# ITERATIVE MODEL

- In the Iterative model, iterative process starts with a simple implementation of a small set of the software requirements and iteratively enhances the evolving versions until the complete system is implemented and ready to be deployed.

- An iterative life cycle model does not attempt to start with a full specification of requirements.

- Instead, development begins by specifying and implementing just part of the software, which is then reviewed to identify further requirements.

- This process is then repeated, producing a new version of the software at the end of each iteration of the model.

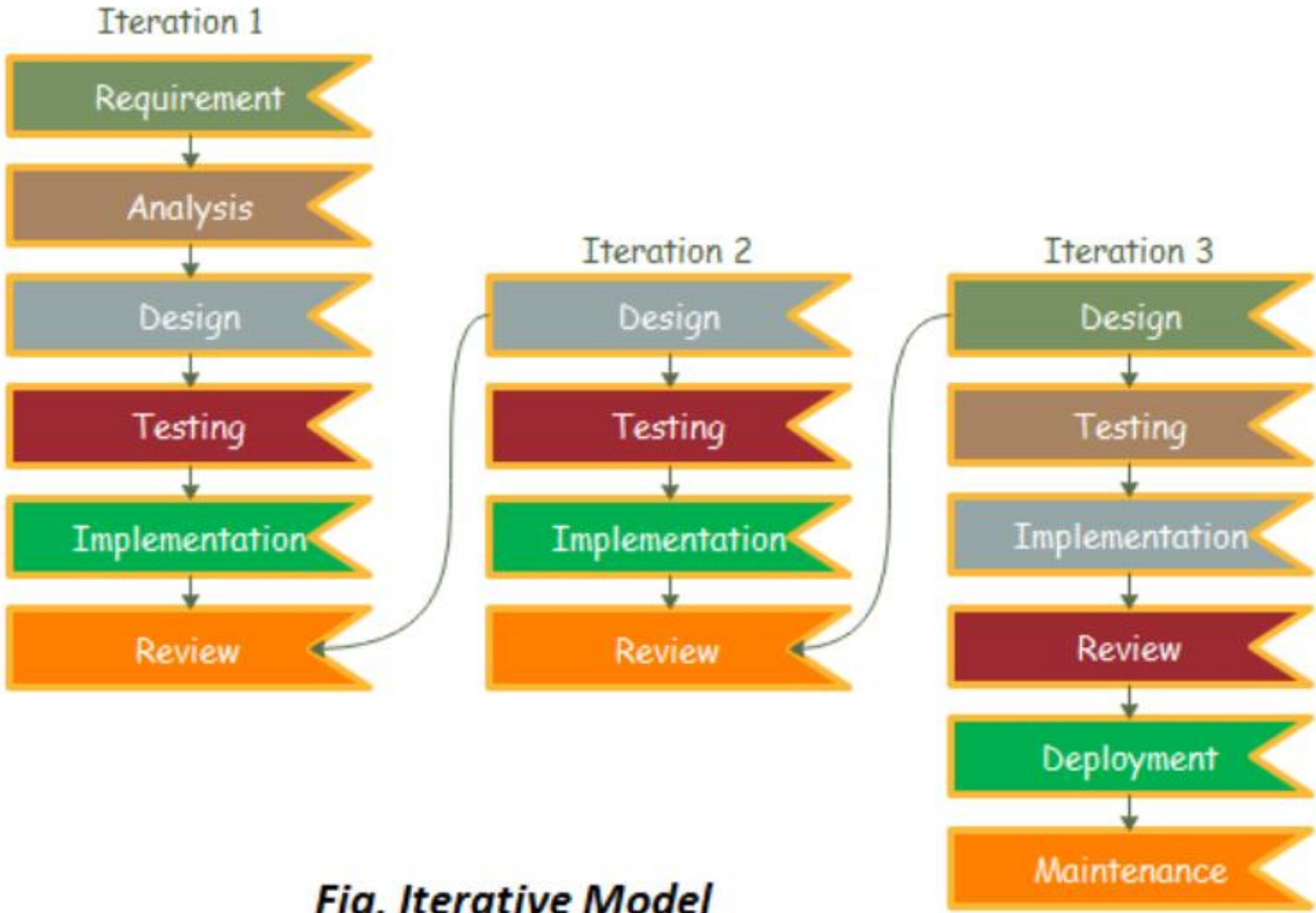


***Fig. Iterative Model***

- The various phases of Iterative model are as follows:

