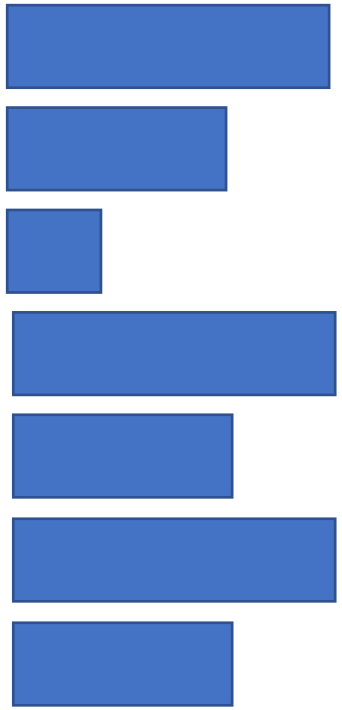
Agile Requirements, Scrum, Extreme Programming, Agile Tools

Case Study: Modern Book Rental Store

Modern Book Rental Store(MBRS) rents books and it wants to automate its operations by managing the book inventory that has variety of books, and its customer data and the history of customers' transactions. MBRS announces various promotions such as 'Promo-A: 20% discount on Kids books' , 'Promo-B: 2 Kids books with zero rental fee if you rent 10 non-fiction books in 30 days', 'Promo-C: Rent 5 new books in a week and get zero rent on one book' and it has plans to announce more such promotions. In MBRS, for every customer who rents books, the transaction is calculated and optimized to get the minimum price and customer transactions are stored for future use.

Agile Requirements

Backlog



Epics

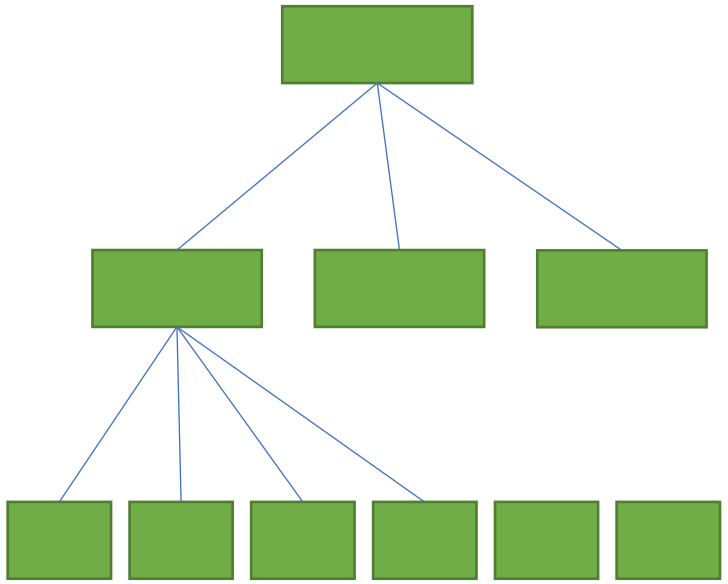
1 to 3 Months

Features

2 to 4 Weeks

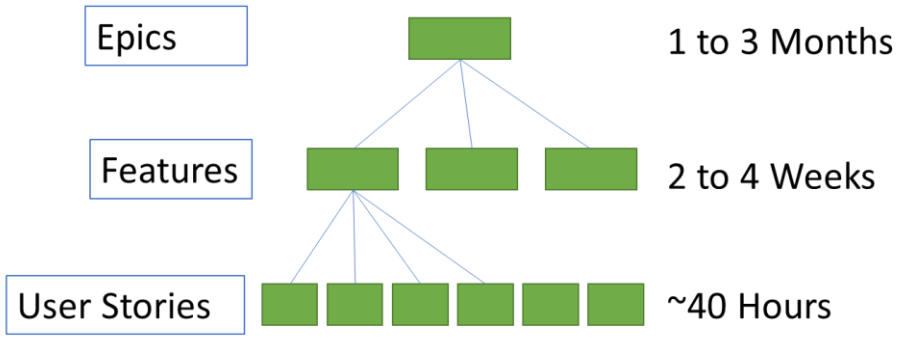
User Stories

~40 Hours



Agile Requirements - Examples

Epic	Customer Management (in MBRS)
Feature	Customer Registration



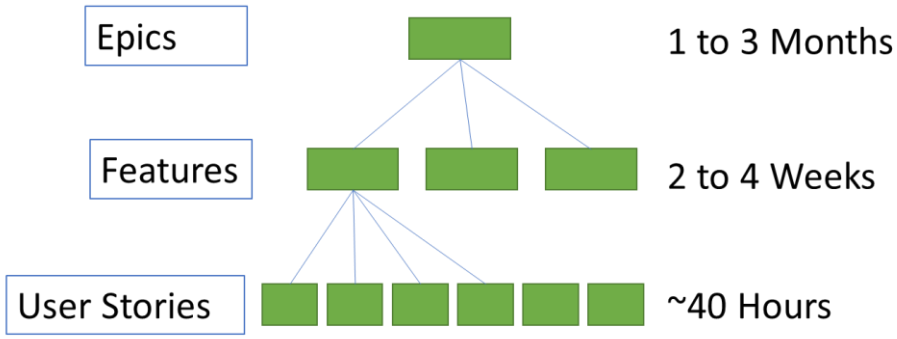
Quiz:

1. What are the steps involved in customer registration?
2. What are the additional features in ‘Customer Management’ epic?

Agile Requirements - Examples

Epic — Transaction Management (in MBRS)

Feature — Renting Books from MBRS



User Stories

1. As a ‘Receptionist’ at MBRS, I want to scan the books given by a customer and initiate rental so that I see a list of books rented on the screen.
2. As a ‘Receptionist’ at MBRS, I want to process the best promotion plan for a customer during book rental so that the customer gets maximum benefits.
3. As a ‘Receptionist’ at MBRS, I want to confirm book rental and print receipt so that customer can complete book rental.

Different Types of Use Stories

- Business User Stories - These are related to business requirements or features required by end users.
- Technical User Stories – These are related to implementing technical requirements or architectural/design related components.
- Bug Fixes – These are related to fixing defects in the product or application.

