# Assignment - 1

## Software Engineering and Project Management

Q.1 Why SEPM?

→ It is systematic, disciplined, cost-effective techniques for software development.

→ It is a "Layered Technology"

1. Quality Focus
   - → degree of goodness
   - → Correctness
   - → maintainability
   - → Usability
2. Process
   - → "What" to do
   - → Deals with Activities, actions & Tasks
3. Methods
   - → Deals with "How to" implement
   - → Communication
   - → Requirement & Design Handling analysis
   - → Using of Programming tools
   - → Testing & Support.
4. Tools
   - → Environment
   - → Helping hand of Process
   - → Automated Support
   - → Used for Code, design, test or sell.

## 8.2 (1) Waterfall Model

- Feasibility Study
- Req. Analysis & specification
- Design
- Coding & Unit testing
- System testing & Integration
- Maintenance

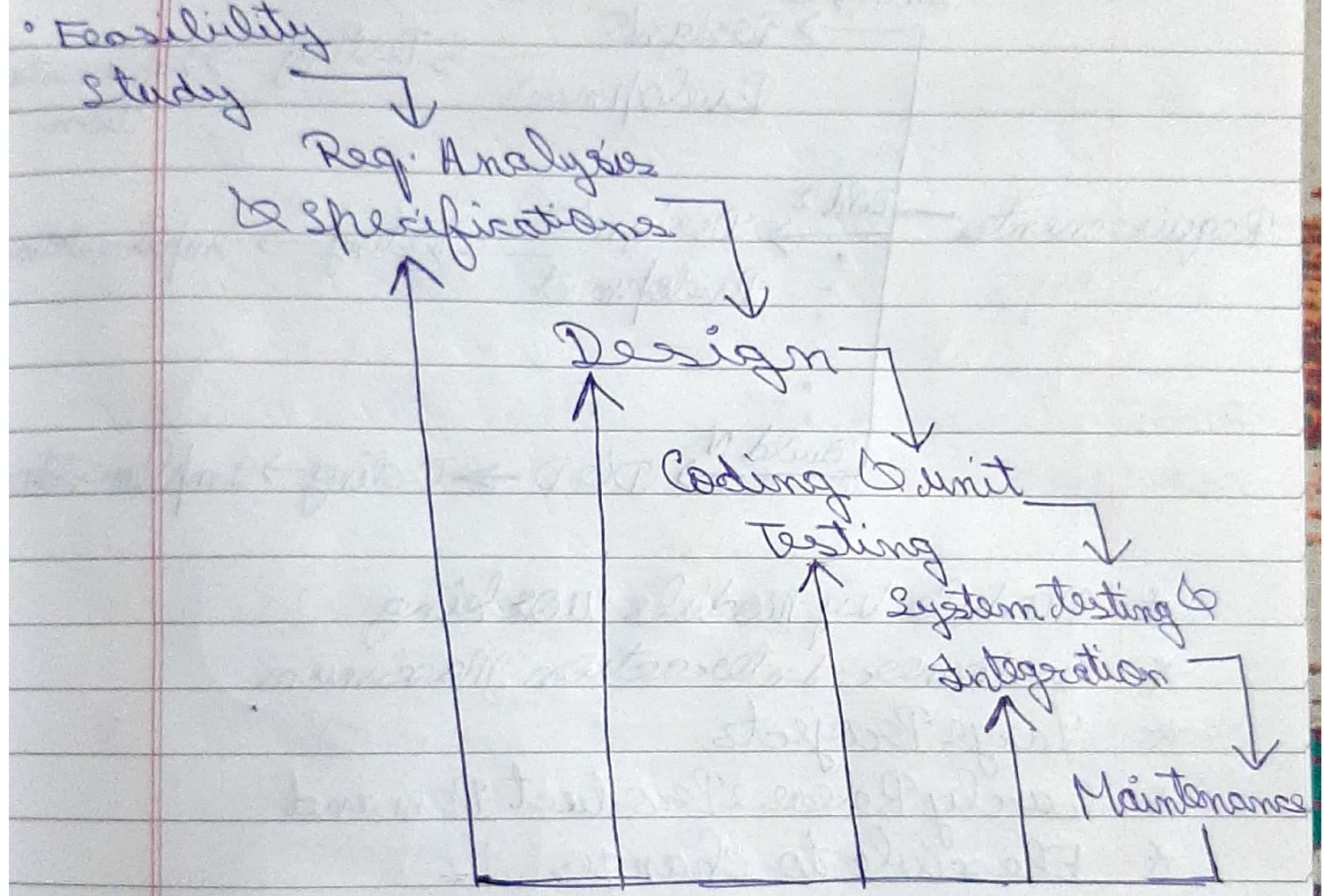
### Advantages

* Base Model
* Simple & easy
* Small projects

### Disadvantages

* No feedback
* No experiment
* No Parallelism
* High risk
* 60% efforts Maintenance

