ADITYA COLLEGE OF ENGINEERING & TECHNOLOGY

CONTINUOUS INTEGRATION AND CONTINUOUS DELIVERY USING DevOps

Exp-2

By
B Manikyala Rao M.Tech(Ph.d)
Assistant Professor
Dept of Computer Science & Engineering
Aditya College of Engineering & Technology
Surampalem

Exercise 2

- Get a working knowledge of using extreme automation through XP programming practices of test first development, refactoring and automating test case writing.
- Reference course name: Development & Testing with Agile: Extreme Programming

Extreme Programming

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:

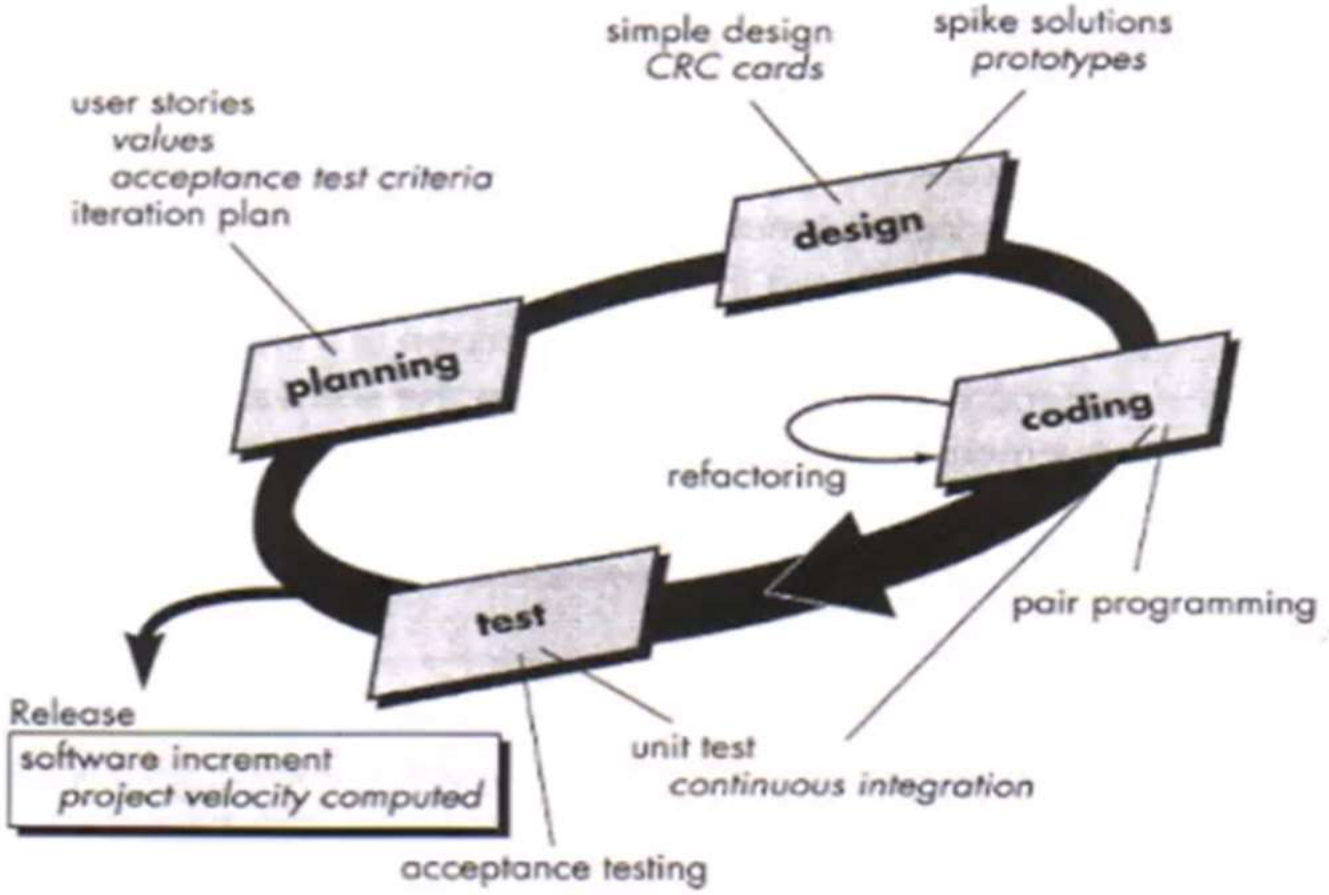


Fig. Extreme Programming Process

Extreme Programming

- **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: Continues 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.

