



# Agile Methodology

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Bengaluru



## INTRODUCTION

### *Agile Methodology*



### Client and management myths

- If you work with a non-Agile aware executive management or client, their expectations will be:
- You will accept change continuously
- You will suddenly become more productive
- You are doing development without any discipline



### Why Agile?

- Software development is to be adopted for new ways of working and technology changes.

Multi-Platform  
Delivery

Collaborative  
development

Cloud  
Delivery

Intelligent/  
Connected Systems

### Impacts on Business and Software Development:

- Heavy demand for rapid product lifecycles
- Increasing interactions with customer
- Exploring adjacent or new markets
- New skills and competencies needed
- Increased security and privacy requirements
- Greater need to align with strategic priorities



### The Agile manifesto – 2001

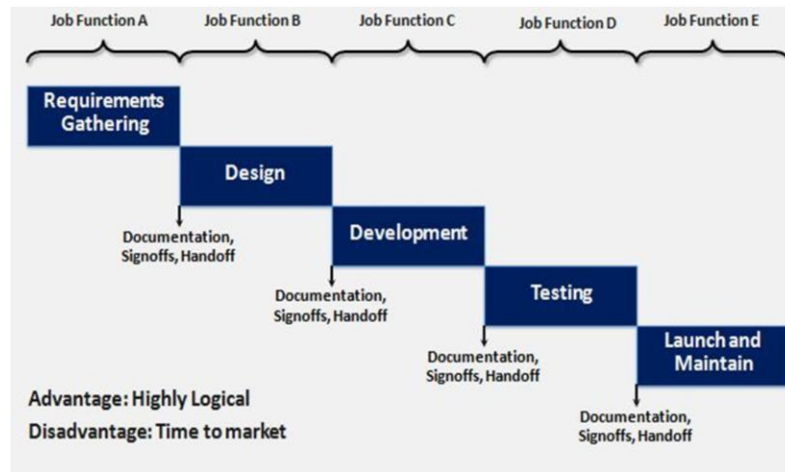
We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:



It means that while there is value in the items on the right, **we value the items on the left more.**



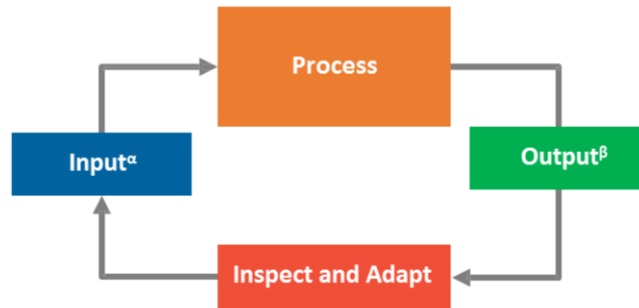
## Waterfall model





### Empirical processes

- The Empirical process is an inspect and adapt process where the product is built incrementally.





## CONCEPT

### *Scrum Basics*





### What is Scrum?

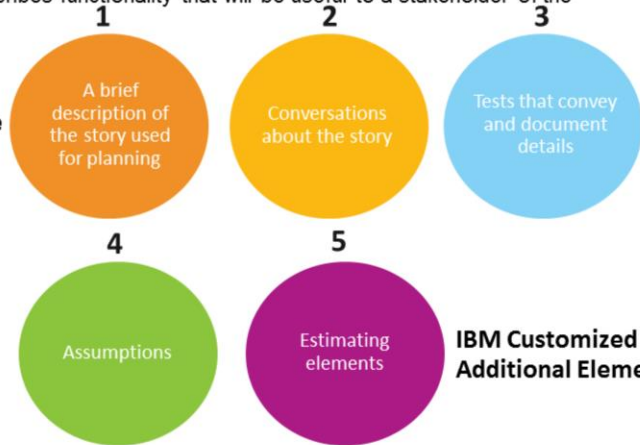
- Scrum refers to a holistic or “rugby” approach— where teams go the distance as a unit, passing the ball back and forth—as opposed to the traditional sequential or “relay race” approach for managing new product development.
- It is not individual effort but the best coordination of the team that will determine success.



### User Stories: Components

- A User Story describes functionality that will be useful to a stakeholder of the system.