## (2.) Iterative Model



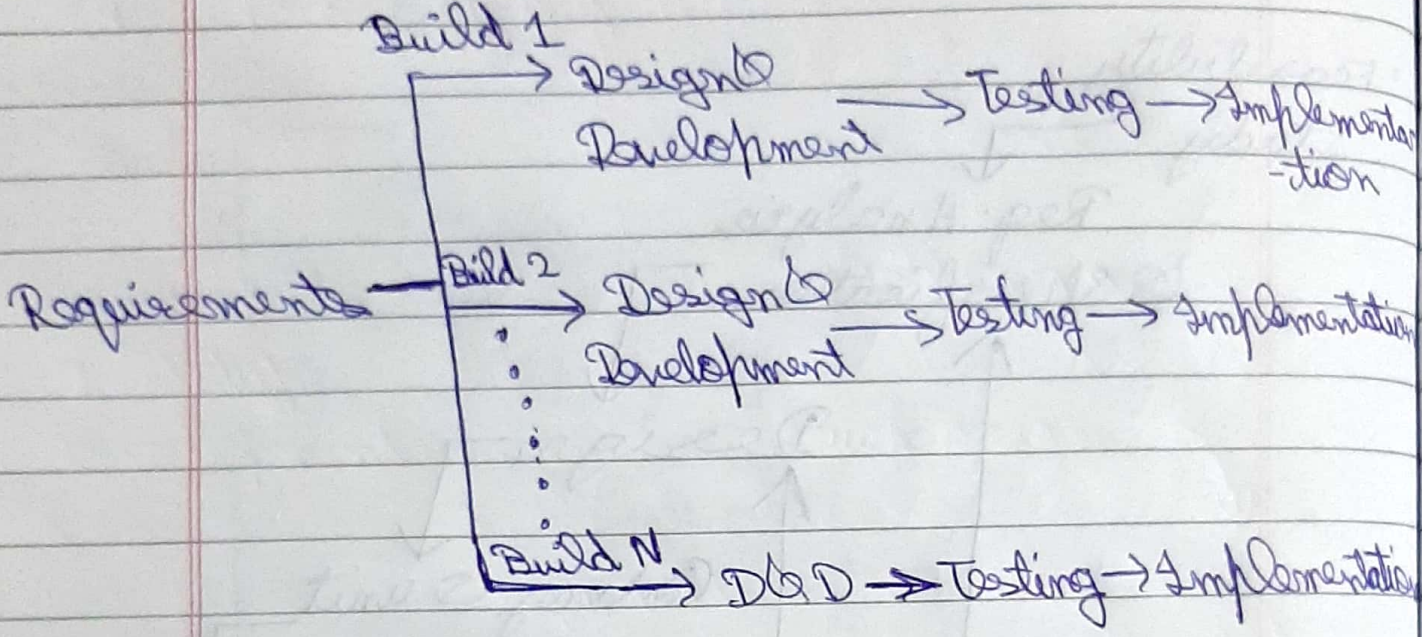

### Advantages

* Base Model
* Simple & easy
* Small projects
* Feedbacks

### Disadvantages

* No phase overlapping
* No Intermediate delivery
* Rigid (No Changes)
* Less Customer interaction

## ③ Increamental Model




* Module by module working
* Customer Interaction Maximum
* Large Projects
* Early Release Product Demand
* Flexible to changes.

### Advantages

* Work with small size time
* Initial product delivery is faster
* Can Accomodate changes
* Customer Response/ Feedback is Considered

