Process model

1) Big-Bang Model -

- ✔ It is software development life cycle model (SDLC).
- ✔ This model is used for small process with small team.
- ✔ As the model is small it required little planning.
- ✔ Input for the model is money ,resources and efforts.
- ✔ Output is developed software.
- ✔ Any changes come they may or may not satisfy by customer.

Advantages :

- ➔ Simple model.
- ➔ Little or no planning required.
- ➔ Easy to manage
- ➔ Less resources are required.

Disadvantages :

- ➔ Very high risk.
- ➔ Not good for complex projects.
- ➔ It's requirements are misunderstood.

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2) Code – and –fix Model -

- ✔ It ideentify product that must be tested before release.
- ✔ If there is any bug in that then software send back for fixing.
- ✔ If bugs are not remove they send it again and again upto getting software without error.

Advantages :

- ➔ Suitable for small project.
- ➔ Very less planning required.

Disadvantages :

- ➔ Changes are diffuilt to solve.
- ➔ Timing is not specifyied for delivering software.

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3) Waterfall Model -

- ✔ This model is also known as linear sequential model.
- ✔ Step by step all levels are completed.
- ✔ There is no overlapping between levels.

- ✔ Acknowledge or feeback is taken after each phase which ensure all levels are work properly.
- ✔ After completion of all parts testing phase occur.
- ✔ Phases of waterfall model :
  - ◆ Communicaton – between customer and developer.
  - ◆ Planning – complete estimation of project.
  - ◆ Modeling – complete requirements and modeling of algorithm.
  - ◆ Construction – code generation and testing part
  - ◆ Deployment- delivering of product to customer.

Advantages :

- ➔ Simple and easy to understand.
- ➔ All requirements are known at beginning.
- ➔ Take those project whose quality is important than cost.

Disadvantages :

- ➔ This model not good for complex project.
- ➔ Chnages are not permitted.

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4) <u>V Model</u> -

- ✔ V model also known as Verification and Validation model.
- ✔ Processes are excuted sequentially.
- ✔ Every phase complete it’s excution before execution of next phase.
- ✔ Phases of V model -
  - ◆ Requirements - understood by customer point of view.
  - ◆ System Design -study about how requirements are use.
  - ◆ Architecture Design-software is created on basis of design.
  - ◆ Module Design- separately design each module.
  - ◆ Coding Phase-actual model is get coded.

Adavantages :

- ➔ Many testing activities are done in starting so it’s saves timing.
- ➔ Error also evaluated at starting so less chances of error.

Disadvantages :

- ➔ Not suitable for large projects.
- ➔ If there is no constant requirements then model is not well perform.

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5) <u>Incremental Model</u> -

- ✔ It combines element of waterfall model.
- ✔ Output of each increment build the product and sumitted near customer to get feedback.
- ✔ Next level model is based on feedback.
- ✔ The process is repeated until the product is completed.
- ✔ Phases of incremental model :
  - ◆ Communicaton – between customer and developer.
  - ◆ Planning – complete estimation of project.
  - ◆ Modeling – complete requirements and modeling of algorithm.
  - ◆ Construction – code generation and testing part.
  - ◆ Deployment- delivering of product to customer.

Advantages :

- ➔ Flexible because of low cost.
- ➔ Easier to test and debug.
- ➔ Customer can gives feedback at every increment so product is design according to customer requirement.

Disadvantages :

- ➔ Cost may be change.
- ➔ Model required very complete planning.
- ➔ Initial phase take more time.
- ➔ Demand of customer at every increment may be increases the cost.

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6) <u>RAD Model</u> -

- ✔ It is Rapid Application Development Model.
- ✔ Take less time.
- ✔ Requirements are divided into groups.
- ✔ Planning is more important.
- ✔ Phases of RAD model -
  - ◆ Business Modeling-Complete business analysis.
  - ◆ Data Modeling- relationships between object is define.
  - ◆ Process Modeling-process description is created.
  - ◆ Application Generation- actual system is build
  - ◆ Testing and turnover- different tests are applied to check model/

Advantages :

- ➔ Flexible.
- ➔ Less chances of miss the requirements.