**User Stories  
consists of three  
things**



**IBM Customized  
Additional Elements**



### An example of user stories





### What is an Epic?

- As a premium site member, I want to cancel a reservation on the last minute with no cancellation fee so that I am not charged for a travel arrangement I no longer need.

#### EPIC

As an user, I want to cancel a reservation so that I am not charged for a travel arrangement I no longer need.

#### User Story

As a premium site member, I want to cancel a reservation on the last minute with no cancellation fee so that I am not charged for a travel arrangement I no longer need.

As a non-premium member, I want to cancel 24 hours in advance so that I am not charged for a travel arrangement I no longer need.

As a site visitor, I want to receive a confirmation of any cancelled reservation so that I can have proof of cancellations.



## Product Backlog

### To-Do List

ID	Story	Estimation	Priority
7	As an unauthorized user, I want to create a New account	3	1
1	As an unauthorized user, I want to login	1	2
10	As an authorized user, I want to logout	1	3
9	Create script to purge database	1	4
2	As an authorized user, I want to see the list of items so that I can select one	2	5
4	As an authorized user, I want to add a new item so that it appears in the list	5	6
3	As an authorized user, I want to delete the selected item	2	7
5	As an authorized user, I want to edit the selected item	5	8
6	As an authorized user, I want to set a reminder for a selected item so that I am reminded when item is due	8	9
8	As an administrator, I want to see the list of accounts on login	2	10
Total		30	



### Case study : Some possible user stories(1 of 6)





Case study : Some possible user stories(2 of 6)





### Case study : Some possible user stories(3 of 6)







Case study : Some possible user stories(4 of 6)



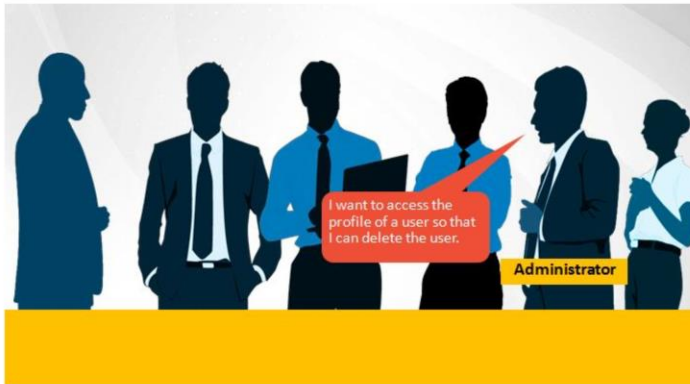


Case study : Some possible user stories(4 of 6)





Case study : Some possible user stories(5 of 6)



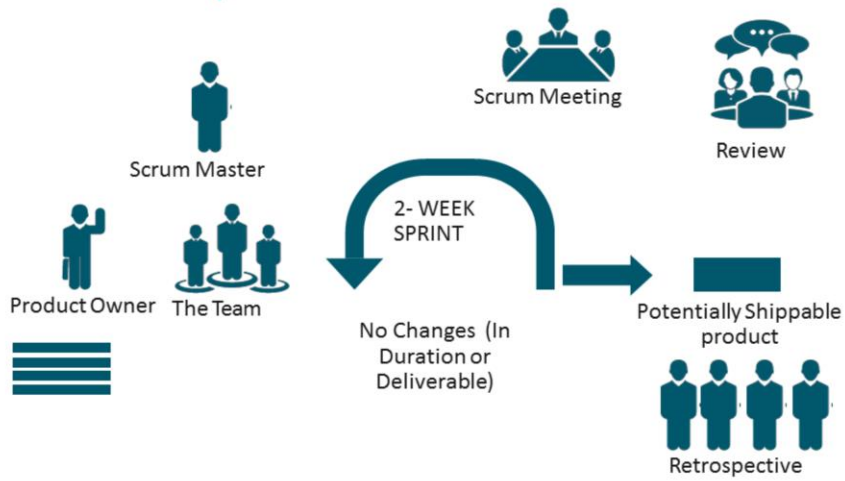


Case study : Some possible user stories(6 of 6)