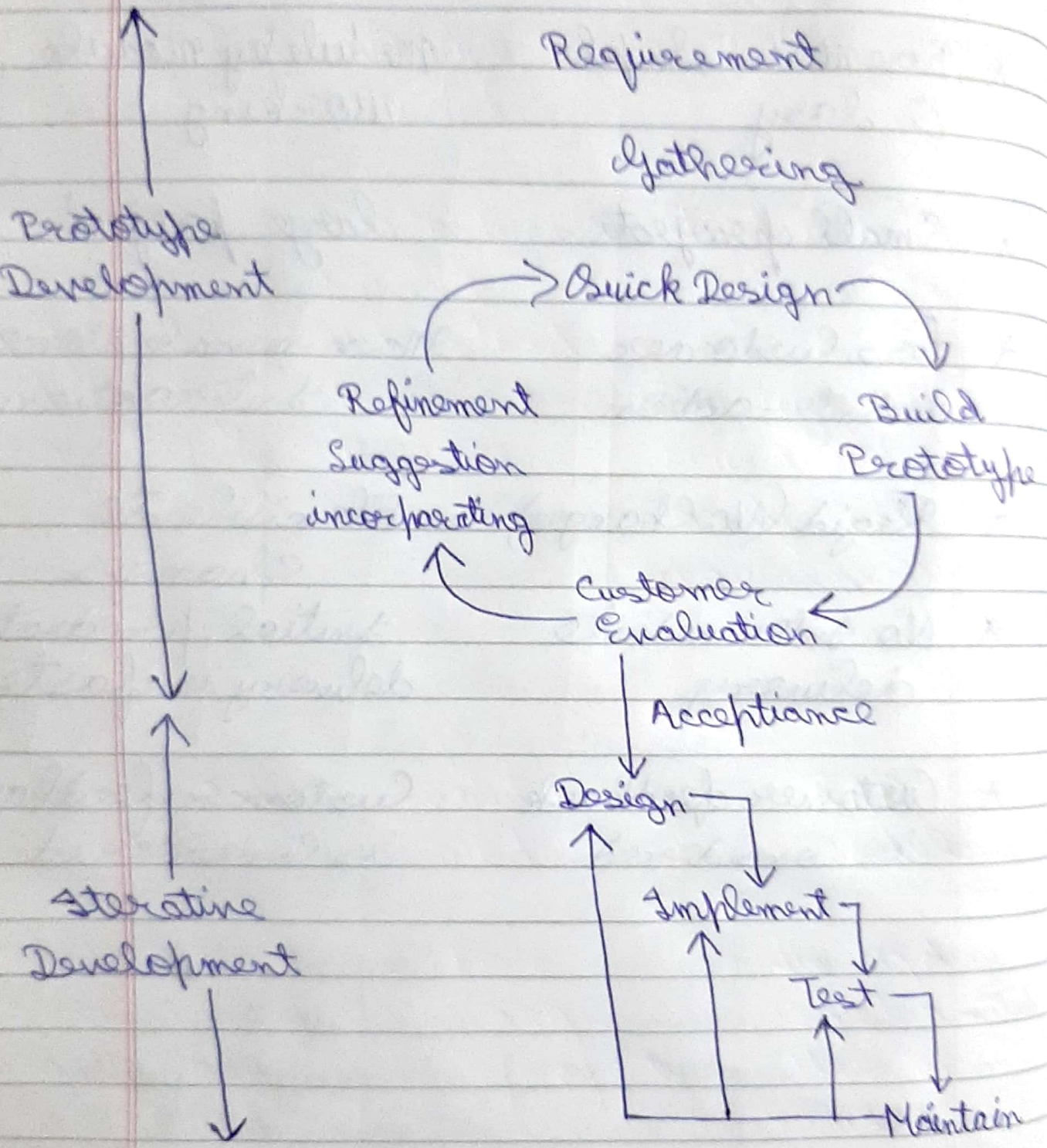
### Disadvantages

* actual Cost may exceed the estimated cost
* System broken into small fragments

Q.3

| | Iterative Model | Incremental Model |
|---|---|---|
| * | Base model, Simple & easy | Module by module working |
| * | Small projects | large projects |
| * | Less Customer interaction | Maximum Customer interaction |
| * | Rigid (No Changes) | Flexible to changes |
| * | No intermediate delivery | Initial product delivery is faster |
| * | Customer feedback is considered | Customer feedback is considered |

## (4) Prototyping Model




* Best if Customer is not clear with idea
* Throwaway model
* Good for Technical and requirement risk
* Increase in Cost of Development

## (5) Time Boxing model

In time Boxing model, development is done iteratively as in the iterative enhancement model. In this each iteration is done in a timebox or fixed duration. The functionality to be developed is adjusted to fit the duration of the timebox. Each timebox is divided into a sequence of fixed stages where each stage performs a clearly defined task that can be done independently. This model also requires that the time duration of each stage is approximately equal ~~to~~ so that ~~time~~ pipelining concept is employed to have the reduction in development time and product release.

### Advantages

* Speeds up the development process & shortens the delivery time.
* Well suited to develop projects with a no. of features in short time period

### Disadvantages

Project management becomes more complex

Not suited to projects in which entire dev. work cannot be divided into multiple iterations of almost, equal duration.

classmate
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## Difference :-

| Classical Waterfall Model | Iterative Model | Prototype model |
|---|---|---|
| Basic, Rigid, Inflexible, Not for real projects | Basic, Problem is well understood, flexible (little bit) | Used when user requirements not clear, Costly, High user involment, Reusability, No early look on requirements |