

# Stories Examples

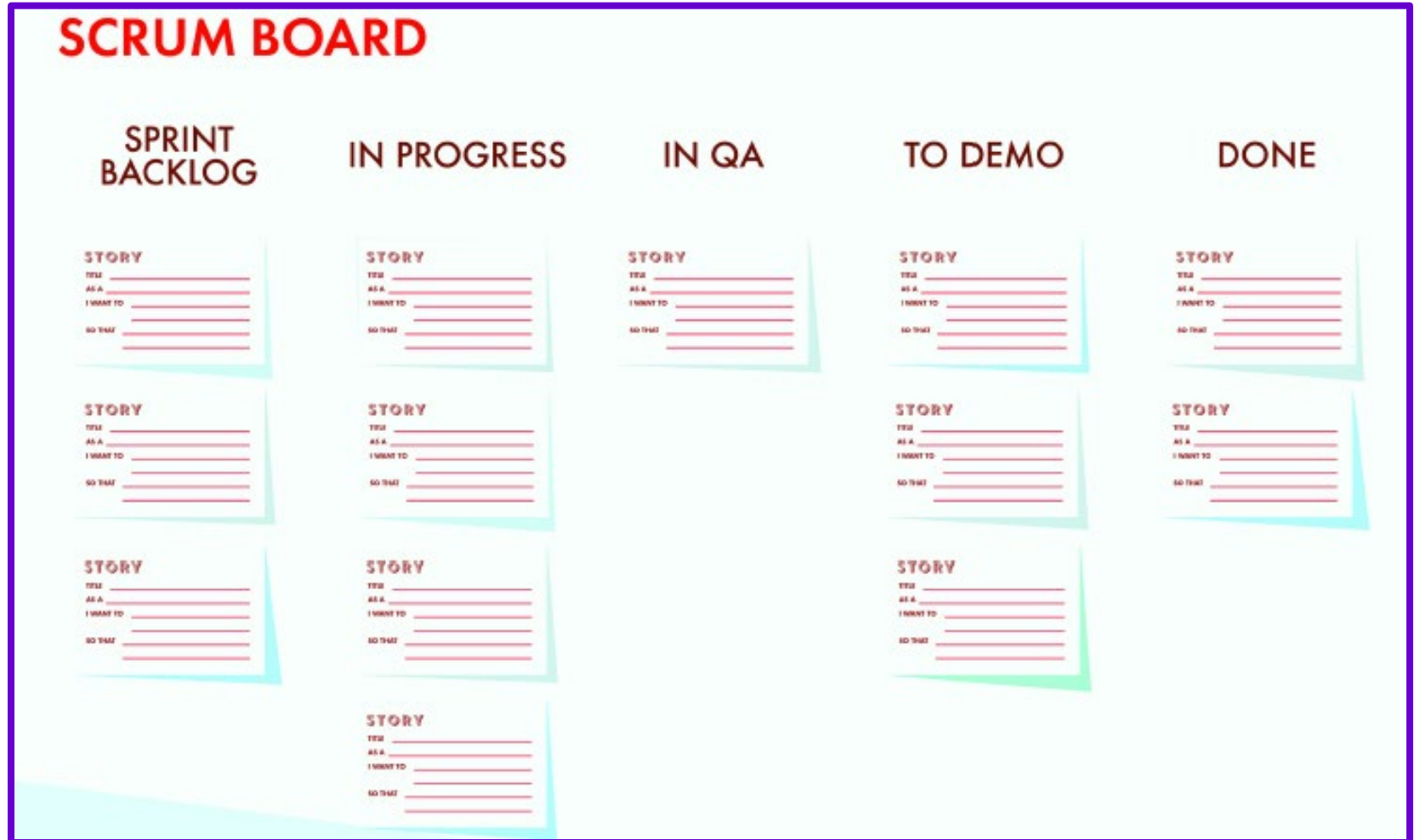
“As a customer, I want to be able to see a bill, with all of the items in that order, so I can see how much my order will cost.”

“As a customer, I want to be able to select a “pay now” option when I view my bill, so I can pay the bill immediately.”

“As a customer, I want to be able to enter my payment details for VISA and MasterCard credit cards, so I can pay using a convenient method.”