Business User Stories - Example

These are related to business requirements or features required by end users.

1. Register a customer
2. Modify customer address
3. Rent books
4. Apply Penalty
5. Send notifications

Technical User Stories - Example

These are related to implementing technical requirements or architectural/design related components.

1. Create a report builder (where end users can select required fields, summaries and format the report for printing)
2. Implement logging and audit trails
3. Create a common exception handler

Bug Fixes or Defect Fixes - Example

These are user stories related to fixing defects in the product or application.

1. Fix Defect MBRS-0001 (Incorrect message is displayed when a book is not available)
2. Fix Defect MBRS-0024 (Promotion calculation is wrong)

User Stories

- The term ‘User Story’ originated in Agile Software Development (Extreme Programming)
- User Stories are short descriptions
- The 3 Cs of User Stories are **Card**, **Conversation** and **Confirmation**.

3 Cs of User Stories

1. **Card** – User stories are written in a card (post card size)
2. **Conversation** – User stories are written in a conversational format (Who , What , Why)

   Example:

   As a << role >>, I want to << ….. >>, so that I can do << ….. >>

   As a ‘Receptionist’ at MBRS, I want to confirm book rental and print receipt so that customer can complete book rental

3. **Confirmation** – The acceptance criteria (what tests will we run to confirm that the user story works as expected).

Use Cases

- The term ‘Use Case’ originated in OOAD/UML
- Use Cases involve long descriptions
- There is a specific template to write use cases.

Use Case Template

1. Unique ID and Name
2. Goal Statement
3. Authors
4. Priorities
5. Requirements Satisfied
6. Outstanding Issues
7. Risk
8. Assumptions
9. Actors
10. Preconditions
11. Post-conditions
12. Used Use Cases
13. Extension Points
14. Flow of Events
15. Non Functional Requirement

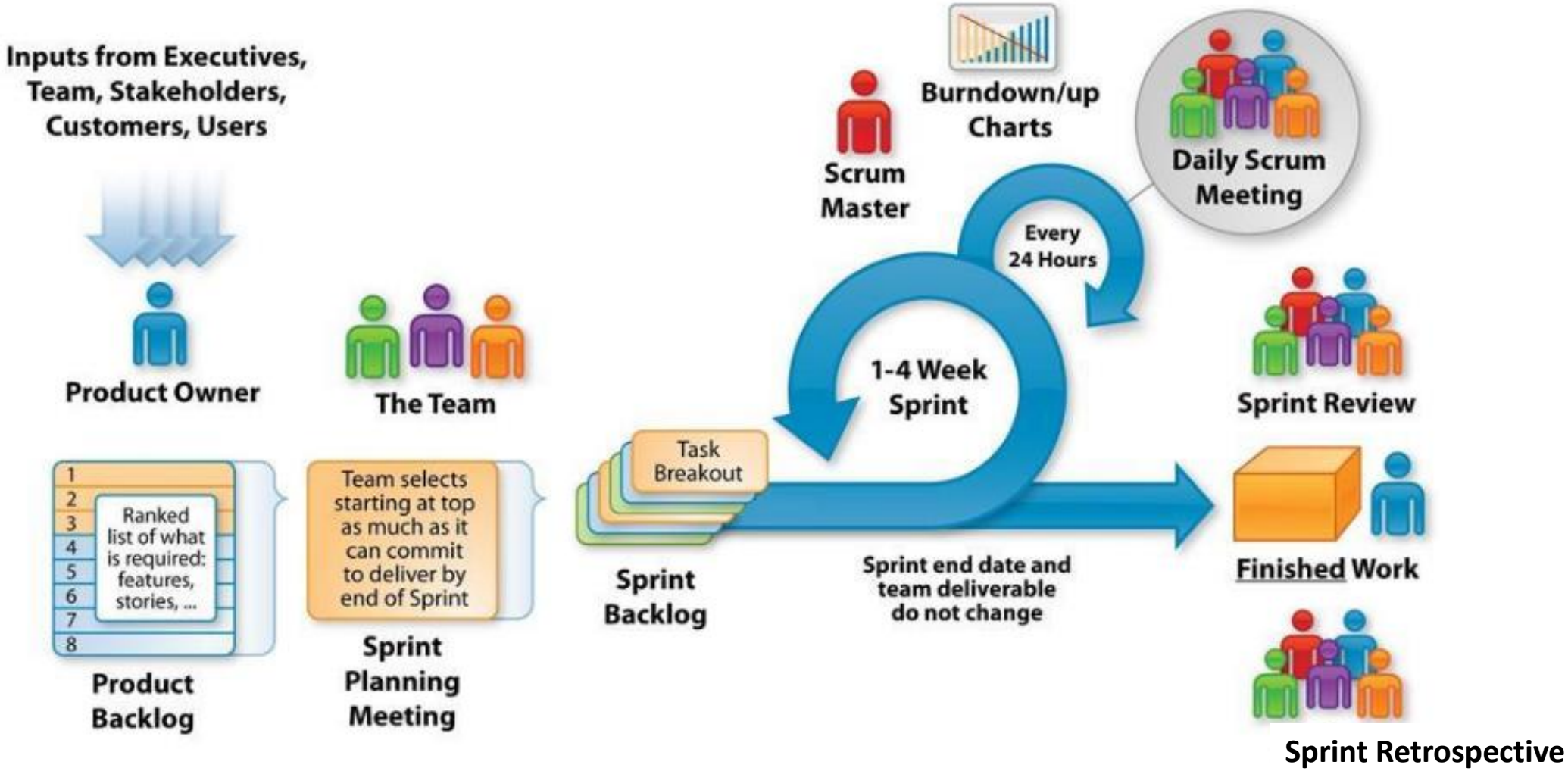
Use Case Templates help us in creating effective use case diagrams.

