**Case study of software development life cycle model**

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| **Model** | **Approach** | **Stage** | **When it uses** | **Advantages** | **Disadvantages** |
| Waterfall model | It is a Sequential In order | 1.Requirements  2.Analysis  3.Design  4.Coding/Implementation  5.Testing  6.Operation/Deployment  7.Maintenance | When requirements are very well known clearly & fixed | Suitable for large system and teams | Longer length in each iteration or increment |
| Iterative model | To become the final product or software | 1.Requirements  2.Design & Development  3.Testing  4.Implementation | When requirem  ents are defined  clearly & easy  to understand | Appropriate for  Stable  development  environment | Lack of user involvement throughout the life cycle of the product |
| Spiral model | Sequential development process I pre-defined phases | 1.Identification  2.Design  3.Construct/Build  4.Evaluation & Risk Analysis | It favored for large, expensive & complicated projects | Flexible umber changes are allowed I spiral model | It is not suitable for the small & low-risk product because its cloud be costly for a smaller project |
| V – model | It executes of processes happens in a sequential manner in a V-shape | 1.Requirements & Analysis  2.System Design  3.Archeitectural Design  4.Module Design  5.Coding phrase  6.Unit testing  7.Integration testing  8.system testing  9.Acceptance testing | Small projects where project requirements are clear | It provides a proactive error tracking feature for developer | Software is developed during the phrase of implementation, so no initial prototype of the software are produced |
| RAD Model  (Rapid Application Model) | Based on prototyping & iterative development with no specific planning involved | 1.Business Modelling  2.Data Modelling  3.Process Modelling  4.Application Modelling  5.Testing &turning | When a system can be modularized to be delivered in an incremental manner | Requirements can be changed at the time | Need strong team collaboration |
| Incremental Model | A process of s/w development where the product is design, implemented & tested incrementally | 1.Requirements Analysis  2.Design & Development  3.Testing  4.Implementation | When the requirements of the complete system are clearly defined and understood | The model is less costly compared to others | Rectifying a problem in one unit requires correction in all the unit & customer a lot of time |
| Agile model | Collaborative decision making between requirement & solution teams, & a cyclical iterative progression of producing working software | 1.Requirements Analysis  2.Design  3.Testing  4.Planning  5.coding | When the product vision or features are not well defined | Customer satisfaction by rapid continuous delivery of useful software | There is lack of emphasis on necessary designing & documentation |
| Big-Bang model | SDLC model where we do not follow and specific process | Very little or no planning | Small project with one or two developers working together & is also useful for academic or practice project | Very flexibility to developers | Very High risk & uncertainty |