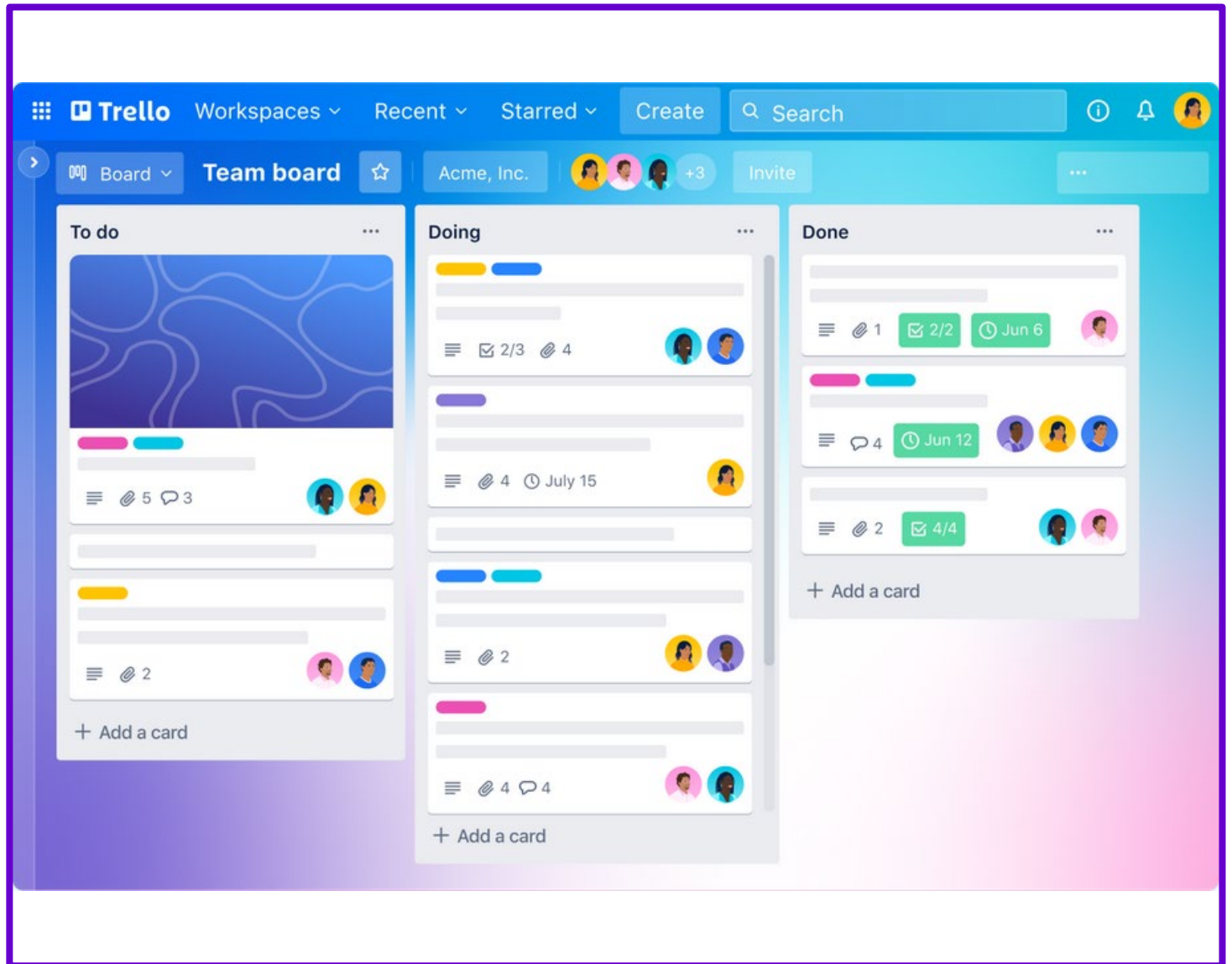
# Manage Your Stories

A scrum board tracks the progress of all the stories being worked on in the current sprint until it meets the team's definition of done.