Use Case vs. User Story

User Stories	Use Cases
Short descriptions	Short or lengthy descriptions
Focuses on ‘Who’, ‘What’ and ‘Why’	Focuses on ‘Flow’ and ‘Interactions’
Provides general guidance	Provides in-depth guidance
Does not include technical details	Includes technical details
Originated in Agile Methods (Extreme Programming (XP))	Originated in OOAD

Scrum

Introduction to Scrum



3 Roles, 4 Meetings, 3 Artefacts

Roles

1. Product Owner
2. Scrum Master
3. Team

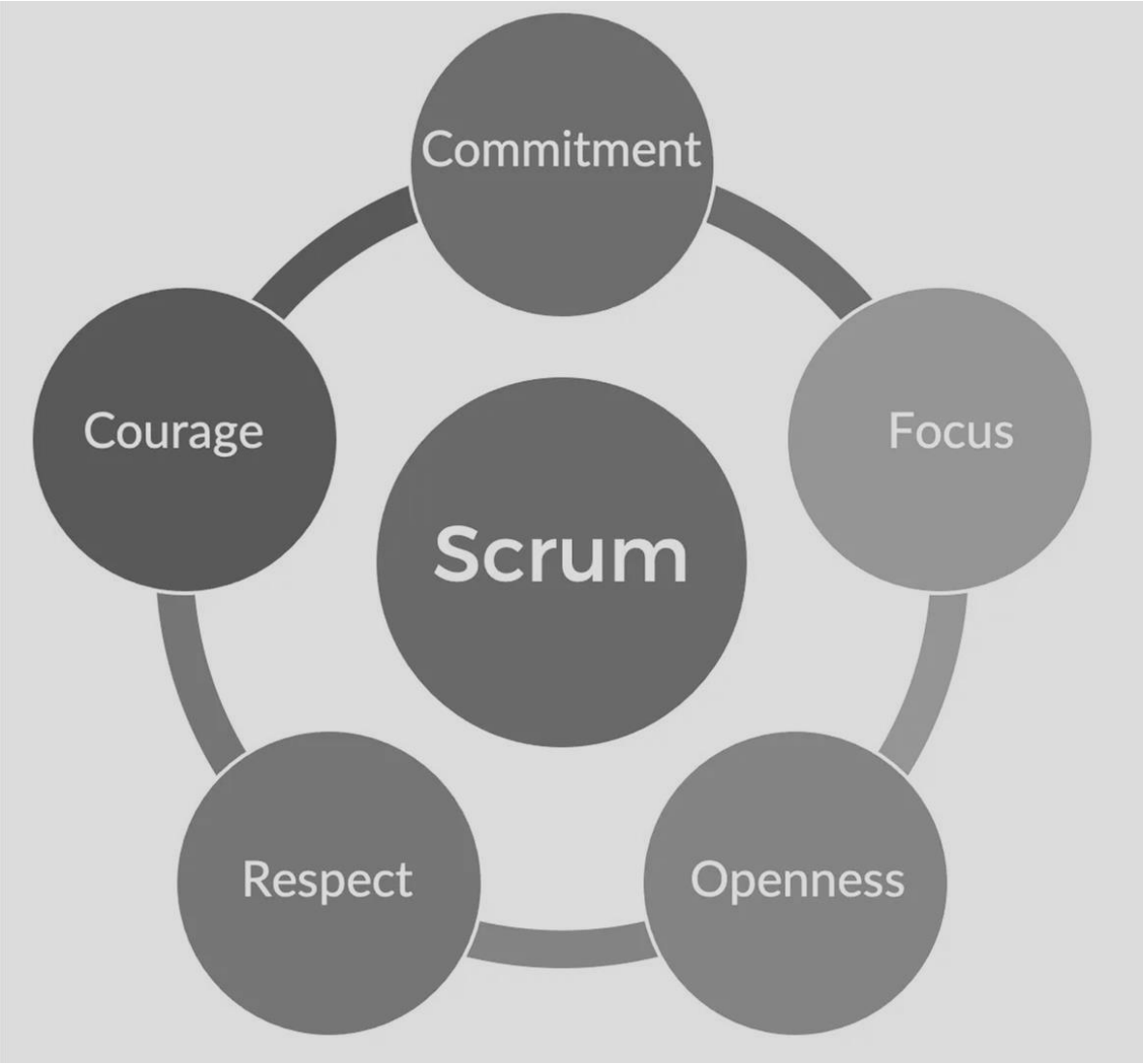
Meetings

1. Sprint Planning
2. Sprint Review
3. Sprint Retrospective
4. Daily Scrum Meeting

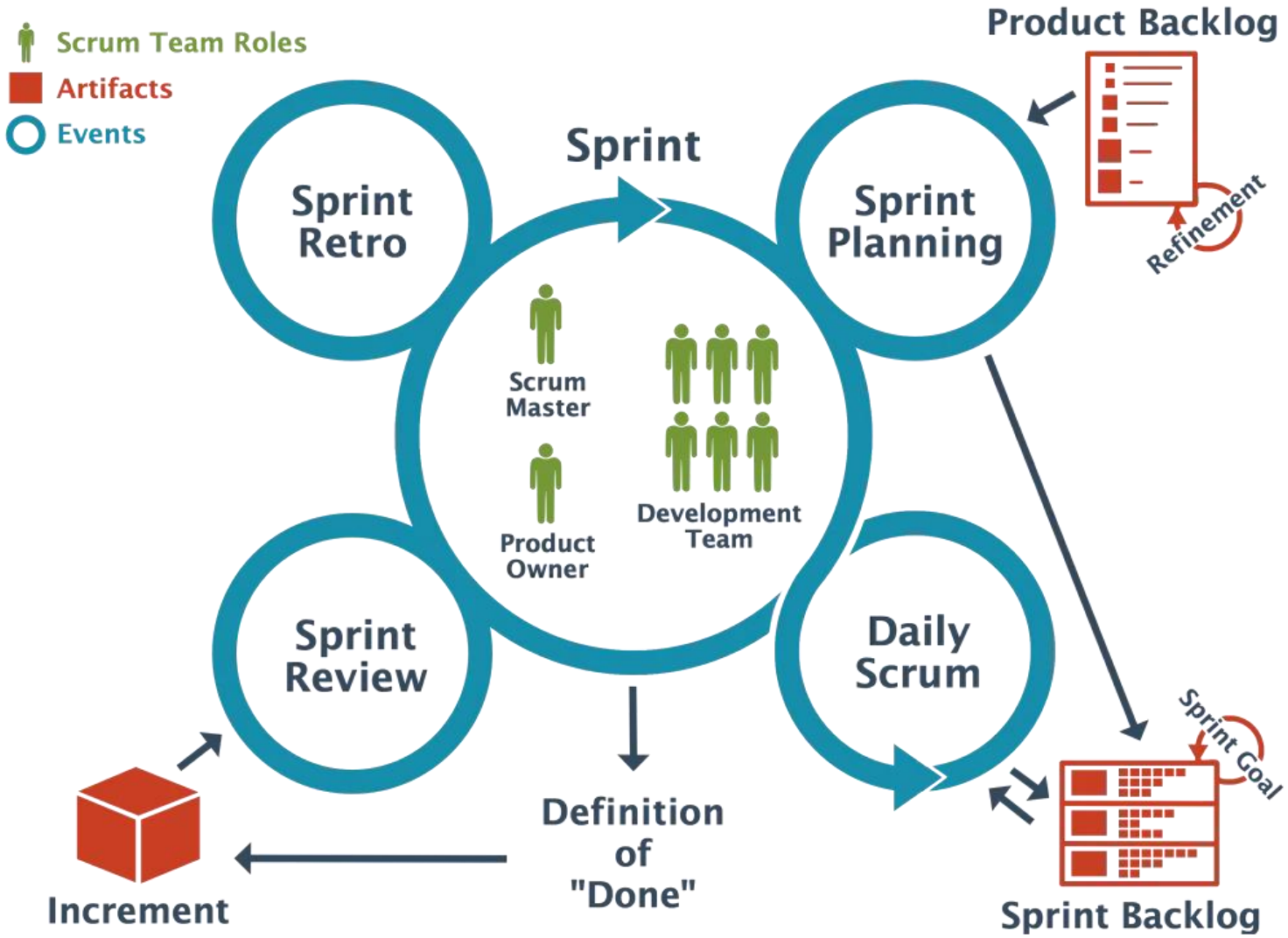
Artefacts

1. Product Backlog
2. Sprint Backlog
3. Burndown Charts

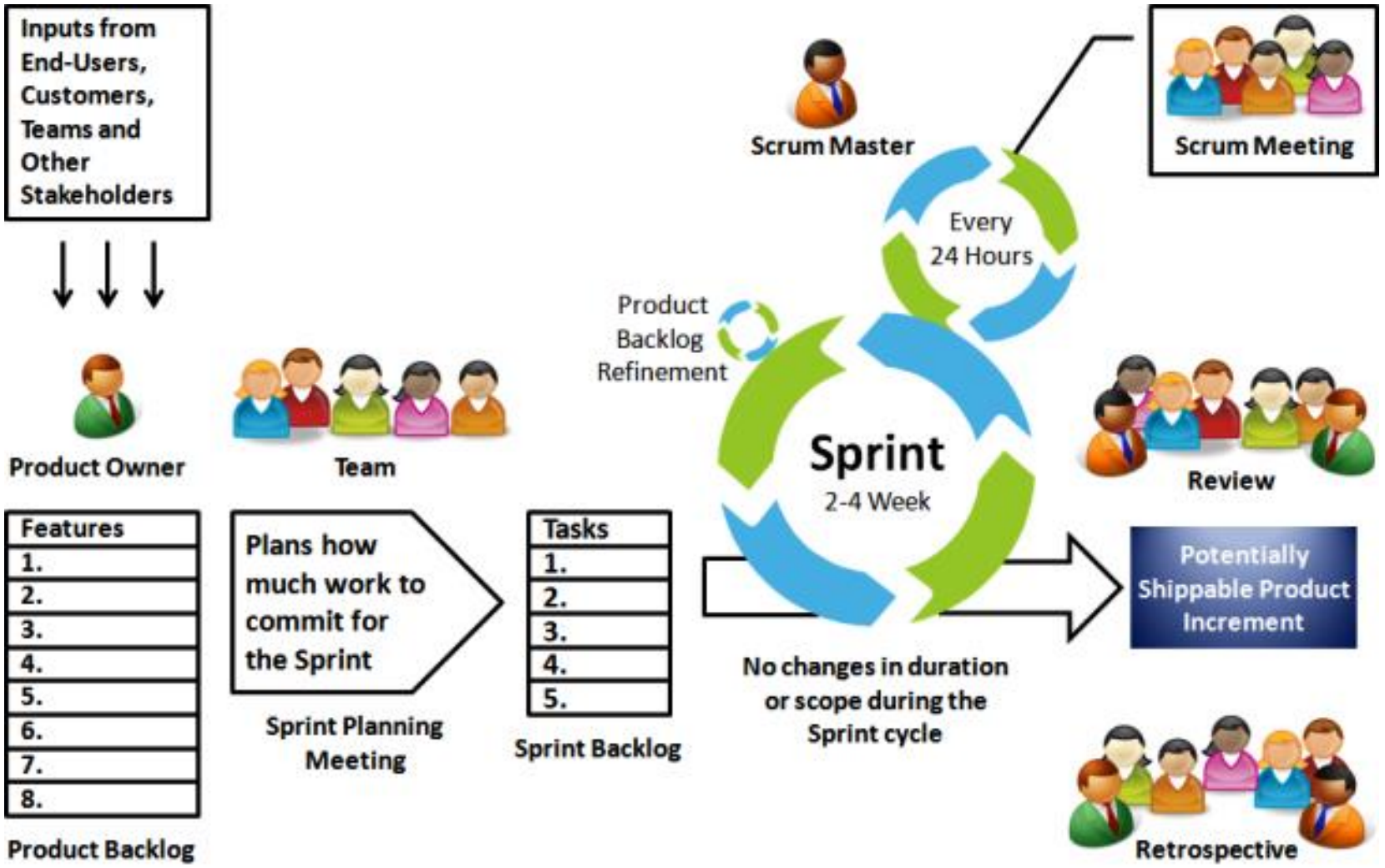
Scrum Values



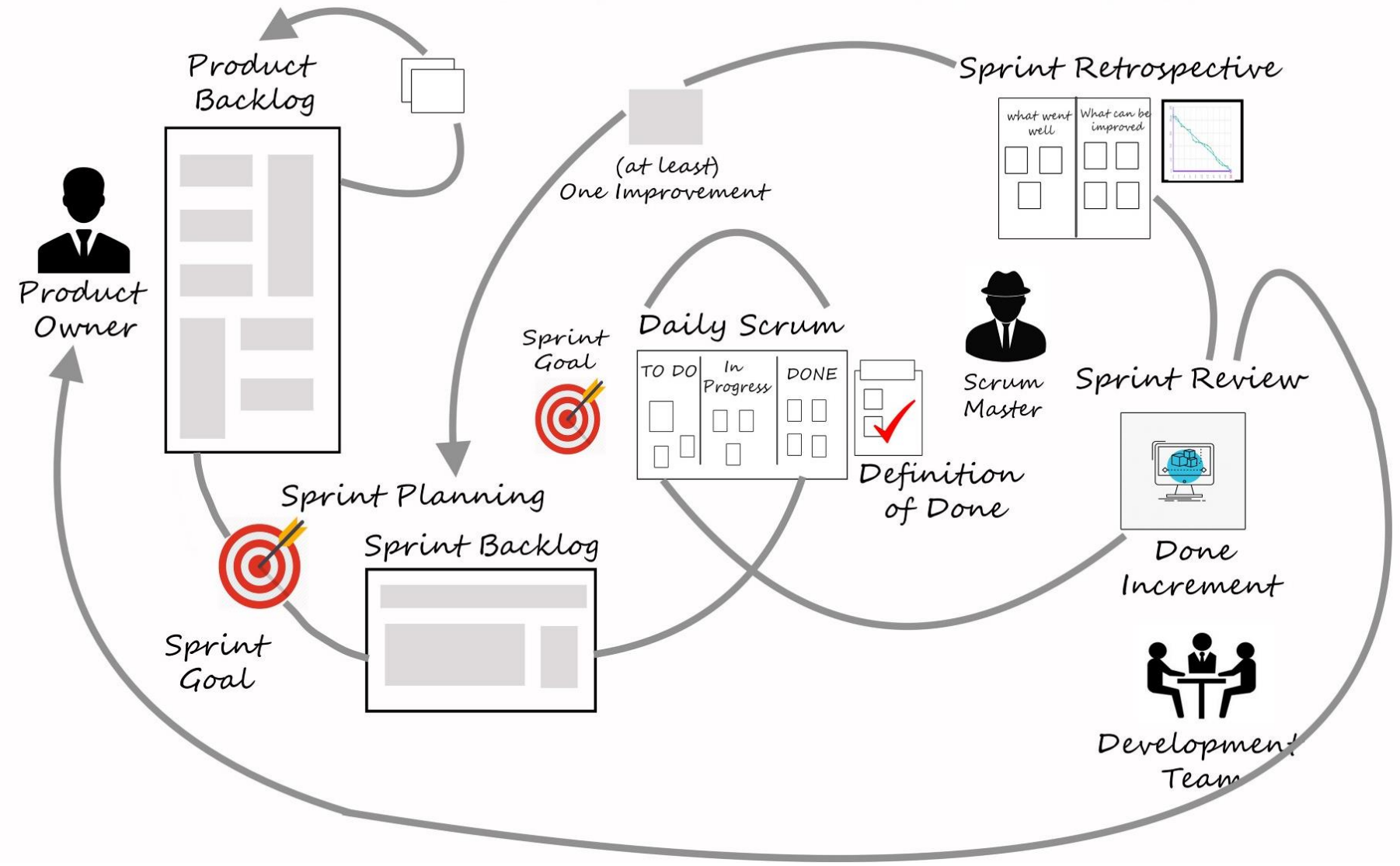
Scrum Lifecycle



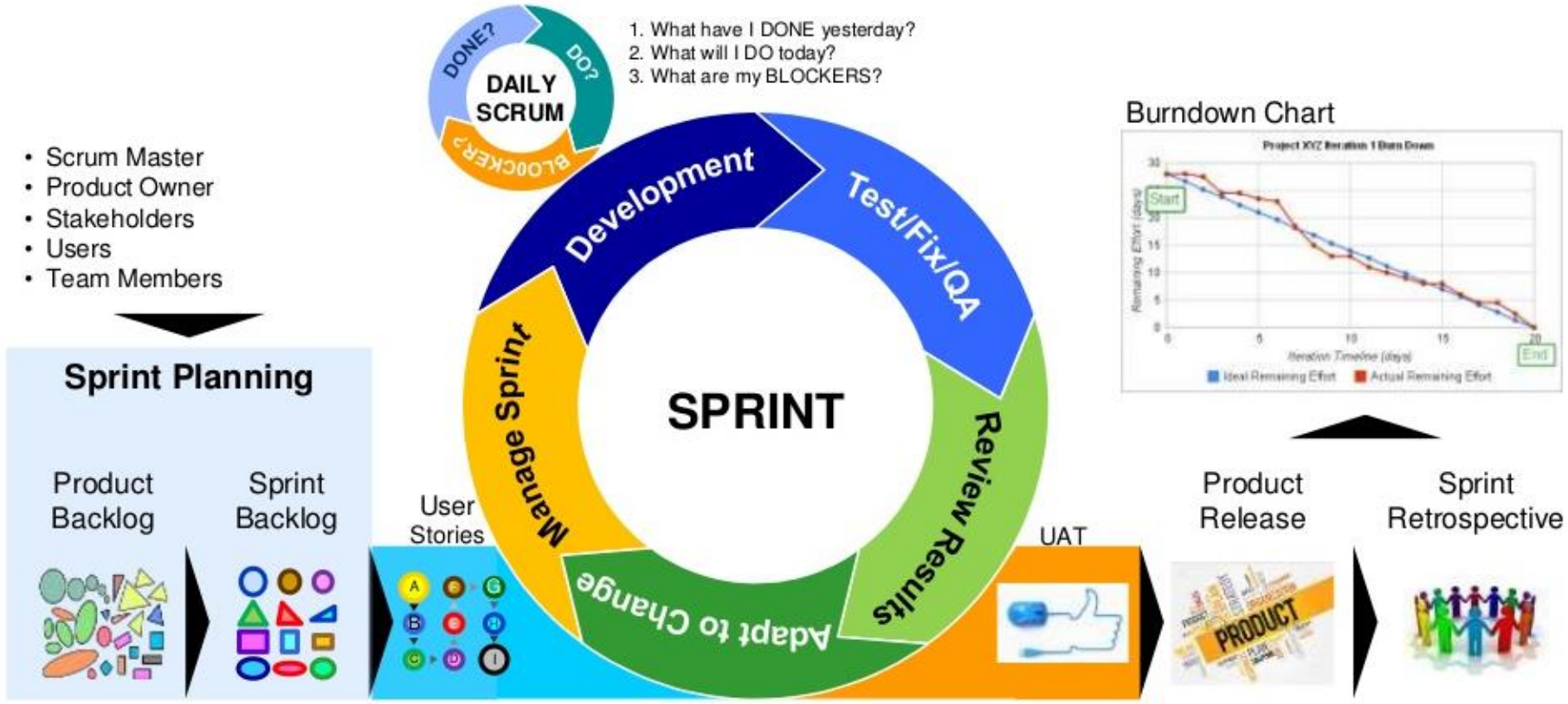
