

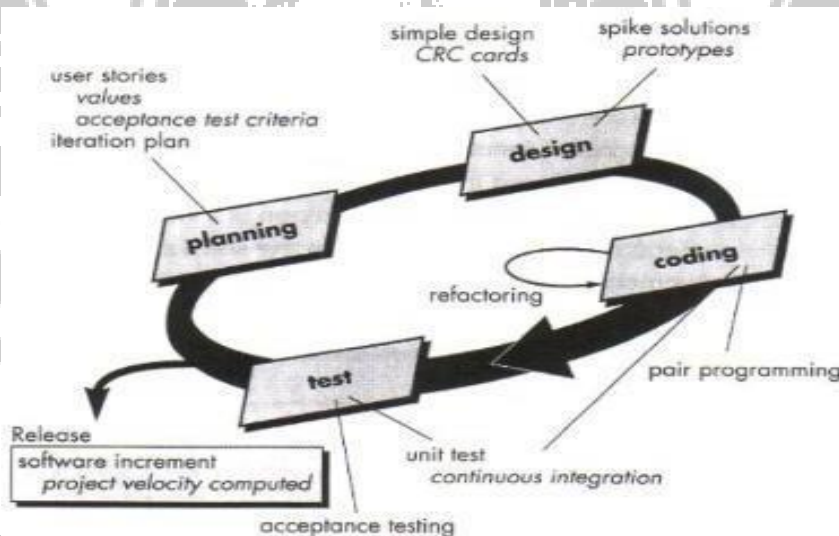
## 7. The XP Process:

□ Extreme programming uses an **object-oriented approach** for software development. There are four framework activities involved in XP Process.

1. Planning
2. Designing
3. Coding
4. Testing

### 1. Planning:

- Begins with the creation of a set of stories (also called use stories). Each story is written by the customer and is placed on an index card. The customer assigns a value (i.e. a priority) to the story.
- Agile team assesses each story and assigns a cost. Stories are grouped to form a deliverable increment.



**Figure 1.15 The Extreme Programming Process**

- A commitment is made on delivery date.
- After the first increment “project velocity “is used to help define subsequent delivery dates for other increments.

### 2. Design:

- Follows the keep it simple principle.
- Encourage the use of CRC(class-responsibility-collaborator)cards.
- For difficult design problems, suggests the creation of “spike solutions”—a design prototype. Encourages“refactoring”—an iterative refinement of the internal program design
- Design occurs both before and after coding commences.

### 3. Coding:

- Recommends the construction of a series of unit tests for each of the stories before coding

Test driven management establishes a series of measurable“destinations”and then defines mechanisms for determining whether or not these destinations have been reached.

### Retrospectives:

- i) An IXP team conducts a review after software increment is delivered called retrospective.
- ii) This review examines “issues, events, and lessons-learned”acrossa software increment and/or the entire software release.
- iii) The intent is to improve the IXP process.

### Continuous learning:

- i) Learning is a vital product of continuous process improvement; members of the XP team are encouraged to learn new methods and techniques that can lead to a higher quality product.
- ii) In addition to these new practices, IXP modifies a number of existing XP practices.

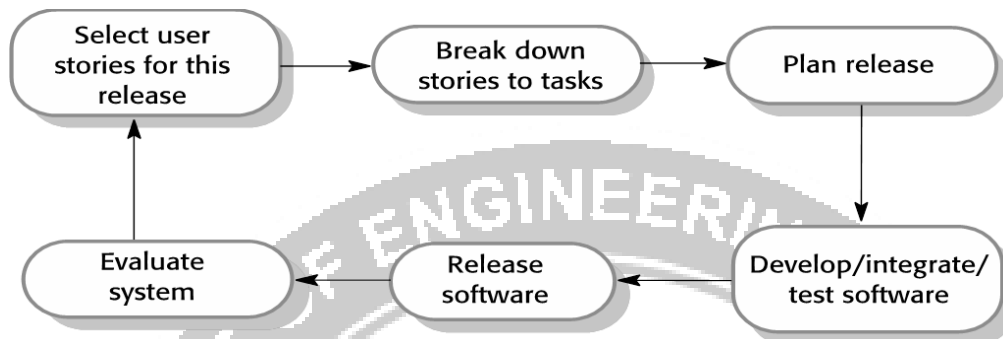
### ✓ Story development(SDD):

- ✓ Insists that stories for acceptance tests be written before a line of code is developed.

### EXTREME PROGRAMMING (XP):

- The best known and a very influential agile method, Extreme Programming(XP)takes an‘extreme’approach to iterative development.
- ✓ New versions may be built several times per day;
- ✓ Incrementsaredeliveredtocustomersevery2weeks;
- ✓ Alltestsmustberunforeverybuildandthebuildisonlyacceptediftestsrunsuccessfully.

- ✓ This is how XP supports **agile principles**:



✓

**Figure 1.14** The extreme programming release cycle

- People not process through **pair programming, collective ownership** and a process that avoids long working hours.
- Change supported through **regular system releases**. Maintaining simplicity
- through **constant refactoring of code**.

### 6.1 XP values:

- ✓ XP is comprised of five values such as:
  - Communication
  - Simplicity
  - Feedback
  - Courage
  - Respect.
- ✓ Each of these values is used as a driver for specific X P activities, actions, and task.
- ✓ In order to achieve effective **communication** between **software engineers and other stake holders**, XP emphasizes close, yet informal (verbal) collaboration between customers and developers, the establishment of effective metaphors for communicating important concepts, continuous feedback, and the avoidance of volume in documentation as a communication medium.
- ✓ To consider **simplicity**, XP restricts developers to design only for immediate needs, rather than future needs.
- ✓ **Feedback** is derived from three sources: the **software, the customer and other team members**.
- ✓ By designing and implementing an effective testing strategy, the software provides the agile team with feedback.
- ✓ The team develops a **unit test** for each class being developed, to exercise each

operation according to its specified functionality.

- ✓ The **user stories or use cases** are implemented by the increments being used as a basis for acceptance tests. The degree to which software implements the **output, function, and behavior of the test case** is a form of feedback.
- ✓ An agile XP team must have the courage (discipline) to design for today, recognizing that future requirements may change dramatically, thereby demanding substantial rework of the design and implemented code.