### Scrum roles and responsibilities





## Scrum roles and responsibilities—product owner





### Scrum roles and responsibilities—the team

#### 7 people + or – 2

- Can be shared with other teams (but it is better when not)
- Can change between Sprints (but better when they don't)
- Can be distributed (but better when collocated)

#### Cross- functional

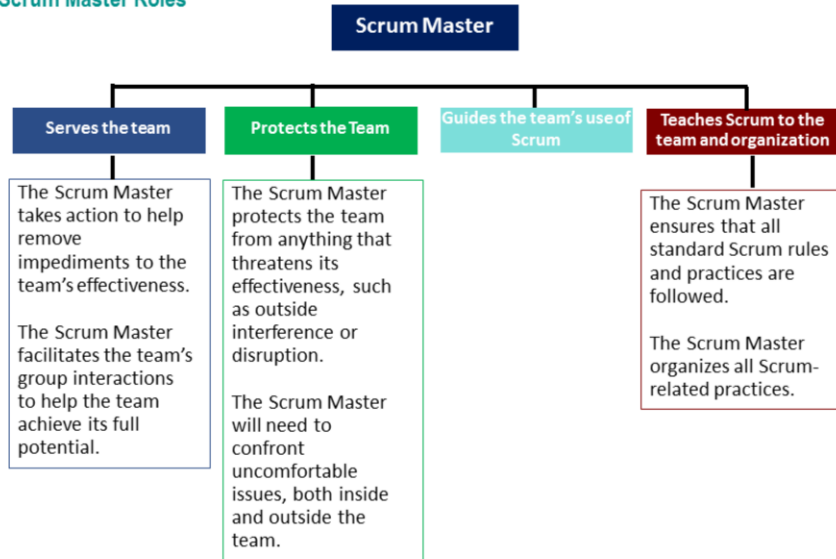
- Possesses all the skills necessary to produce an increment of potentially shippable product
- Team takes on tasks based on skills, not just the official "role".

#### Self-managing

- Team manages itself to achieve the Sprint commitment.



## Scrum Master Roles

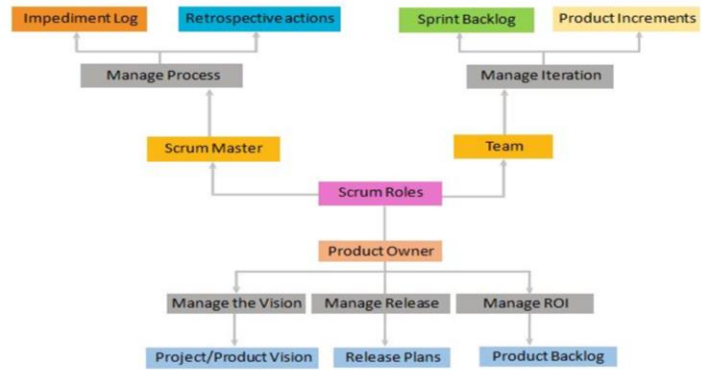


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## Scrum project roles in a nutshell





### Sprint planning

**What is on the Product Owner's "shopping list"?**

Team understands details of what Product Owner has prioritized on Product Backlog.

**How much "money" do we have in our bank account?**

Team decides how much productive time is available during the Sprint.

**How many items on the shopping list can we afford to "buy" with that "money"?**

Team decides how many Product Backlog items can be committed for completion during the Sprint.



## Sprint Backlog

Backlog Item	Task	Owner	Day of Sprint						
			Initial Est.	1	2	3	4	5	6
Enable all users to place book in shopping cart	Design business logic	Sanjay	4						
	Design user interface	Jing	2						
	Implement back-end code	Tracy	2						
	Implement front-end code	Tracy	6						
	Complete documentation	Joe	8						
	Unit testing	Philip	4						
	Regression testing	Philip	2						
Upgrade transaction processing module	Implement back-end code	Tracy	5						
	Complete documentation	Joe	6						
	Unit testing	Philip	3						
	Regression testing	Philip	3						
Total			214						