- **1. Requirement gathering & analysis:** In this phase, requirements are gathered from customers and check by an analyst whether requirements will fulfil or not. Analyst checks that need will achieve within budget or not. After all of this, the software team skips to the next phase.

- **2. Design:** In the design phase, team design the software by the different diagrams like Data Flow diagram, activity diagram, class diagram, state transition diagram, etc.

- **3. Implementation:** In the implementation, requirements are written in the coding language and transformed into computer programmes which are called Software.
- **4. Testing:** After completing the coding phase, software testing starts using different test methods. There are many test methods, but the most common are white box, black box, and grey box test methods.
- **5. Deployment:** After completing all the phases, software is deployed to its work environment.
- **6. Review:** In this phase, after the product deployment, review phase is performed to check the behaviour and validity of the developed product. And if there are any error found then the process starts again from the requirement gathering.
- **7. Maintenance:** In the maintenance phase, after deployment of the software in the working environment there may be some bugs, some errors or new updates are required. Maintenance involves debugging and new addition options.

- **When to use the Iterative Model?**

1. When requirements are defined clearly and easy to understand.
2. When the software application is large.
3. When there is a requirement of changes in future.

- **Advantage(Pros) of Iterative Model:**

1. Testing and debugging during smaller iteration is easy.
2. A Parallel development can plan.
3. It is easily acceptable to ever-changing needs of the project.
4. Risks are identified and resolved during iteration.
5. Limited time spent on documentation and extra time on designing.

- Disadvantage(Cons) of Iterative Model:

1. It is not suitable for smaller projects.
2. More Resources may be required.
3. Design can be changed again and again because of imperfect requirements.
4. Requirement changes can cause over budget.
5. Project completion date not confirmed because of changing requirements.

# INCREMENTAL MODEL

- Incremental Model is a process of software development where requirements divided into multiple standalone modules of the software development cycle.
- In this model, each module goes through the requirements, design, implementation and testing phases.
- Every subsequent release of the module adds function to the previous release.
- The process continues until the complete system achieved.

