**1.What is the Feasibility Study of the SDLC model & why is this important?**

**Solution:**  A Feasibility Study is the first step in the SDLC model, which evaluates the viability, practicality, and cost-effectiveness of a proposed software solution. The following are the key components of a Feasibility Study:

**Technical Feasibility:** This evaluates the technical aspects of the software project, including the required hardware and software, the compatibility with existing systems, the development tools, and the complexity of the solution.

**Economic Feasibility:** This assesses the cost-effectiveness of the project by evaluating the costs of development, maintenance, and operation of the software against the expected benefits and return on investment.

**Operational Feasibility:** This determines whether the software project is viable from a practical standpoint by evaluating the organizational impact, the ability to meet business requirements, and the ability to integrate with existing systems and processes.

This step is important because it helps determine whether the software project should proceed or not based on it’s technical, economic, and operational feasibility. The Feasibility Study helps avoid wasting resources and time on a project that may not be feasible to implement or may not meet the desired business objectives. The Feasibility Study is critical for ensuring that software projects are only undertaken when they have a high likelihood of success, and that resources and time are not wasted on projects that may not be feasible. It also helps to clarify the project goals, requirements, and constraints, and to provide a basis for developing a more detailed project plan.

**2. Write 5 advantages of Agile methodology.**

**Solution: Advantages are as follows,**

**Flexibility:** Agile methodology allows for changes in project requirements, providing more flexibility in the development process.

**Better stakeholder engagement:** Agile methodology involves regular interaction with stakeholders, leading to better alignment between development and business objectives.

**Higher transparency:** Agile methodology provides regular updates and progress reports, enabling greater transparency and visibility into the development process.

**Increased efficiency:** Agile methodology streamlines the development process, reducing waste and increasing efficiency.

**Better risk management:** Agile methodology incorporates regular assessments and reviews, enabling better risk management and mitigation.

**Higher customer satisfaction:** Agile methodology focuses on delivering value to customers through working software, leading to higher levels of customer satisfaction.

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**3. Write short notes on SDLC model phase.**

**Solution:** SDLC model is a pictorial and diagrammatic representation of the software life cycle. A life cycle model represents all the methods required to make a software product transit through its life cycle stages. SDLC model includes the following phases:

**Phase 1: Planning and requirement analysis**

Requirement Analysis is the most important and necessary stage in SDLC.The senior members of the team perform it with inputs from all the stakeholders and domain experts or SMEs in the industry.Planning for the quality assurance requirements and identifications of the risks associated with the projects is also done at this stage.

**Phase 2: Defining Requirements**

Once the requirement analysis is done, the next stage is to certainly represent and document the software requirements and get them accepted from the project stakeholders.This is accomplished through "SRS"- Software Requirement Specification document which contains all the product requirements to be constructed and developed during the project life cycle.

**Phase 3: Designing the Software**

The next phase is about to bring down all the knowledge of requirements, analysis, and design of the software project. This phase is the product of the last two, like inputs from the customer and requirement gathering.

**Phase 4: Developing the project**

In this phase of SDLC, the actual development begins, and the programming is built. The implementation of design begins concerning writing code. Developers have to follow the coding guidelines described by their management and programming tools like compilers, interpreters, debuggers, etc. are used to develop and implement the code.

**Phase 5: Testing**

After the code is generated, it is tested against the requirements to make sure that the products are solving the needs addressed and gathered during the requirements stage. During this stage, unit testing, integration testing, system testing, acceptance testing are done.

**Phase 6: Deployment**

Once the software is certified, and no bugs or errors are stated, then it is deployed.Then based on the assessment, the software may be released as it is or with suggested enhancement in the object segment.

**Phase 7: Maintenance**

Once when the client starts using the developed systems, then the real issues come up and requirements to be solved from time to time.This procedure where the care is taken for the developed product is known as maintenance.