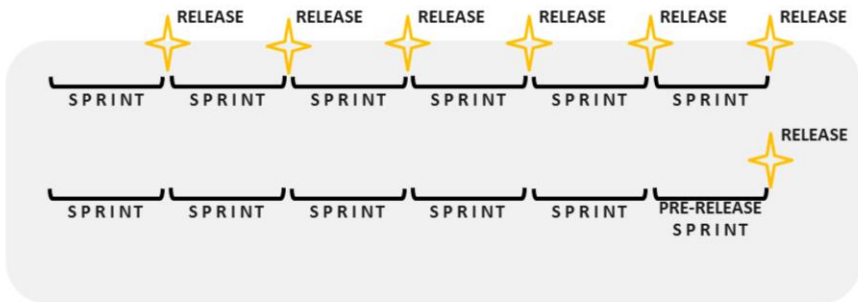
### Sprint Cycle: 2 Weeks

Mon	Tues	Weds	Thurs	Fri
5	6	1 1-Hr Pre-Meeting for next Sprint	2	8 3 Sprint Review & Retrospective 9
6 Sprint Planning Meeting	7	1 8	2 9	3 10 4
13 5	14 6	15 1-Hr Pre-Meeting for next Sprint 2	16 8	17 Sprint Review & Retrospective 4
20 Sprint Planning Meeting	21 1	22 2	23 3	24 4
27 5	28 6	29 1-Hr Pre-Meeting for next Sprint	30 8	31 Sprint Review & Retrospective 9



## Definition of Done

In Scrum, “Done” is defined as “**Potentially Shippable**”.





**CHECK YOUR  
UNDERSTANDING**



1. Which one of these life cycle models does Agile follow?

- ☐ Waterfall Model
- ☐ Iterative and Incremental Model
- ☐ V Model





1. Which of the following prioritized items does the product backlog contain?

- ☐ Epics
- ☐ User Stories
- ☐ Both A & B







1. Which of the below roles is not defined by Scrum?

- ☐ Product Owner
- ☐ Project Manager
- ☐ Developer / Tester
- ☐ Scrum Master





## CONCEPT

### *Scrum Execution*



### Daily Scrum Meeting

Every weekday

Whole team attends

Everyone stands

Lasts 15 minutes or less

Product Owner can attend and report

Update of artifacts after standup-Sprint backlog, Task board, and so on



### Daily Scrum Meeting (continued)

Every Developer / Tester reports the following three things:

What task was I able to accomplish since yesterday?

What task will I try to accomplish for the day?

Any issues blocking my work?

No discussions or conversations until meeting ends



**Conduct Daily Scrum Meeting in the following scenario:**

- There are three developers and two testers working on building a product that will automate the Bank Transactions.
  - One person is working on Creating new accounts.
  - Sub-tasks:
    - Create a Registration/login page.
    - Add options for User to select Creating new account.
    - Add all the mandatory / optional fields as text box or combo boxes.
    - Validate the data entered and the formats and save the data in the database.
- Generate the account number and display. One person is working on Creating Fixed Deposit.
  - Sub-tasks
    - Provide the user list of FD plans and the rates.
- Check if User is already an account holder. If yes, then display a webpage which will get the User account details so that FD account to be linked with S/B account.
  - One person is working on Generating Reports.
  - Sub-tasks:



**Conduct Daily Scrum Meeting in the following scenario:**

- Design a screen/page to provide the Report generating options.
  - Create the tables and views.
  - Design the report layout for different queries (ex: fetch all the details of Customer XYZ like account summary, FD details, Home loan details and so on).
- 2 Testers testing first 2 scenarios.



## Sprint Backlog Updation

Backlog Item	Task	Owner	Initial Est.	Day of Sprint					
				1	2	3	4	5	6
Enable all users to place book in shopping cart	Design business logic	Sanjay	4	1	1				
	Design user interface	Jing	2	1	1				
	Implement back-end code	Tracy	2	1	1				
	Implement front-end code	Tracy	6	1	1				
	Complete documentation	Joe	8	1	1				
	Unit testing	Philip	4	1	1				
	Regression testing	Philip	2	1	1				
Upgrade transaction processing module	Implement back-end code	Tracy	5	1	1				
	Complete documentation	Joe	6	1	1				
	Unit testing	Philip	3	1	1				
	Regression testing	Philip	3	1	1				
Total			214	220	220				



### Kanban Task Board (1 of 4)

A Kanban board is a work and workflow visualization tool that enables you to optimize the flow of your work. Physical Kanban boards, like the one pictured below, typically use sticky notes on a whiteboard to communicate status, progress, and issues.







