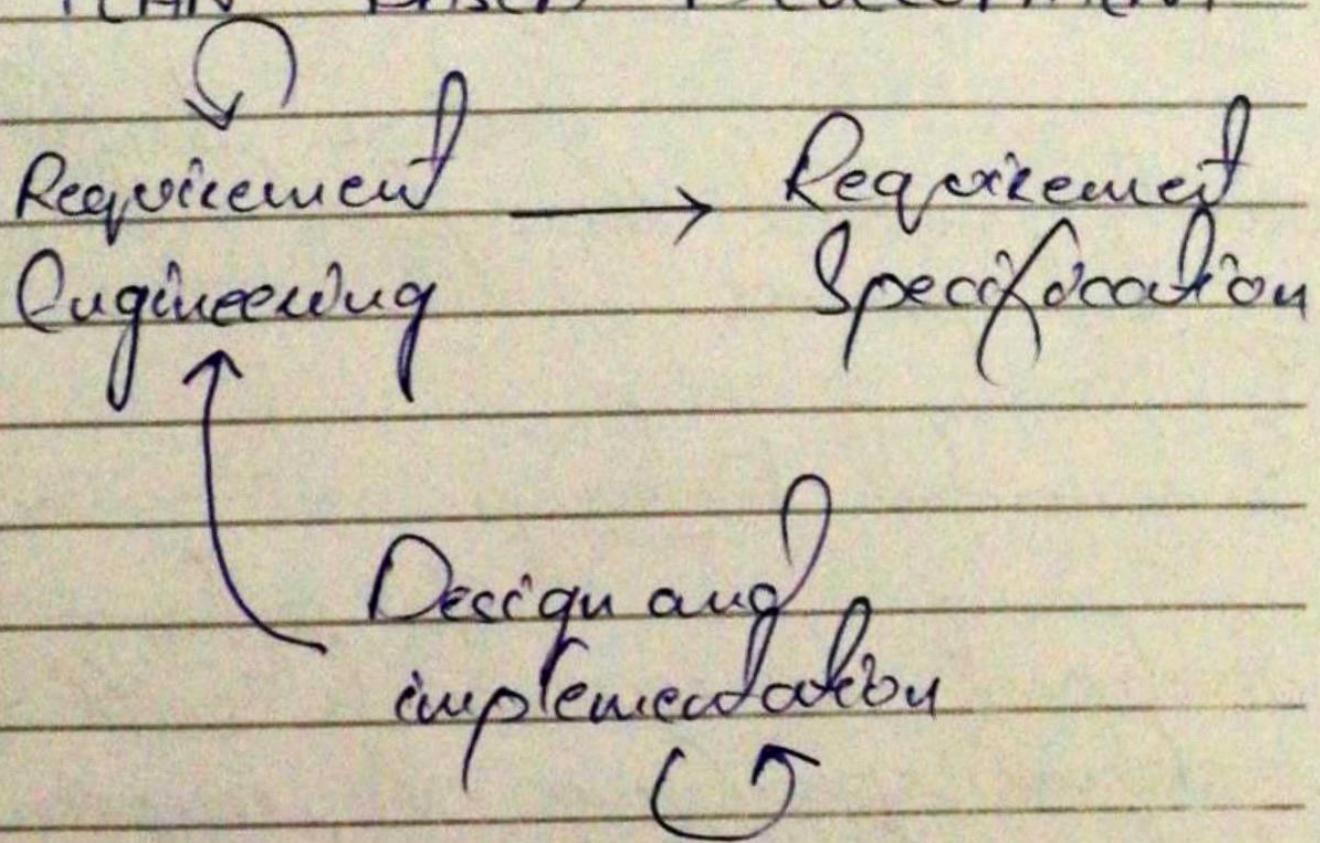
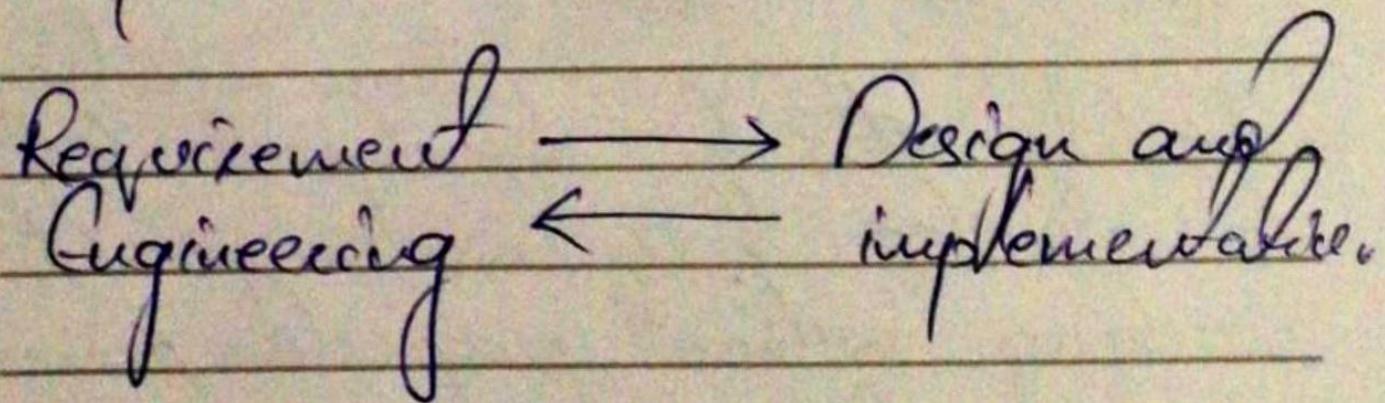