Creating Potentially Shippable Product



Roles


Product Backlog
Product Owner
(at least) One Improvement
Sprint Retrospective
what went well
What can be improved
Sprint Goal
Daily Scrum
TO DO
In Progress
DONE
Definition of Done
Scrum Master
Sprint Review
Sprint Planning
Sprint Backlog
Sprint Goal
Done Increment
Development Team

Detailed View



- Product backlog prioritized by business value
- Sprint backlog includes bugs
- Team decides what it can commit to deliver
- Sprint backlog grooming will further prioritize the order of development/implementation

- 2 to 4 weeks of elapsed time
- Iteratively develop/test/re-view/adapt/manage
- Level of Effort = Story Points
- Velocity = Story Points/Sprint Period
- Dynamically adjust workload
- Test Driven Development
- Weekly Backlog Review

- Product increment – delivery of all Product Backlog items during Sprint
- Release Notes for clients
- Sprint Retrospective
  - What went well?
  - What went wrong?
  - What can we improve?

Question 11

The smallest form of representing requirements in Agile projects is

A. Epic
B. Feature
C. User Story
D. Business Requirement

ANSWER: C

Question 12

The average efforts required to implement a user story is typically

A. 2 Weeks
B. 1 Month
C. ~40 Hours
D. Difficult to predict

ANSWER: C

Question 13

Scrum ceremonies are,

A. Sprint Planning, Sprint Review, Sprint Retrospective, Daily Scrum Meeting
B. Sprint Planning, Sprint Estimation, Sprint Review, Daily Scrum Meeting
C. Sprint Planning, Sprint Review, Sprint Demo, Daily Scrum Meeting
D. Sprint Planning, Sprint Estimation, Sprint Tracking, Sprint Review

ANSWER: A

Question 14

Sprint planning is performed based on the inputs from

A. Product Backlog
B. Sprint Backlog