Disadvantages :

➔ Feedback is required at every phase.
➔ Not good for large project.

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7) Agile Model -

- ✔ Combination of incremental and iterative model.
- ✔ Breaks product into indivitual iterations.
- ✔ This model focus on user satisfaction.

Advantages :

➔ Customer are satisfied.
➔ Regular Delivery of working software.
➔ Face to face interaction between customers.

Disadvantages :

➔ Totally depend on user interaction so because of thus if customer is not clear with idea they it may cause problem.
➔ Less documentation.

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8) Iterative Model -

- ✔ A large application is divided into small parts.
- ✔ Parts are excuted one by one until it give new version of model.
- ✔ Every iteration phases are repeated
- ✔ Phases of Iterative Mode-
  - ➔ Requirement
  - ➔ Design
  - ➔ Implementation and test phase
  - ➔ Evaluation

Advantages :

➔ Easy to test.
➔ Produce working software.
➔ Debugging easy.
➔ Low cost.

Disadvantages :

➔ Cost system architecture.
➔ Small projects are not handled.

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9) Spiral Model -

- ✔ It is combination of prototype and sequential or waterfall model
- ✔ Model working start with a design goal.

- ✔ Ends with client review.
- ✔ Development team adds the functionality in every spiral till the application is ready.
- ✔ Phases of spiral model -
  - ◆ Planning
  - ◆ Risk Analysis
  - ◆ Engineering
  - ◆ Evaluation

Advantages :

- ➔ Less risk.
- ➔ Good for large projects.
- ➔ Documentation control.

Disadvantages :

- ➔ High cost.
- ➔ Not used for small project.

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10) Prototype Model -

- ✔ Prototype model set of general objective for software.
- ✔ It has a limited functionality.
- ✔ Working programs are quickly produced.
- ✔ Phases of prototype model-
  - ◆ Communication
  - ◆ Quick Design
  - ◆ Modeling and quick design
  - ◆ Construction of prototype
  - ◆ Deployment ,Delivery, Feedback

Advantages :

- ➔ Errors are check first so while coding error rate is less.
- ➔ Quick user feedback.
- ➔ It gives quick user feedback for better solution.

Disadvantages :

- ➔ It has slow process.
- ➔ Client feedback is more.

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11) Sashimi Model -

- ✔ This software process is quite similar to the waterfall model except the phases.
- ✔ Required module design to be done partially done.
- ✔ Most appropriate for medium-sized.
- ✔ Phases of Sashimi model-
  - ◆ Requirement
  - ◆ Architecture
  - ◆ Module design
  - ◆ Implementation
  - ◆ System Test
  - ◆ Operation and maintainance

Advantages :

- ➔ Communication phase is very powerful.
- ➔ Helpful for medium size project.

Disadvantages :

- ➔ Riskful for larger project.
- ➔ Spiral approch is better than this.
- ➔ Phases may be overlap.

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12) Unified Model -

- ✔ It is rational unified process.
- ✔ It is charcterised by spiral process.
- ✔ Phases of unified model-
  - ◆ Inception
  - ◆ Elaboration
  - ◆ Construction
  - ◆ Transition

Advantages :

- ➔ Easy to handle.
- ➔ All phases are very cooperative i.e.handle one by one

Disadvantages :

- ➔ Complex program are not handled by this.

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13) Test Driven Model -

- ✔ This is driven by agile development.

- ✔ It follows incremental model.
  At all phases test are driven.c
- ✔ If some test are going to fail then it pass to privious test block.

Advantages :

- ➔ Best software produce as an output because many test are perform on that software.
- ➔ Users satisfaction is supported.

Disadvantages :

- ➔ More time beacause of more test are required.
- ➔ More cost