Date \_\_\_\_\_

## PLAN BASED Development



## Agile Development



# Principles Of Agile

## 1) Customer Involvement:

Customer should be closely involved throughout the development process.

## 2) Incremental Delivery:

The software is developed in increments with the customer specifying the requirements to be included in each step.

## 3) People not Processes:

Team members should ~~not~~ be developed off to develop their own ways of working without prospective processes.

## 4) Embrace Change:

System should support changes.

## 5) Maintain Simplicity:

Forces you simplicity in both development process.

Agile Method Approaches:

Agile methods can be:

People Centric:

way to create innovative solutions.

Product Centric:

Alternative to documents / process.

Market Centric:

Model to maximize business value.

## Two Types Of Development

What are differences:

Product Development:

Small size software  
x Medium size software

Custom System Development:

Customer fully involved in development process.

Not lot of roles and  
and expectations extend

# Agile Twelve Agency Principle

- 1) Highest priority to satisfy customer and end consumer.
- 2) Welcome changing requirements, even in late development.
- 3) Deliver working software frequently, from couple of weeks to a month.
- 4) Business people and Developers must work together.
- 5) Build projects around motivated individuals. Give them support, environment and trust they need.
- 6) Most effective way of conveying information is face to face conversation.

- 7) Working software is primary means of progress.
- 8) Agile process improve promote sustainable development.
- 9) Continuous attention to technical excellence and good design enhance agility.
- 10) Simplicity , the art of maximizing amount of work not done, was essential.