C. User Story
D. Business Requirements

ANSWER: B

Question 15

Which of the following is true about the size of Sprints?

A. The size of a Sprint is 2 to 4 weeks
B. The size of a Sprint is decided by the customer
C. It is recommended that the size of all Sprints can be adjusted frequently for several consecutive Sprints
D. All of the above

ANSWER: A

Extreme Programming(XP)

Introduction to XP

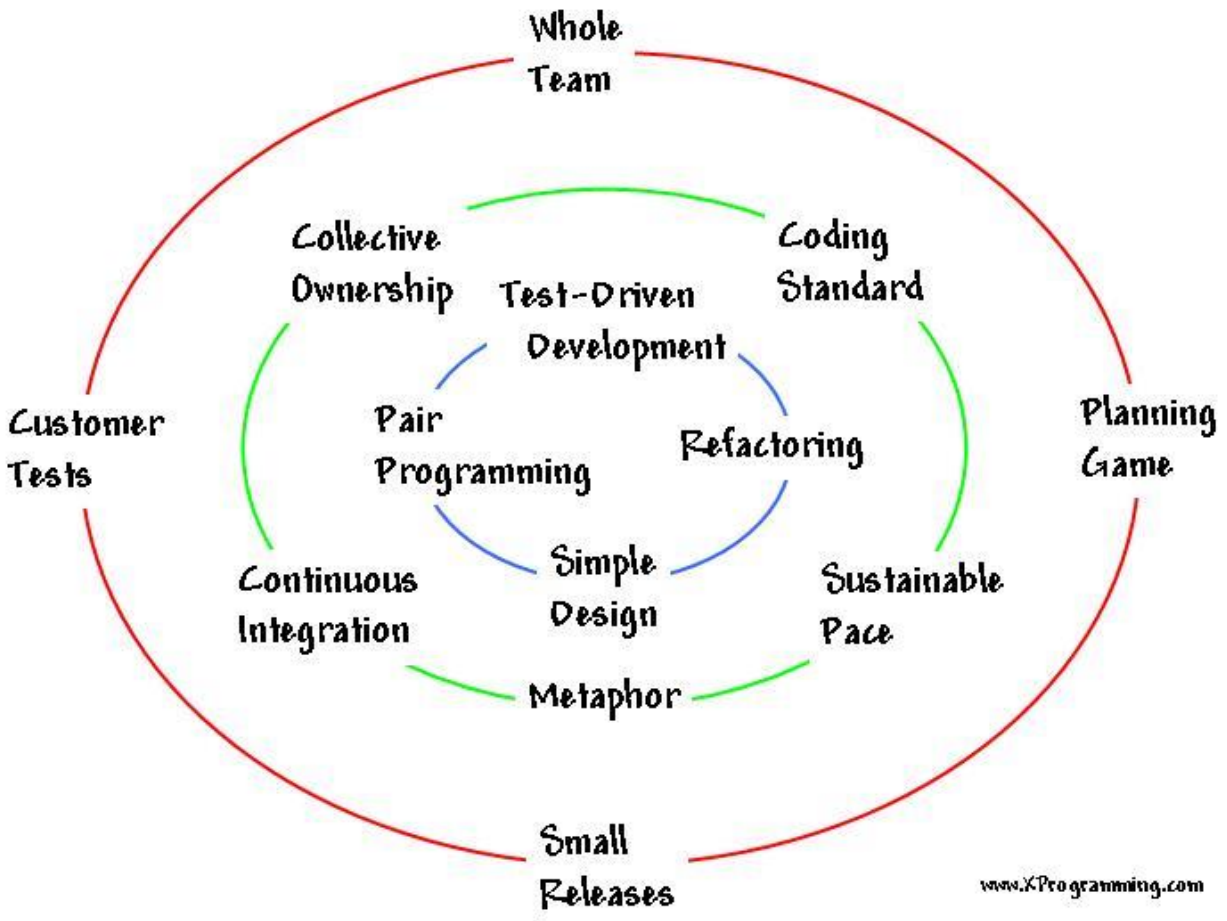
- XP is one of the Agile Methods. Key focus areas include,
  - Feedback: Instead of lots of documentation to capture what customer wants up front, XP emphasizes plenty of feedback
  - Embrace change: iterate often, design and redesign, code and test frequently, keep the customer involved
  - Short Iterations: Deliver software to the customer in short (2 week) iterations
  - High Quality: Eliminate defects early, thus reducing costs

