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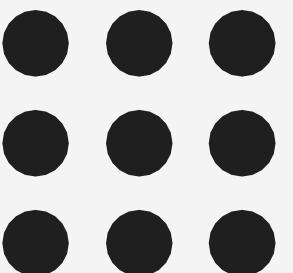
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Department of Artificial Intelligence and Data Science

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**SOWMIYA R/AP/AI&DS/23ITT203 OBJECT ORIENTED SOFTWARE
ENGINEERING/SNSCE**





Extreme Programming (XP)



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Extreme Programming (XP)



- Extreme programming (XP) is one of the most important software development frameworks of Agile models. It is used to improve software quality and responsiveness to customer requirements.
- The extreme programming model recommends taking the best practices that have worked well in the past in program development projects to extreme levels.



Extreme Programming (XP)



XP values

The set of five *values* that serve as a basis for all work performed as part of XP—communication, simplicity, feedback, courage, and respect. Each of these values is used as a driver for specific XP activities, actions, and tasks.

Communication:

To achieve effective *communication* between software engineers in order to convey important concepts and to get continuous feedback.

Simplicity:

XP focuses on the current needs instead of future needs to incorporate in the design. Hence the XP believes that the Software design should be simple.



Extreme Programming (XP)



XP values

Feedback:

The feedback for the software product can be obtained from the developers of the software, customers and other software team members.

Courage:

the strict adherence to certain XP practices require courage. The agile XP team must be disciplined to design the system today, recognize the future requirements and make the changes dramatically as per demand.

Respect:

By following the above states XP values the agile team can win the respect of the stakeholders.



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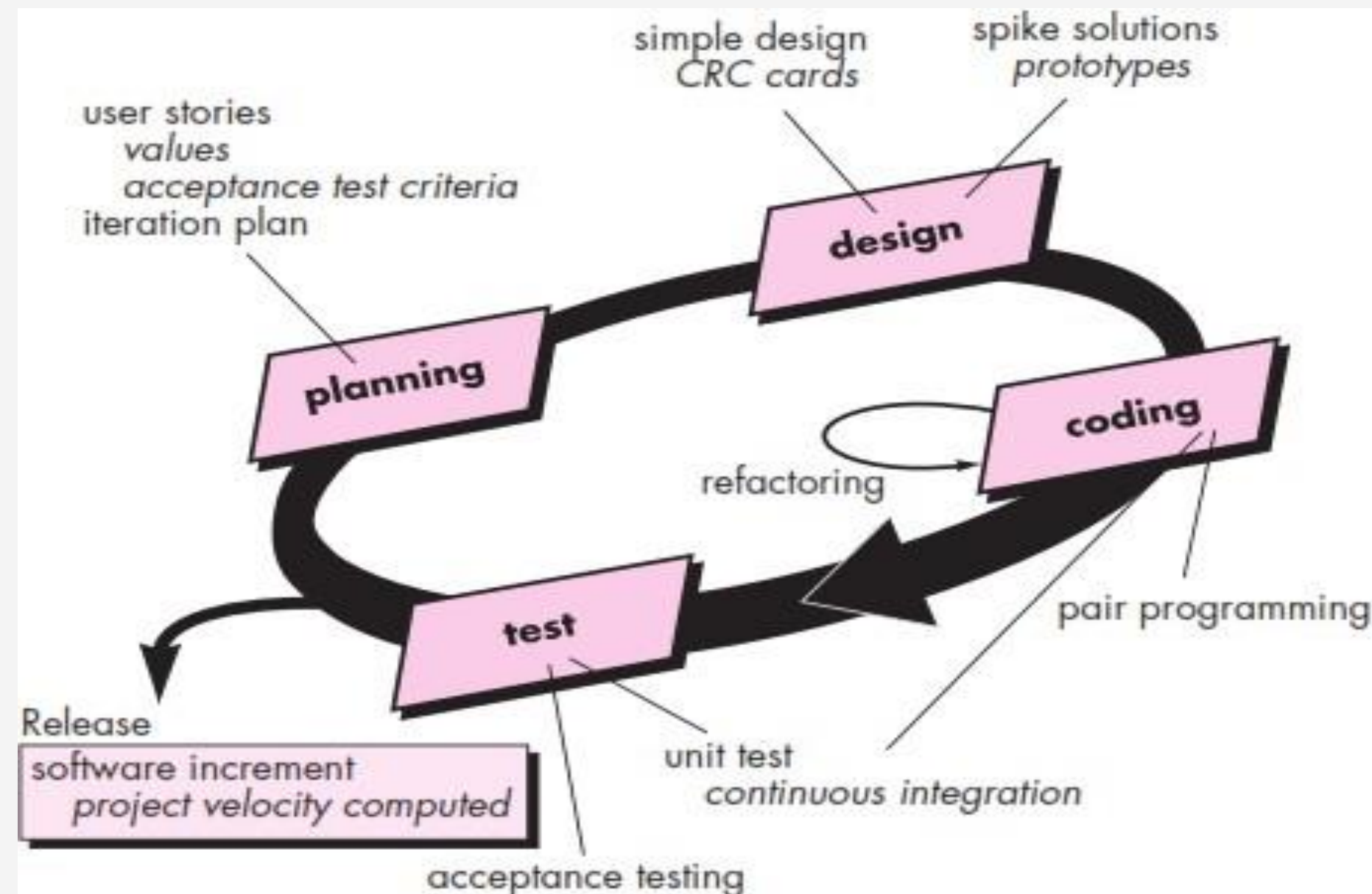


