**Javabasics** : [JavaBasics and Banking System.docx](https://1drv.ms/w/s!AnkkBy9OdTckgX6A-zaXUQYO5YBs?e=xv2pvk)

**Oops and loops** : [loops and oops.docx](https://1drv.ms/w/s!AnkkBy9OdTckggAc4enQC43GruKO?e=I71kRe)

**Collections and multithreading** :: [collections\_mutithreding.docx](https://1drv.ms/w/s!AnkkBy9OdTckggId6uVs9Ss_uVbw?e=k4k4VS)

**Multithreading and cache ::** [Multithreading and cache.docx](https://1drv.ms/w/s!AnkkBy9OdTckggTErt--CUoEUbiK?e=UUn4lr)

**Sorting algo and codes:** [**https://1drv.ms/w/s!AnkkBy9OdTckggjiw2QwDbnqvZzv?e=09Gbw2**](https://1drv.ms/w/s!AnkkBy9OdTckggjiw2QwDbnqvZzv?e=09Gbw2)

**Datastructures::** [**datastructures.docx**](https://1drv.ms/w/s!AnkkBy9OdTckggxUfBgvbYniUIWt?e=BrqF4w)

**Datastructures and project::** [**https://1drv.ms/w/c/2437754e2f072479/ETE26hWVLRBBvUWRSfpncDcBcQtRpq3V3tBbHrIY7dg7Yg?e=PUeM7c**](https://1drv.ms/w/c/2437754e2f072479/ETE26hWVLRBBvUWRSfpncDcBcQtRpq3V3tBbHrIY7dg7Yg?e=PUeM7c)

Sorting algos: [sorting algorithm.docx](https://1drv.ms/w/c/2437754e2f072479/EWLjX9Z7MvxMuKR2cph0FhYBMGDqSnAeGWzGcqELQ7ROzw?e=AOenQB)

Programs:: <https://1drv.ms/w/c/2437754e2f072479/EQUrL8bngL9Nuw6RZLLHUpUB6MaSoQPqBoLfvpYvz97ayA?e=B0A5rq>

**Datastructure problems:**

<https://1drv.ms/w/c/2437754e2f072479/EUr_7-4TqYpJjOvanuut7oYBg82I68TpNNFR23Ycb7158Q?e=tL716y>

sql::[sql.docx](https://1drv.ms/w/c/2437754e2f072479/EY82Z2QGSfpLj5amQc67MFMBNVd6c5s89917CTai3do8uA?e=pE7x7t)

springboot: <https://1drv.ms/w/c/2437754e2f072479/EZXMy-XhiZBKh5BCiHEHN58BzHV7II_x7RNpHraj8v6a8A?e=Fb8OFX>

angular:

[Angular.docx](https://1drv.ms/w/c/2437754e2f072479/ERKM-WPCyFFHji1ZGhKqGmcBrABj_Dk9A5UVa3EiuMtnNg?e=aGbtUC)

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**SDLC**

The purpose of the Software Development Life Cycle (SDLC) is to generate excellent software that meets all customer expectations and requests. The SDLC is an organized process that makes it possible to produce high-quality, low-cost software in the shortest amount of time.

We have different SLDC models:

Waterfall Model

Prototype Model

Spiral Model

Iterative Increment Model

V model

**Waterfall Model**

it is useful for the small projects and also next stage cant begin with out the completion of intial phase every stage output will be input to next stage. and after completion of all stages the product will be tested

advantages**:**

it is easy to implement this model

it works well for short project

all phases are clearly defined

disadvantages**:**

its not suitable for complex projects

as it’s a sequential approach the it takes more time because each phase should be completed before moving to the next phase

**Example of Waterfall Model is ATM**

**Iterative Model**

For every iteration additional features are getting added.and for every iteration involves coding and testing the software product. software product will get enhanced as we will add new features to the iteration.

Inception phase: Gathering information

Elaboration Phase: adding new features

Construction Phase: In the Construction phase, the architecture is filled in with the code which is ready to be deployed and is created through analysis, designing, implementation, and testing of the functional requirement.

Transition Phase: product will be deployed

Advantages

Adaptability to Changes

Early Risk Identification

Early Defect Detection

Disadvantage

Complete requirments and understanding of products is nesserary to build incrementally

**Example of iterative model is developing mobile phones over the years.**

**Prototype Model**

Prototype is developed prior to the actual software so that uses can inform drawbacks and we can improve the performance of the model.

Advantages

We can add missing features and functionality

Disadvantage

Since customer can chage the requirments it increases the complexity of the Scope.

**Spiral Model**

Each cycle involves the same sequence of steps as the waterfall process model

advantages

Users can be closely tied to all lifecycle steps . Early and frequent feedback from users . Cumulative costs assessed frequently.

Disadvantages

The model is complex. Risk assessment expertise is required.Spiral may continue indefinitely

**V-Shape**

Testing of the product is planned in parallel with a corresponding phase of development

Advantages

Emphasize planning for verification and validation of the product in early stages of product development. Each deliverable must be testable

Disadvantages

Does not handle iterations or phases

There are the various phases of Verification Phase of V-model:

1. **Business requirement analysis**
2. **System Design**
3. **architecture Design**
4. **Module Design**
5. **Coding Phase**

**Agile Model**

The meaning of Agile is versatile. Agile process model refers to a software development approach based on iterative development. Agile methods break tasks into smaller iterations, or parts do not directly involve long term planning.

**Phases of Agile Model:**

Requirements gathering

Design the requirements

Construction/ iteration

Testing/ Quality assurance

Deployment

Feedback

**SCRUM**

scrumis an Agile framework for managing and organizing work on complex projects, primarily used for software development but applicable to various fields.

Product Owner

Scrum Master

Development Team

**Events:**

Sprint**:**

Sprint Planning

Daily Scrum

Sprint Review:

Sprint Retrospective

**Benefits of Scrum Model in SDLC**

Flexibility and Adaptability

Customer Satisfaction

Early and Predictable Delivery

Improved Collaboration

Increased Transparency