XP Values

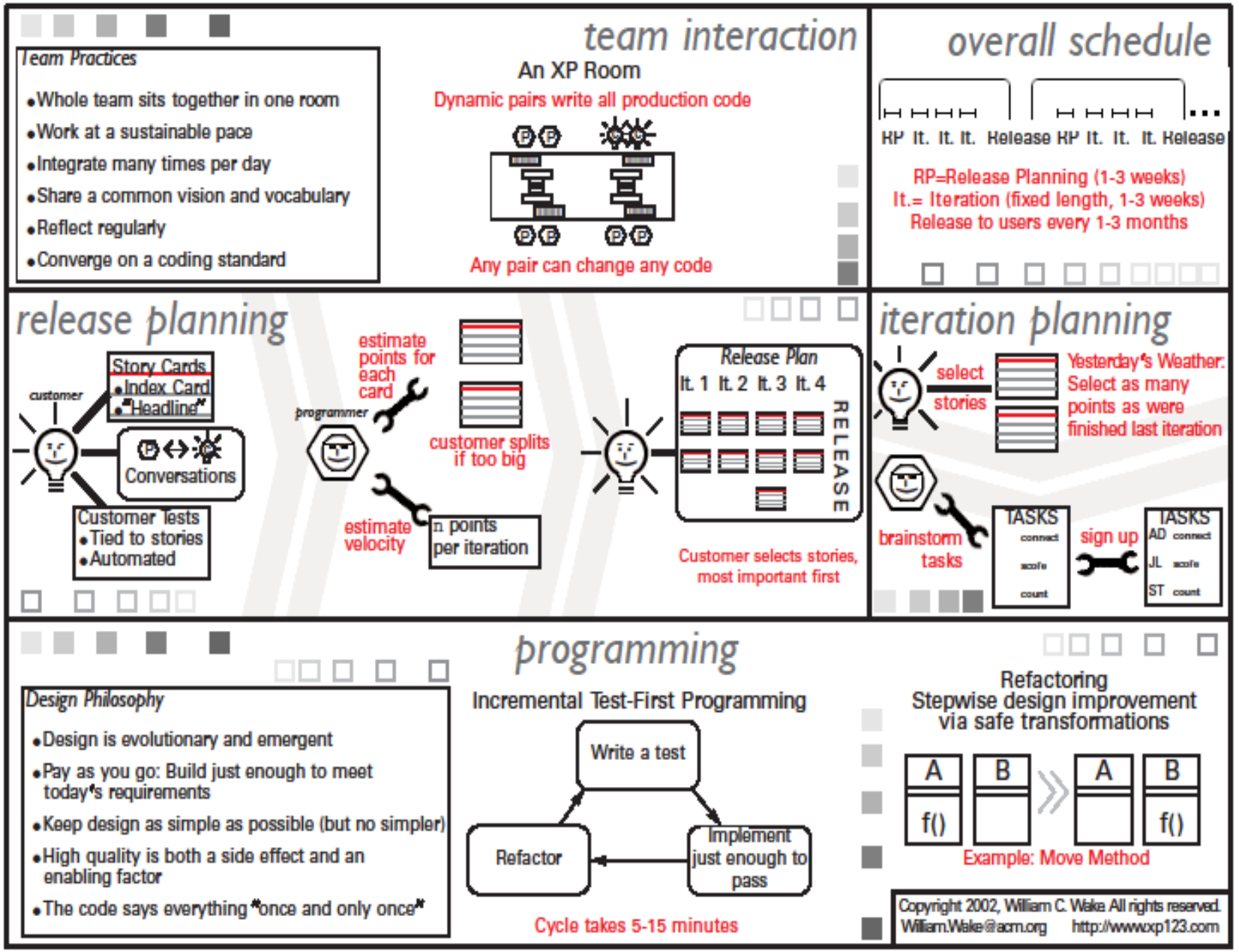
- Communication
- Simplicity
- Feedback
- Courage
- Respect

XP Practices (the original 12 practices)

1. The Planning Game
2. Small Releases
3. Metaphor
4. Simple Design
5. Testing
6. Refactoring
7. Pair Programming
8. Collective Ownership
9. Continuous Integration
10. 40-hour week
11. On-site Customer
12. Coding Standard



Extreme Programming Overview



Question 16

Which of the following are the XP practices related to coding?

A. Coding Standard, Pair Programming, Refactoring, Collective Ownership
B. The Planning Game, 40-hour week, Small Releases, Testing
C. Continuous Integration, On-site Customer, Small Releases, Testing
D. Continuous Integration, Simple Design, Small Releases, The Planning Game

ANSWER: A

Question 17

The term ‘User Story’ originated from which Agile method?