Extreme Programming

The XP Processes:

1. Planning:

- Begins with creation of user stories.
- Agile team asses each story and assign 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

Extreme Programming

The XP Processes:

3. Coding:

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

4. Testing:

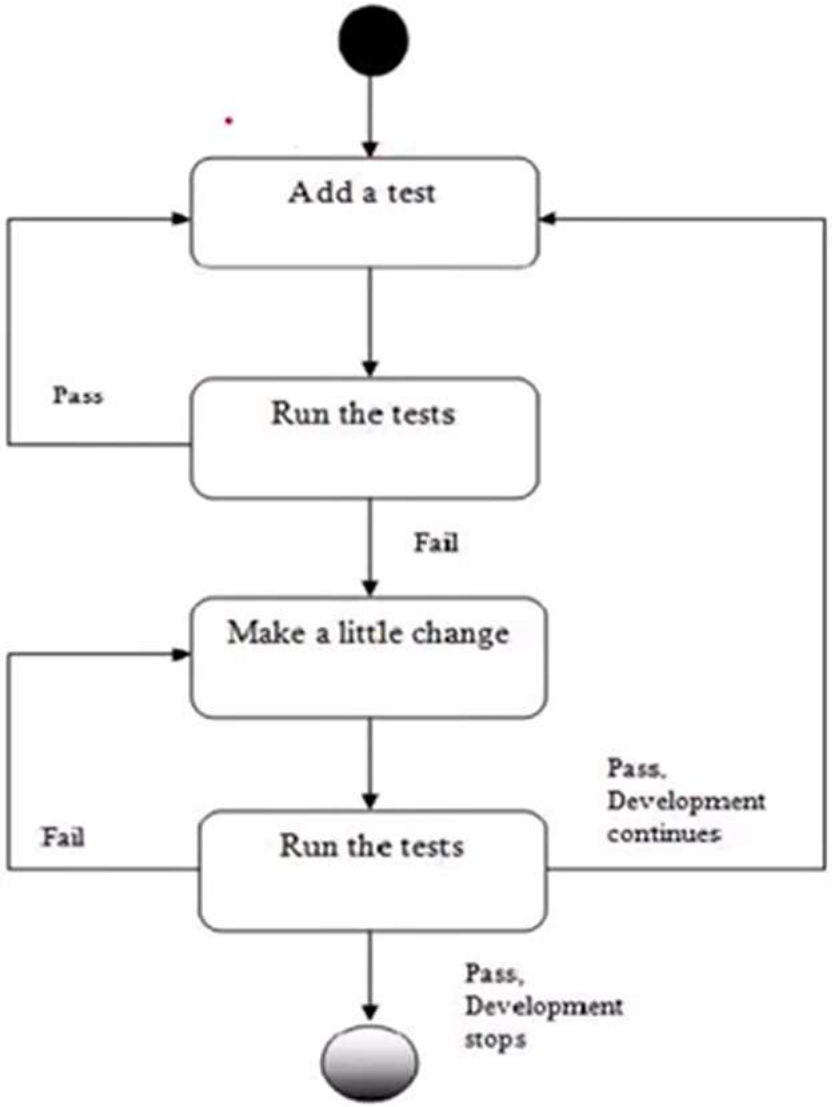
- All unit tests are executed daily.
- Acceptance test are defined by the customer and executed to assess customer visibility functionalities

Extreme Programming

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.

Pair Programming

- In pair programming , programmer sit together at same workstation to develop the software .
- The share f knowledge that happened during pair programming is important as it reduces, overall risk to the projects.

- **Advantages:**

  - Supports the idea of collective ownership and responsibility for the system.
  - Individual not responsible, team is responsible for any problems.
  - It act as informal review process, because each line of code looked by two peoples.

ANY QUERIES