**1. What is SDLC and what is it used for?**

SDLC is an abbreviation of Software Development Life Cycle. SDLC is the process of design and development of a product or service to be delivered to the customer that is being followed for the software or systems projects in the Information Technology or Hardware Organizations.

**2. What is the Purpose of SDLC?**

SDLC is required in order to have a systematic, planned approach to build a software application for the client.

**3. What are the different types of SDLC methodologies?**

The different models of SDLC are :

1. Waterfall model
2. Agile model
3. Iterative or incremental model
4. Spiral model
5. [RAD – Rapid Application Development model](https://www.educba.com/rad-model/)
6. DevOps model
7. V-Shaped model

**4. Explain Phases of the waterfall model**

The main phases of waterfall model are:

1. Requirements gathering
2. Design
3. Implementation
4. Testing
5. Deployment
6. Maintenance

**5. What are the most effective uses of Waterfall model?**

1. The requirements are documented very well.
2. The definition of a product is stable.
3. Technology is comprehensible.
4. Requirements are not ambiguous.
5. Ample resources are available with the required expertise to support the product.
6. The project is short.

**6. What are the advantages of Waterfall model?**

1. It allows control and departmentalization.
2. A schedule may be set with deadlines for each stage of development.
3. Every development phase proceeds in strict order.
4. Easy and simple to use and understand.
5. Easy to manage.
6. Phases are processed once at a time and completed.
7. Works well for smaller projects where requirements are very well understood.
8. Phases clearly defined.
9. The coding and testing steps are very short, as the requirements and design are clearly defined during the analysis and design phases.
10. The number of errors during the test phase is very small.
11. Tasks are easy to arrange.
12. There is good documentation of the process and results.

**7. What are the drawbacks of Waterfall model?**

The drawbacks of the waterfall model are – It will not be ideal for larger and complex projects when the requirements are not clearly documented and not clear. It is not easier and also not possible to go back to any stage or phase during the Software Development Process. No software product or service will be delivered until the last stages or phases of the Software Development Life Cycle which will be a form of risk. The process of testing can also be completed only after the completion of the Development phase and also cannot be carried out in parallel.

**8. Briefly explain Testing Phase**

Different testing methodologies are practiced detecting the software bugs, which happen to take birth during the previous phases. Today, there are many types o testing tools, and methodologies are available. Few firs are also building their testing tools, which are custom made as per the need or their organizations.

**9. What are problems faced in the waterfall model?**

Some of the common problems face in waterfall model are

1. Waterfall model is not ideal for complex projects where requirements are not clear
2. It needs lots of time to complete every stage
3. There are certain bugs which never rectified in this model

**10. Briefly explain Requirement Gathering Phase**

During this process, all possible system requirements to be created are collected and recorded in a requirement specification document.

**11. Briefly explain Design Phase**

In this phase, the requirements from the first phase will be reviewed, and the device design will be prepared. This system design helps determine the specifications of the hardware and system and helps define the overall system architecture.

**12. Briefly explain Implementation Phase**

The system is first developed with inputs from the system design into small programs called units, which are integrated into the next phase. Each unit is developed and tested for their functionality, known as Unit Testing.

**13. Briefly explain Deployment Phase**

Once testing is done, the product is deployed in the customer environment or released into the market.

**14. Briefly explain Maintenance Phase**

Some issues arise in the client environment. Patches are released to fix those issues. Some improved versions are released to enhance the product. Maintenance is done in the consumer environment to make such improvements.