A. Scrum
B. Extreme Programming
C. DSDM
D. Lean Development

ANSWER: B

Question 18

The role ‘Product Owner’ is from which Agile method?

A. Scrum
B. Extreme Programming
C. DSDM
D. Lean Development

ANSWER: A

Question 19

It is recommended that the duration of Daily Scrum Meeting (or Daily Standup Meeting) is

A. 30 minutes
B. 15 minutes
C. 1 hour
D. 4 hours

ANSWER: B

Question 20

In Scrum, who is responsible for providing guidance and deciding on prioritizing user stories?

A. Scrum Master
B. Product Owner
C. Project Manager
D. Team Members

ANSWER: B

Question 21

The 3Cs of user stories include

A. Card, Confirmation, Convenience
B. Card, Conviction, Confirmation
C. Card, Conversation, Confirmation
D. Card, Communication, Conversation

ANSWER: C

Tools Used in Agile Web Development Projects

Agile tools for agile teams

Stay on track as you plan, develop, and deliver products.

Jira Align
Enterprise Agile planning

Jira Software
Project and issue tracking

Confluence
Document collaboration

Build at the speed of innovation

Plan software projects, collaborate on code, test and deploy products.

Jira Software
Project and issue tracking

Bitbucket
Git code management

Sourcetree
Git and mercurial desktop client

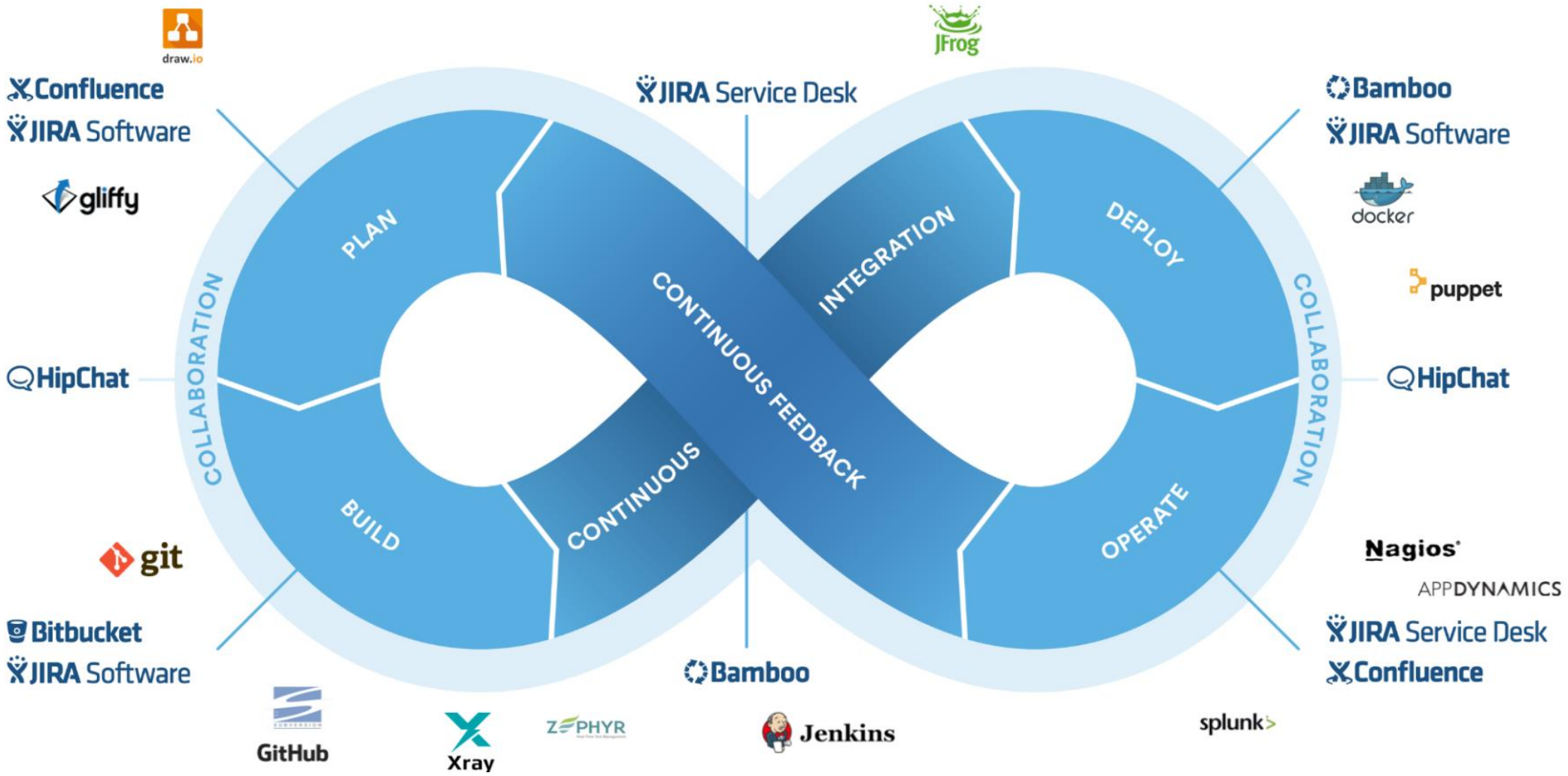
Move work forward

Create, organize, discuss, and complete work, together.

Confluence
Document collaboration

Trello
Collaborate visually on any project

Jira Work Management
Business team collaboration


draw.io
Confluence
JIRA Software
gliffy
HipChat
git
Bitbucket
JIRA Software
GitHub
Xray
ZEPHYR
JFrog
JIRA Service Desk
Bamboo
Jenkins
Bamboo
JIRA Software
docker
puppet
HipChat
Nagios
APPDYNAMICS
JIRA Service Desk
Confluence
splunk>
PLAN
BUILD
CONTINUOUS
INTEGRATION
DEPLOY
OPERATE
COLLABORATION
COLLABORATION
CONTINUOUS FEEDBACK

Summary

- ✓Agile Requirements
- ✓Scrum
- ✓Extreme Programming (XP)
- ✓Agile Tools

Thank You!