A Kanban board with three columns: TO DO, IN PROGRESS, and DONE. The TO DO column contains 18 tasks represented by colored squares: 4 dark blue, 4 yellow, 4 red, and 6 green. The IN PROGRESS and DONE columns are empty.

TO DO	IN PROGRESS	DONE
4 dark blue	0	0
4 yellow	0	0
4 red	0	0
6 green	0	0



### Kanban Task Board (3 of 4)





### Kanban Task Board (4 of 4)





**CHECK YOUR  
UNDERSTANDING**



1. Product Owner has to mandatorily participate in Daily Scrum Meeting.

- ☐ Yes
- ☐ No
- ☐ Not required
- ☐ Need basis





1. Sprint backlog is updated by:

- ☐ Scrum Master
- ☐ Scrum Team
- ☐ Scrum Product Owner
- ☐ Any of the above





## CONCEPT

### *Sprint Review and Retrospective*



## Sprint Review

- The purpose of the Sprint Review is:
  - Demo what the team has built
  - Generate feedback which the Product Owner can incorporate in the Product Backlog
- Attended by Team, Product Owner, ScrumMaster, functional managers, and any other stakeholders
- A demo of what's been built and not a presentation about what's been built:
  - No Power Points allowed!
- Usually lasts 1-2 hours
- Followed by Sprint Retrospective





## Sprint Retrospective

### What is it?

- 1-2 hour meeting following each Sprint Demo
- Attended by Product Owner, Team, and ScrumMaster
- Usually a neutral person will be invited in to facilitate
- Presents what is working and what could work better

### Why does the Retrospective matter?

- Accelerates visibility
- Accelerates action to improve



## Sprint Retrospective: Four Square Method

### A look at the Four Square Method

Went Well



Need Improvements



Stop



Shout Out





**CHECK YOUR  
UNDERSTANDING**



1. Which practice does not fall under technical best practices?

- ☐ Automated build and Continuous Integration
- ☐ Automated Regression Testing
- ☐ Code Review and Rework
- ☐ None of the above





## 1. 2. Retrospective meetings help us to:

- ☐ Identify areas of improvement
- ☐ Recognize team members
- ☐ Inspect and Adapt
- ☐ A & B Only



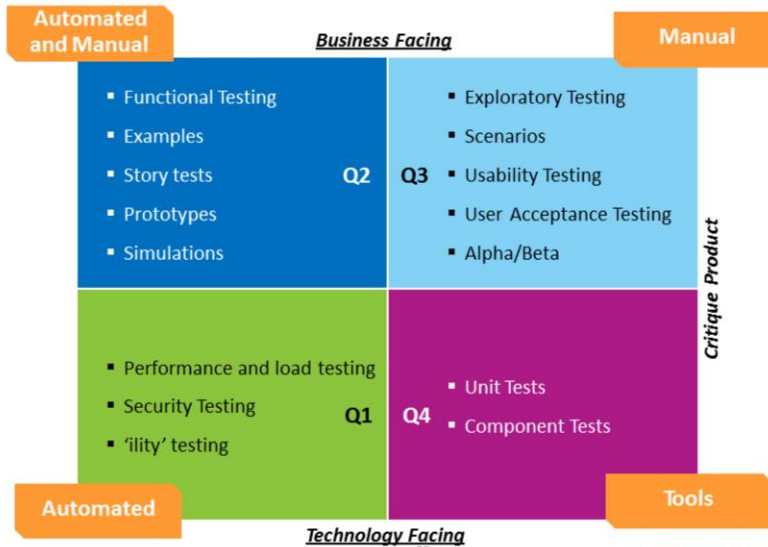


## CONCEPT

### *Agile - Testing*



### Agile Test Quadrants





### Agile Test Quadrants (continued)

#### Quadrant 1:

- Depicts unit and component tests written by developers
- Largely automated and represent a low cost of ensuring that the system works as intended

#### Quadrant 2:

- Depicts user facing story and functional tests
- Tests the higher level features of the system and can be both automated and manual