XP Process

The extreme programming process is explained as follows -

- Customer specifies and priorities the system requirements. Customer becomes or of the important members of development team. The developer and customer together prepare a **story-card** in which customer needs are mentioned.
- The developer team then aims to implement the scenarios in the story-card.
- After developing the story-card the development team breaks down the total work in **small tasks**. The efforts and the estimated resources required for these tasks are estimated.
- The customer priorities the stories for implementation. If the requirement changes then sometimes unimplemented stories have to be discarded. Then release the complete software in **small** and frequent **releases**.
- For accommodating new changes, **new story-card** must be developed. Evaluate the system along with the customer.

Extreme Programming (XP)





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Planning

- **User story-cards:** Instead of creating a large requirement document user stories are written by the customer in which what they need is mentioned.
- **Release planning:** A release plan for overall project is prepared from which the iteration plan can be prepared for individual iteration.
- **Small releases:** The developer breaks down the user Stories into small releases and a plan for releasing the small functionalities is prepared.
- **Iterative process:** Divide the development work into small iterations. Keep the iteration of nearly constant length. Iterative development helps in quick or agile development.
- **Stand up meetings:** The stand up meetings must be, conducted for the current outcomes of the project.



Extreme Programming (XP)



Designing

Simple design: Simple design always takes less time than the complex design. It is always good to keep the things simple to meet the current requirements.

Spike solution: For answering the tough technical problems create the spike solutions. The goal of these solutions should be to reduce the technical risks.

Refactoring: Refactoring means reductions in the redundancy, elimination of unused functionalities, redesign the obsolete designs. This will improve the quality of the project.



Extreme Programming (XP)



Coding

Customer availability: The most essential requirement of the XP is availability of the customer. In Extreme programming the customer not only helps the developer team but it should be the part of the project.

Paired programming: All the code to be included in the project must be coded by groups of two people working at the same computer. This will increase the quality of coding.

Collective code ownership: By having collective code ownership approach the everyone contributes new ideas and not any single person becomes the bottleneck of the project. Anyone can change any line of code to fix a bug or to refactor.



Extreme Programming (XP)



Testing

Unit testing: The test framework that contains automated test case suite is used to the code. All the code must be using unit testing before its release.

Continuous integration: As soon as one task is finished integrate it into the whole system. Again after such integration unit testing must be conducted.

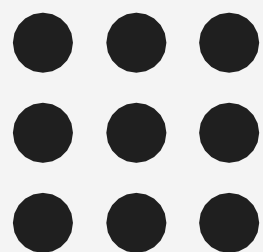
No overtime: Working overtime loses the spirit and motivation of the team. Conduct the release of the team. Conduct the release planning meeting to change the project scope or to reschedule the project.



Extreme Programming (XP)

Applications of Extreme Programming (XP): Some of the projects that are suitable to develop using XP model are given below:

- **Small projects:** XP model is very useful in small projects consisting of small teams as face to face meeting is easier to achieve.
- **Projects involving new technology or Research projects:** This type of projects face changing of requirements rapidly and technical problems. So XP model is used to complete this type of projects.



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