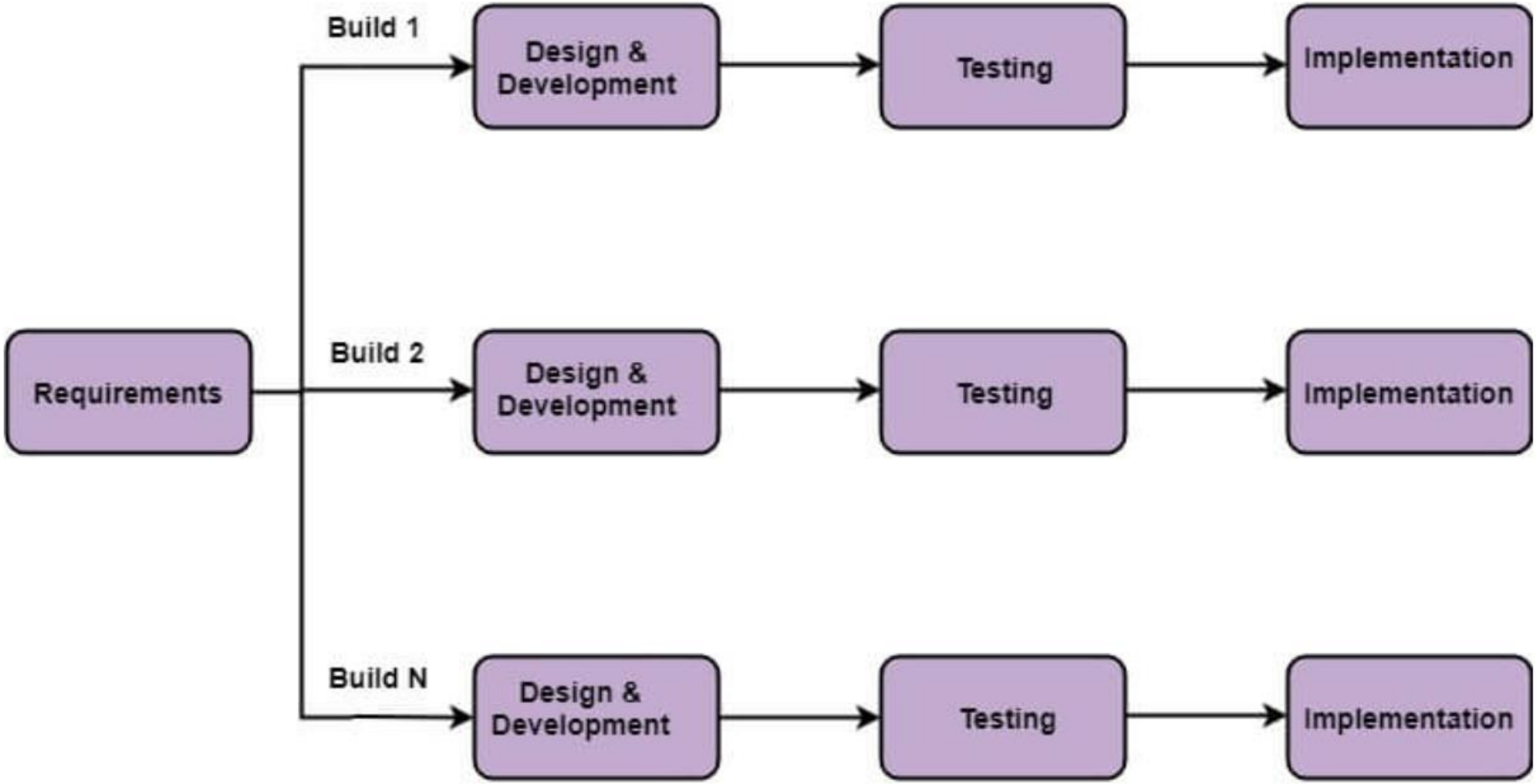


Fig: Incremental Model

## The various phases of incremental model are as follows:

- **1. Requirement analysis:** In the first phase of the incremental model, the product analysis expertise identifies the requirements. And the system functional requirements are understood by the requirement analysis team. To develop the software under the incremental model, this phase performs a crucial role.
- **2. Design & Development:** In this phase of the Incremental model of SDLC, the design of the system functionality and the development method are finished with success. When software develops new practicality, the incremental model uses style and development phase.
- **3. Testing:** In the incremental model, the testing phase checks the performance of each existing function as well as additional functionality. In the testing phase, the various methods are used to test the behavior of each task.

- **4. Implementation:** Implementation phase enables the coding phase of the development system. It involves the final coding that design in the designing and development phase and tests the functionality in the testing phase. After completion of this phase, the number of the product working is enhanced and upgraded up to the final system product

## When we use the Incremental Model?

- When the requirements are superior.
- A project has a lengthy development schedule.
- When Software team are not very well skilled or trained.
- When the customer demands a quick release of the product.
- You can develop prioritized requirements first.

## Advantage of Incremental Model

- Errors are easy to be recognized.
- Easier to test and debug
- More flexible.
- Simple to manage risk because it handled during its iteration.
- The Client gets important functionality early.

## Disadvantage of Incremental Model

- Need for good planning
- Total Cost is high.
- Well defined module interfaces are needed.