#### Quadrant 3:

- Depicts system-level tests to determine the aggregate behavior of the system meets its usability and functionality requirements
- Largely manual since they involve users and testers using the system in actual or simulated deployment

#### Quadrant 4:

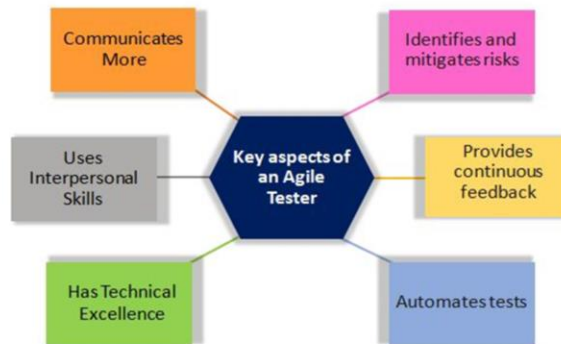
- Ensures the system meets non-functional requirements
- Supported by tools such as load, performance, or specialized tools





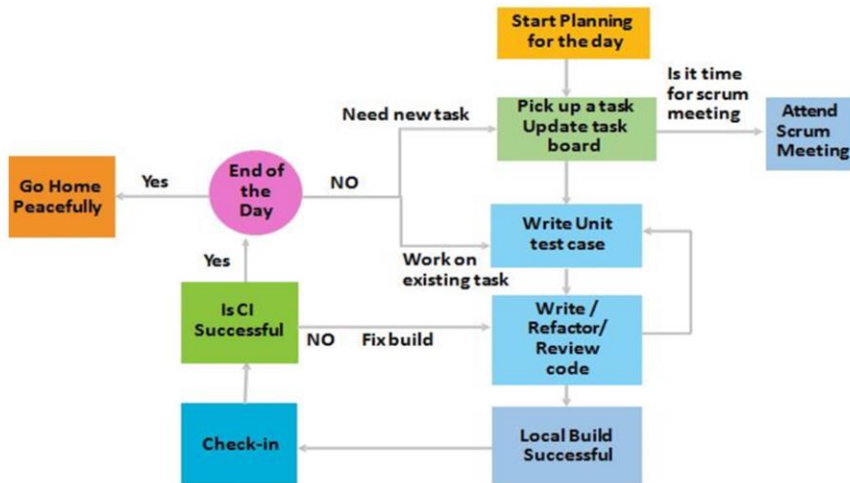
### Agile Test Quadrants (continued)

- Testers are a seamless part of the team to improve and build quality into the system and work
- closely with the product owner. Following are the key aspects of an agile tester.



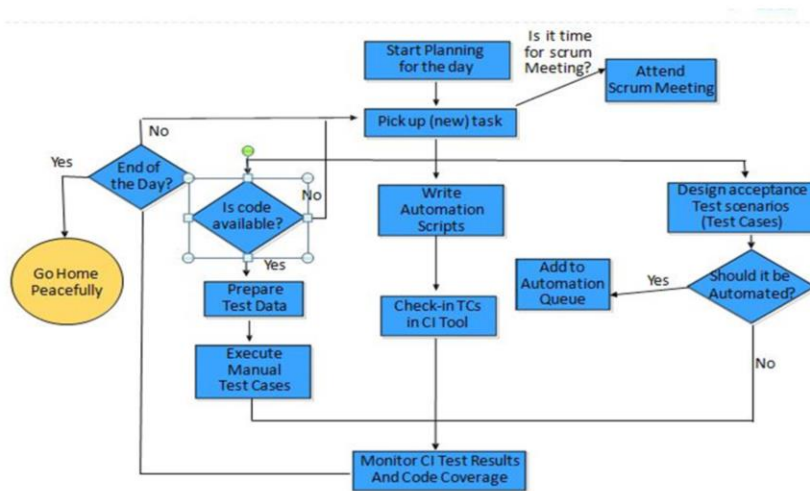


## A typical day in the life of a developer





## A typical day in the life of a tester





**CHECK YOUR  
UNDERSTANDING**



## 1. Quadrant 2 in the Agile Test Quadrants depicts

- ☐ Non-functional tests
- ☐ User facing story and functional tests
- ☐ Unit and Component Tests
- ☐ User facing story and functional tests