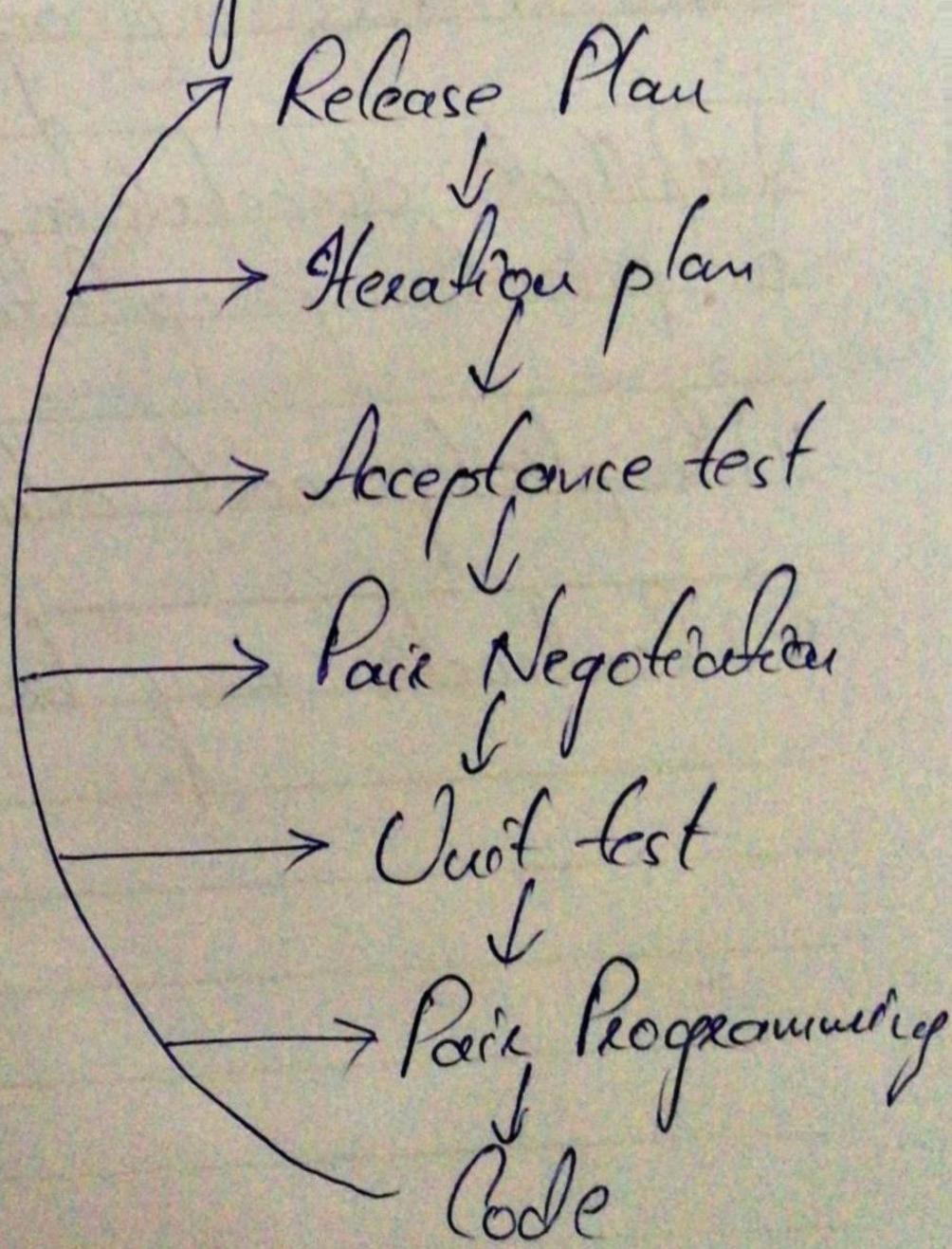
# Problems With Agile

- 1) Difficult in keeping interest of involved customers.
- 2) Disputed team members with characteristics of agility.
- 3) Multiple stakeholders (Difficult in prioritizing updates)
- 4) Complexity cost extra work.
- 5) Conflicts may be problem.