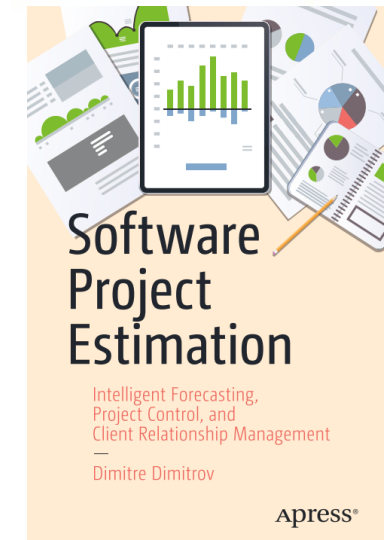
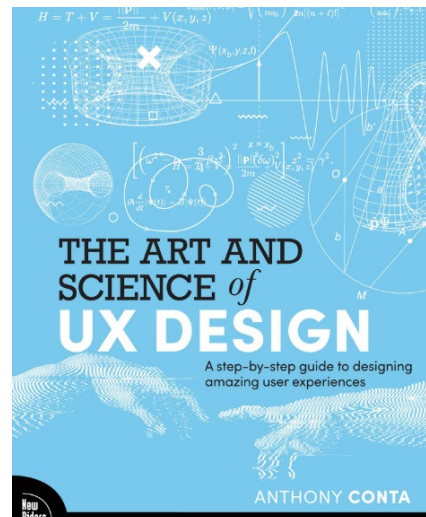
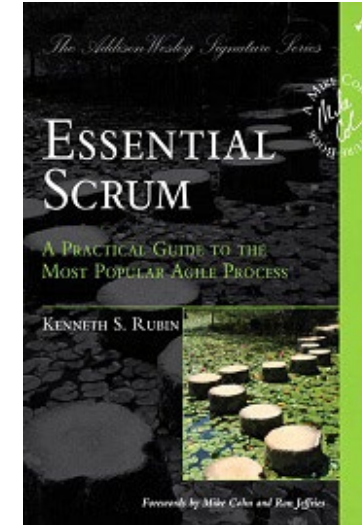
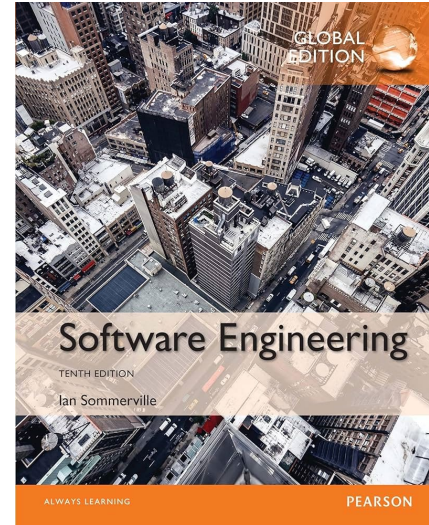
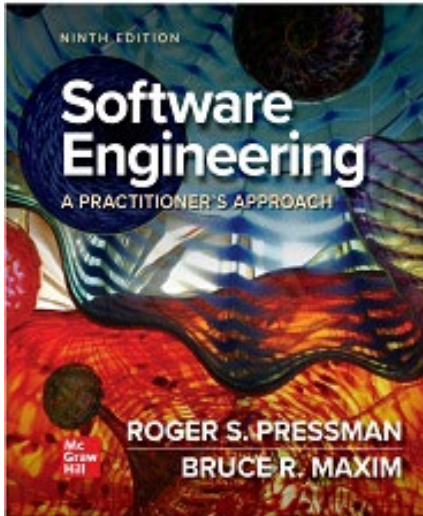
How to manage our  
Tasks (Stories)?

Use a task  
management tool  
like Trello  
or  
just a wall and  
sticky notes!





# Course References



# References

- [1] Green, M. D. (2016). Scrum: Novice to Ninja: Methods for Agile, Powerful Development, SitePoint.
- [2] Ockerman, S. and S. Reindl (2019). Mastering professional scrum: A practitioner's guide to overcoming challenges and maximizing the benefits of agility, Addison-Wesley Professional.
- [3] Martin, R. C. (2019). Clean Agile, Pearson Education.
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- [5] سامانی‌پور، علی. (۲۰۱۸). آموزش اسکرام برای مدیریت چابک فرایند توسعه اپلیکیشن های وب و موبایل،  
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