

Extreme Programming (XP)

- Xp is an most commonly used agile process model.
- Xp is a lightweight, efficient low risk, flexible, predictable, scientific to develop the software.
- Small to medium sized team that works under vague and rapidly changing environment

The five XP values are:

- Communication:
- Simplicity:
- Feedback:
- Courage:
- Respect:

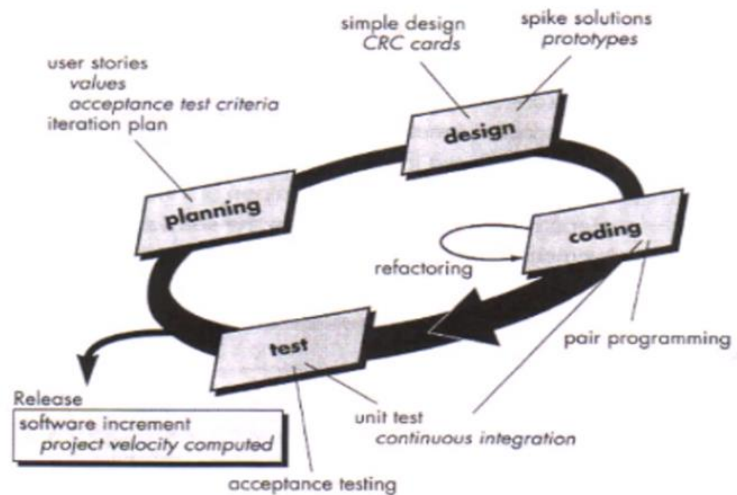


Fig. Extreme Programming Process

Class-Responsibility Collaborator(CRC).

Class: <i>Librarian</i>	
Responsibilities	Collaborators
<i>check in book</i>	<i>Book</i>
<i>check out book</i>	<i>Book, Borrower</i>
<i>search for book</i>	<i>Book</i>
<i>knows all books</i>	
<i>search for borrower</i>	<i>Borrower</i>
<i>knows all borrowers</i>	

Class CardReader	
Responsibilities	Collaborators
Tell ATM when card is inserted	ATM
Read information from card	Card
Eject card	
Retain card	

• The five XP values are:

1. **Communication:** Enhance the communication of team members with customers
2. **Simplicity:** Build something simple that will work today rather than something that takes time. Never think tomorrow
3. **Feedback:** Continuous feedback must be taken from customer.
4. **Courage:** Don't hesitate to discard the code.
5. **Respect:** Respect must maintain among the team members and stakeholders.

The XP Processes:

1. Planning:

- Begins with creation of user stories.
- Agile team assesses each story and assigns costs.
- Stories are grouped for deliverable increments
- A commitment is made on delivery dates.

2. Design:

- Follow the KIS principles
- Encourage the use of CRC cards
- For difficult design problem, suggest the creation of 'spike solution' - a design prototype.
- Encourage the refactoring- an iterative refinement of internal program

The XP Processes:

3. Coding:

- Recommends the construction of unit test (test case) before coding commences (test-driven development).
- Encourage pair programming.

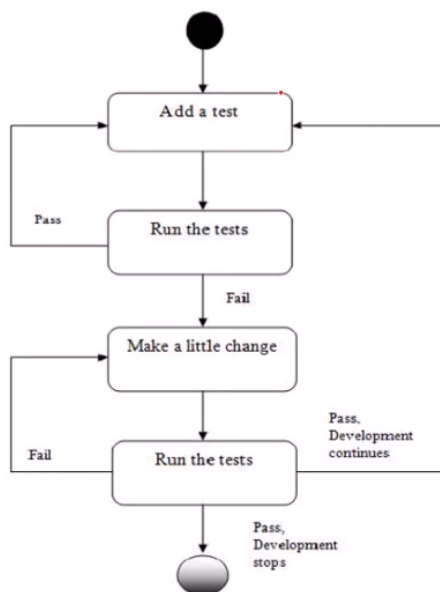
4. Testing:

- All unit tests are executed daily.
- Acceptance tests are defined by the customer and executed to assess customer visibility functionalities

Xp Practices (Principles):

1. Incremental Planning:
2. Small Releases:
3. Simple design:
4. Test first development:
5. Refactoring:
6. Pair programming:
7. Collective ownership:
8. Continuous Integration:
9. 40 Hour Week:
10. On-site Customer:

Testing In Xp: Test Driven Development



- TDD is an evolutionary approach to development which combines Test first development TFD and refactoring.
- TDD is software development process relies on repetition on very short development cycle.

Steps:

- Write a single unit test , just enough to fail the code.
- Run the test, which should fail because the program lack that feature.
- Then update your functional code to make test pass.
- Run your test again, if fail need to update code.

- **ADVANTAGES:-**

1. Fewer documentation required.
2. Collaboration with customers.
3. Flexibility to developers.
4. Easy to manage.

- **DISADVANTAGES:-**

1. Depends heavily on customer interaction.
2. Transfer of technology to new team members may be quite challenging due to lack of documentation.