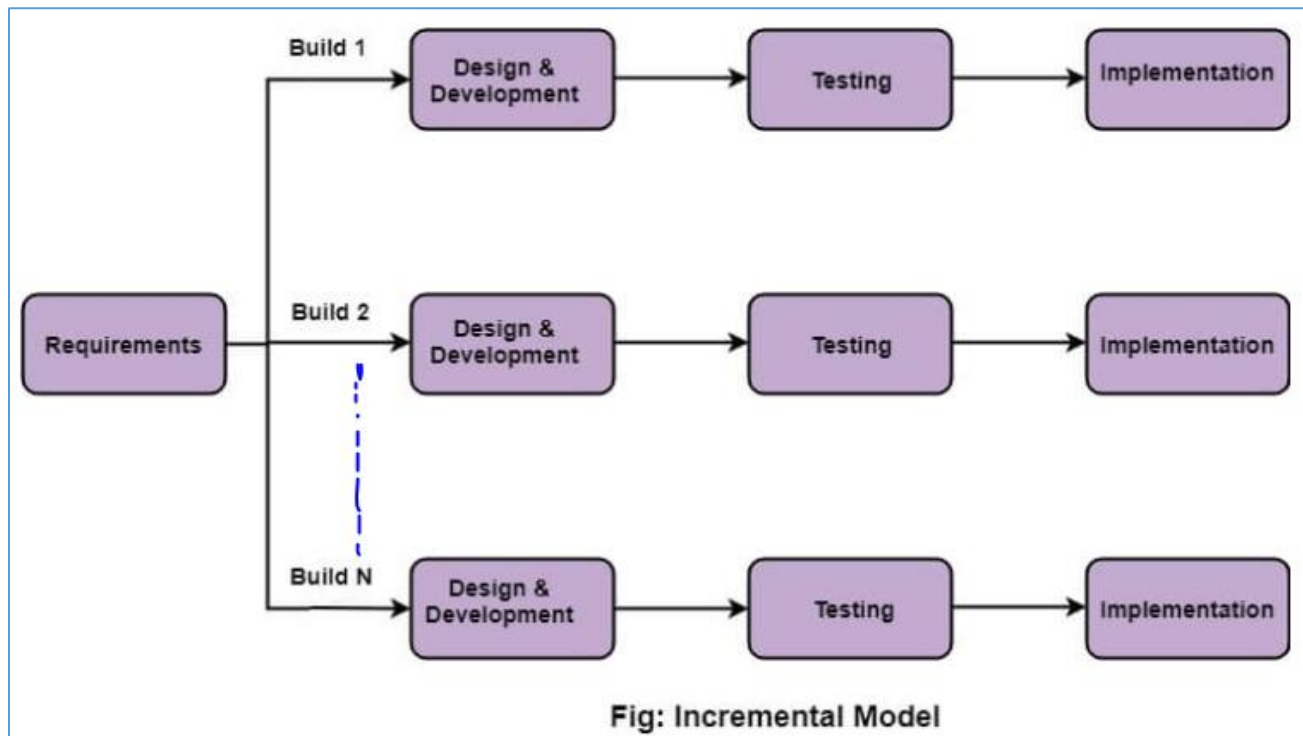


Topics:

3. Incremental Model
4. Spiral Model

3. 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.



