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5. Avoid making custom-made software
- It's better and smarter to use the code written and tested by others than to write the code completely from scratch.
  - Outsourcing code leads to faster development and lesser bugs.
  - Code can be written from scratch only when outsourcing is not possible.
6. Conduct a post-mortem analysis
- Once we complete a project, we must conduct a post-mortem analysis to find out what went wrong.
  - Establish a consistent mechanism for extracting lessons learnt for each project.
  - Evaluate the planned and actual schedules, collect and analyze software project metrics.
  - Get feedback from team members and customers and record findings in written form.
  - Try to roll out the promised features, which could not be implemented, as the first update.

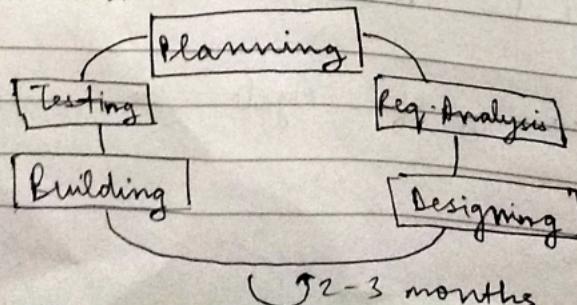
## # AGILE DEVELOPMENT MODEL

- The meaning of "Agile" is swift or versatile

- Agile methodology is a practice that promotes continuous iteration of development and testing throughout the software development life-cycle of the project.
- Both developing and testing activities are concurrent, unlike the waterfall model.
- It is a combination of iterative and incremental process models.
- Each incremental part is developed over an iteration. Each iteration is intended to be small and easily manageable and that can be completed within a couple weeks only.
- At a time one iteration is planned, developed and deployed to the customers. Long term plans are not made.

### Layouts

- The tasks are divided to time boxes to deliver specific features for a release.
- Plans regarding the number of iterations, the duration and the scope of each iteration are clearly defined in advance.



## Phases of Agile Model

- Requirements gathering: Brainstorming is done among the developers. Requirements are defined. Business opportunities, time and effort are explained. Based on this information, technical and economic feasibility are evaluated.
- Design the requirements: The user flow diagram or the high level UML diagram are used to show the work of new features and shows how it will apply to the existing system.
- Construction / Iteration: Designers and developers start working on their project, which aims to deploy a working product. The product will undergo various stages of improvement, so it includes and <sup>minimal</sup> functionality.
- Testing: In this phase, the quality assurance team examines the product's performance and looks for the bug.
- Deployment: The team issues a product for the user's work environment.
- Feedback: The team receives feedback about the product and work through the feedback.

## Agile Manifesto Principles

- Individual and interactions: Self organization and motivation are important. Everyone should work to the best of their abilities. The employees should be able to realign their expertise as per the demand. Co-location and pair programming interactions are required.
- Working Software: Demo working software is considered the best means of communication with the customers to understand their requirements, instead of just depending on documentation.
- Customer Collaboration: As the requirements cannot be gathered completely in the beginning of the project due to various factors, ~~continuous~~ <sup>continuous</sup> customer interaction is very important to get proper product requirements.
- Responding to change: Agile development is focused on quick responses to change and continuous development.

Testing Method Methods are Scrum, Crystal Methodalogies, dynamic software development method, feature driven development, lean software development and extreme programming.

## When to use Agile Model ?

- When frequent changes are required i.e. the requirements of the customers keeps changing frequently . Agile model costs less and time for this.
- When a highly qualified and experienced team is available. It is the driving factor of agile model .
- When a customer is ready to have a meeting with a software team all the time.
- Project size should be small.

### Agile Model

① Incremental delivery process where each incremental developed part is done in an iteration.

② Progress measured in terms of developed & delivered functionalities.

③ More flexible

④ Customer interaction high

⑤ Lack of proper documentation

### Waterfall Model

① Follows a sequential model.

② Progress measured in terms of completed & reviewed artefacts.

③ More rigid.

④ Customer interaction low

⑤ Documentation is important.