# Agile Methods

- 1) Extreme Programming
- 2) Scrum

## XP Programming



# XP And Agile Principles

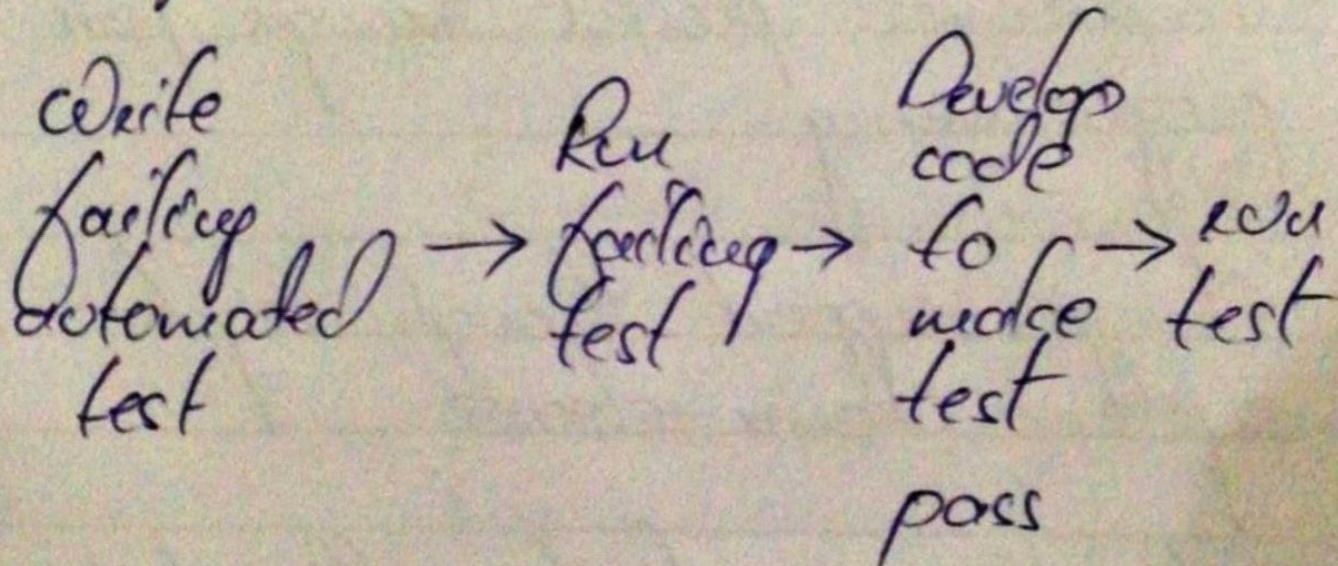
- Incremental development is supported through small frequent system releases
- Full time customer involvement with the team
- People not process through pair programming
- Changes support through regular system changes releases.
- Stability simplicity through constant refactoring of code.

# XP (Test first Programming)

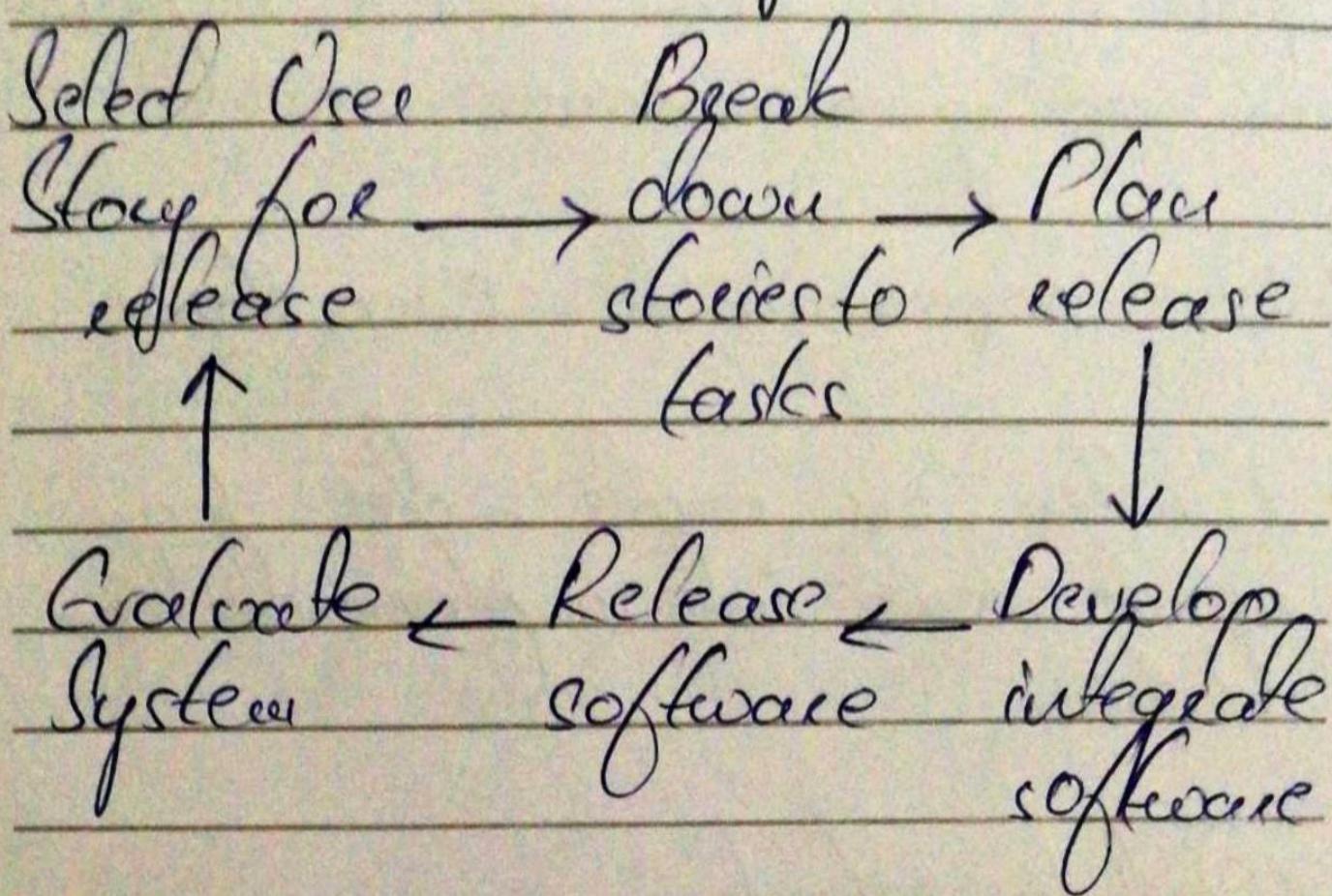
Instead of following natural path:

Develop code → Write tests → run tests

The practice of Test first programming.



# XP Release Cycle



- 1) Pair Programming
- 2) Simple Design
- 3) Small release
- 4) Test first development
- 5) Refactoring
- 6) Incremental planning

- In XP, a customer or user is a part of XP team and is responsible in making decisions.
- User requirements = User stories
- Write user cards, dev-figs break down into implementation tasks.

What is refactoring?  
Changing structure of code without changing its behaviour.  
Ex:

Renaming  
Extract  
Inline  
Method injection  
Pull up / push down

## Testing Preferences

- Programmers prefers programming
- Taking short cuts when writing tests.
- Writing incomplete tests that do not check for all possibilities
- Difficult to judge completeness of set of tests.

# PAIR PROGRAMMING

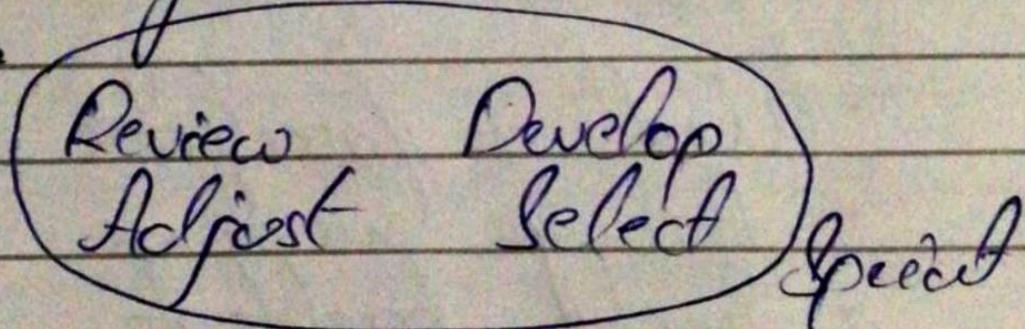
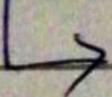
- Two people working together at a single computer.
- A review process.
- Two people working together, it will be much higher in quality.
- Sit together at same workstation.
- Pairs created dynamically, so that all team members work with each other during development process.
- Helps when one member leaves the job.

# Scrum

Generally agile approach but focus of managing iterative development rather than specific agile practices.

Project manager replace with scrum master.

Planning and architecture



Closure

- Planning And Architecture:  
Establish objectives and design architecture.
- Sprint Cycles:  
Each sprint develops increment of system.
- Closure:  
Wrap up of project.

Scrum Master:

- Work as facilitator
- Arrange meetings
- Track backlogs
- Manages communication

## Benefits:

- Product Divide Into Chunks:
  - Manageable
  - Understandable
  - Requirement does not hold progress
- Transparency:
  - Visible to everyone
  - improved communication
- Delivery:
  - On time
  - feedback
  - trust and project success

## Terminologies:

- 1) Product backlog:

list of todo items

Sprint:

A daily meeting that review progress and priorities work need to be done by that day.

Sprint:

A developmental iteration.  
2-4 weeks long.

Velocity:

An estimate of how much product backlog can cover in a single sprint.