

The Software Development Life Cycle (SDLC) stages can be observed in Figure 1.

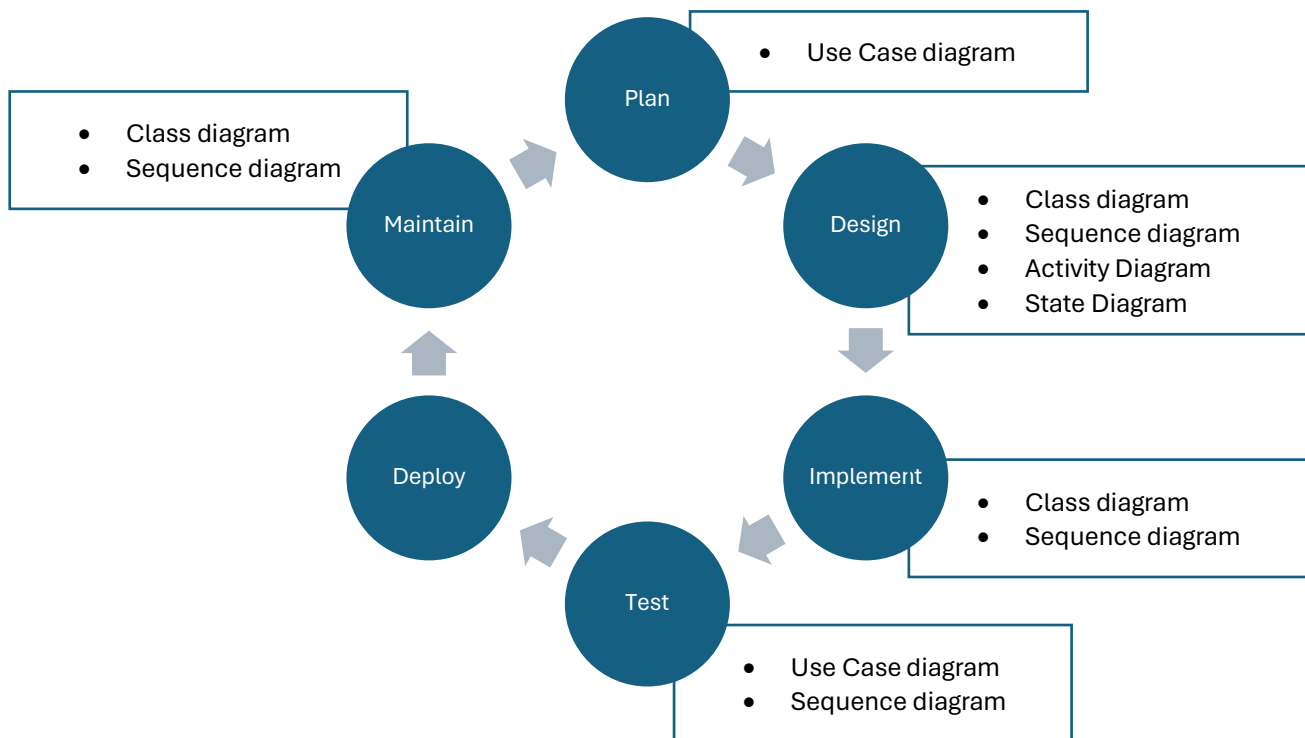


Figure 1. SDLC stages (AWS, n.d.) and the appropriate UML diagrams.

Certain Universal Modelling Language (UML) diagrams are more appropriate at certain stages than others. Firstly, within the Plan stage, the Use Case diagram is required, as it helps outline the core functionality of the system from an actor perspective, including system users and external actors (SSLA, n.d.). The Class diagram is relevant throughout the cycle, particularly the Design, Implement and Maintain stages. At the Design stage, the Class diagram defines the overall structure of the system, including its components such as classes and their attributes and operations. Additionally, the Activity, Sequence and State diagrams define the flow of control, how the structures interact in a sequence and transition between states (GeeksforGeeks, 2024). The Implement stage continues to refer to the Class diagram, as it outlines how the components interact with each other, including any aggregate and generalisation relationships. Finally, during the Maintain stage, the Class diagram

serves as an effective artefact in scenarios where modifications need to be made. At the Testing stage, Use Case diagrams also support in the creation of test plans (Crawford & Kaplan, 2003).

## **References:**

AWS (n.d.) What is SDLC (Software Development Lifecycle)? AWS. Available from:

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GeeksforGeeks (2024) Is UML part of SDLC? Available from:

<https://www.geeksforgeeks.org/is-uml-part-of-sdlc/> [Accessed 31 May 2024]

SSLA (n.d.) UML Diagrams. SSLA. Available from: <https://www.ssla.co.uk/uml/>

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