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

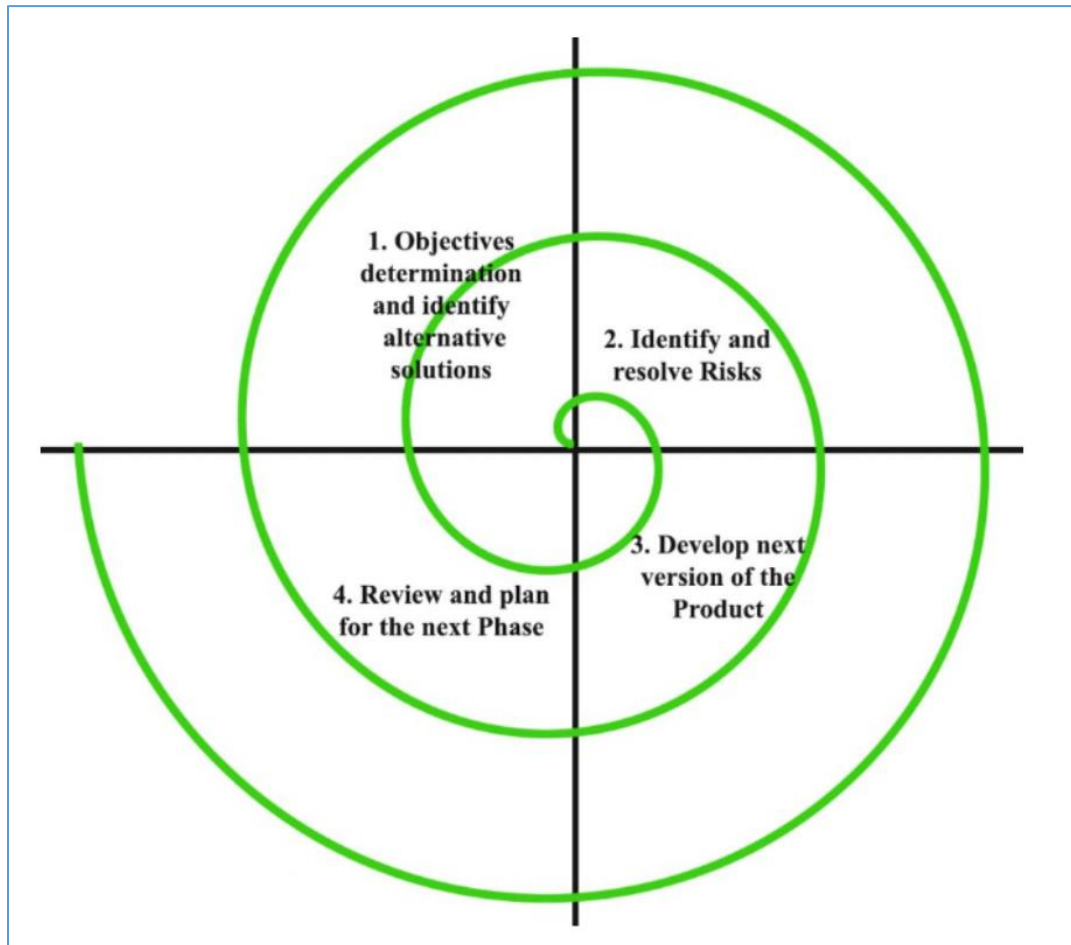
- Errors are easy to be recognized.
- Easier to test and debug
- More flexible.
- Simple to manage risk because it handled during its iteration.
- The Client gets important functionality early.

Disadvantage of Incremental Model

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

4. Spiral Model:

The spiral model is a software development life cycle (SDLC) method used for risk management that combines the iterative development process model with elements of the Waterfall model. **The spiral model is used by software engineers and is favored for large, expensive and complicated projects.**



The spiral model is also known as #MetaModel since it encompasses all other life cycle models.

Spiral Model Quadrant (Phases)

The following activities are carried out during each phase of a spiral model.

First Quadrant (Objective Setting)

- Identify the objectives of the phase.
- Examine the risks associated with these objectives.

Second Quadrant (Risk Assessment and Reduction)

- A detailed analysis is carried out for each identified project risk.
- Steps are taken to reduce the risks.

Third Quadrant (Development and Validation)

- Develop and validate the next level of the product after resolving the identified risks.

Fourth Quadrant (Review and Planning)

- Review the results achieved so far with the customer and plan the next iteration.
- Progressively more complete version of the software gets built with each iteration around the spiral.

When to use Spiral Model?

- When deliverance is required to be frequent.
- When the project is large
- When requirements are unclear and complex
- When changes may require at any time
- Large and high budget projects

Advantages

- © **Suitable for large projects:** It is suggested to use the spiral model for large and complex projects.
- © **Risk handling capability:** Project which is complex and large are prone to unknown risk and error.

Disadvantages

- © **Complex:** It is one of the most complex SDLC models.
- © **Documentation:** is more as it has many loop iteration.
- © **Expensive:** It is not suitable for small projects.
- © **Management:** is more complex.