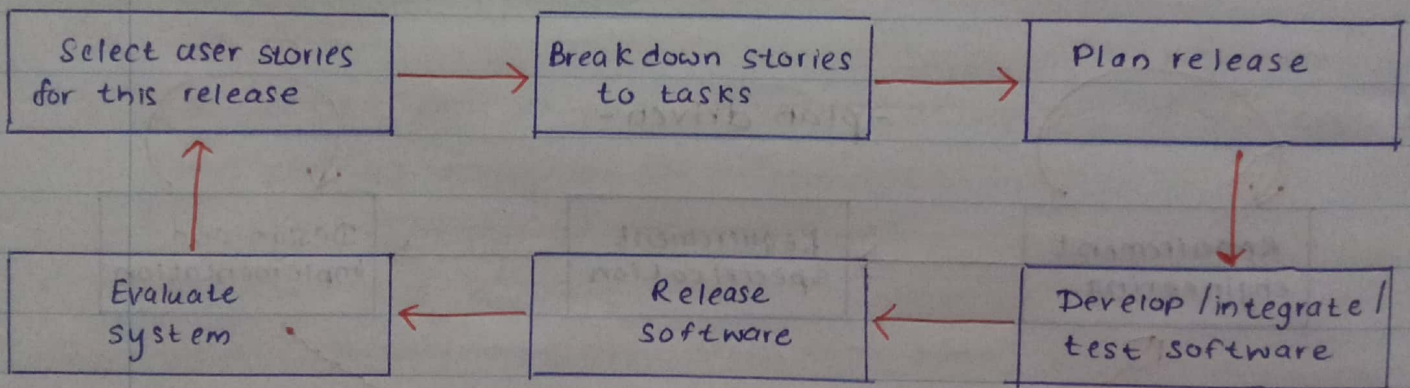# Agile development techniques.

- Extreme Programming
- Scrum
- Lean
- Kanban
- Feature Driven Development
- Dynamic System Development method
- Crystal family (clean room s/w)

EXTREME PROGRAMMING (XP)

- Iterative development approach
- Increments are delivered every two weeks.

Select user stories for this release	→	Breakdown stories to tasks	→	Plan release

Evaluate System	←	Release Software	←	Develop/integrate/test software

12 practises of XP

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 workweek
11. On site customer
* 12. Coding standards.

* not available in UCSC note.

① **The planning game**

> "planning activities for upcoming iteration."

• story cards — writes on indexed cards
both functional and non functional stories.

As an "_____ " I want to "_____ _____ _____ " Benefit "_____ "	Acceptance Criteria 1. 2. 3.
– front –	– back –

As an administrator I want to upload my music files to the website DB frequently.	Acceptance criteria 1 Please verify with mp3, wma, m4p, abc

– example –

* advantages
- reduction in time
- greater customer appreciation
- less guesswork.

② **Small Releases**

> " focus on more frequent release "

incremental development

• More critical functionalities are made available in early release

* advantages
- frequent feedback
- tracking is easy
- reduce chance of overall failure.

③ **Metaphor**

" the oral architecture of the system."

* advantages
  - can explain the system using common terms
  - reduction of unnesessary words and Jargon

④ **Simple Design**

" do as little as needed "

* advantages
  - easier to understand
  - time is not wasted
  - refactoring and collective ownership made possible
  - keeps the programmers on track.

⑤ **Testing**

" writes tests as development proceeds "

• use test automation framework
• test first development

* advantages
  - unit testing promotes testing completeness
  - test-first gives developers a goal
  - automation gives a suite of regression tests

⑥ Refactoring

"changing the code structure without changing its behaviour"

* advantages
    - keeps the code simple and maintainable
    - improve the quality

⑦ Pair Programming

"two developers work at single computer"

* advantages
    - informal review process
    - encourage refactoring

(margin note: people not process)

⑧ Collective Ownership

"all the developers take responsibility for all the code"

* advantages
    - enables refactoring
    - promotes to take the responsibility as a whole.

⑨ Continuous Integration

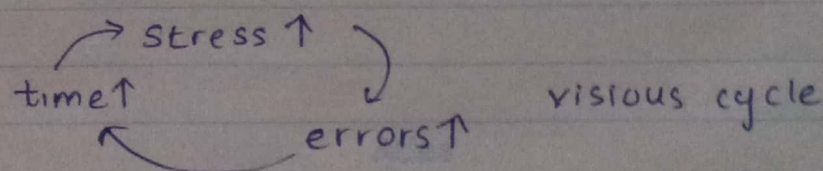"task is integrated to the system as soon as finished"

* advantages
    - reduce risk.

⑩ 40-hour workweek

" 8-work, 8-rest, 8-leisure "

people not process

time↑ → stress↑ ⟩
     ← errors↑   visious cycle

(11) **Onsite customer**

"customer should be available full time"

customer involvement

* **advantages**

- gives quick and continuous feedback.

(12) **Coding Standards.**

" code must be formatted to agreed standards "

Advantages of XP

- built in quality
- Overall simplicity
- programmer power   peop
- Customer power   customer reject കൊണ്ട
- synergy between practises.
  ബന്ധം.

Disadvantages of XP

standard ൽ3

- informal, little or no documentation
- contract issues.