Software Development Life Cycle(SDLC):

Software Development Life Cycle(SDLC), basically refers to a step-by-step, structured process that defines the phases used for designing and building high-quality software.

Within a software organisation, the SDLC is a process used to build software. The SDLC is made up of a detailed plan that outlines how to create, update, maintain, and improve a particular piece of software. SDLC involves six stages while developing any software.

1. Planning
2. Analysis
3. Designing
4. Initialisation
5. Testing
6. Maintenance

Based on the Movie Rental System completed in Week 6, Part 3 Lab, the SDLC is as follows:

1. **Planning:**

In the foremost stage of SDLC, the clients' needs are inquired for budgeting and creating an outline of the project for the better understanding of the client and the business.

For the assessment:

Comparing the processes in the first stage to the request, first of all the senior developer has asked me to develop a prototype of the 'Requisition System'. For this project, the client requires me to create an application where the staff members can enter their basic details and can submit a list of requisition items alongside the price for each. Furthermore an approval number should also be generated based on the status of requisition. More detailed analysis for the project requirements are discussed in the further stages.

2. **Analysis:**

After the client's approval, in this stage of the Software Development Life Cycle, a descriptive analysis for the clients' needs is undertaken. This stage is crucial for the better understanding of the requirements for the developer. The software and application requirements for creating a successful running project are analysed in this stage.

For the assessment:

The client firstly requires a system where the staff member can type their basic information such as their name, ID and the current date. After providing their information, the staff member will then have the opportunity to submit a list of requisition products with the price that will be calculated into a total value in the end. Further, analysing the staff members' requests and the total calculated amount, the request can be approved or denied on some provided basis. Calculating the status of the requests, they can be further categorised and calculated in a statistical manner.

3. **Designing:**

After the users' requirements are documented and analysed, a structural design of the software initialization is created. In the designing stage of the Software Development Life Cycle, the architecture and further recommendations are discussed.

For the assessment:

For the user information input, firstly a class can be created where the basic information related to the user can be initialised.

4. **Initialisation:**

In this stage of the Software Development Life Cycle, the code for creating the application is implemented. This is the implementation stage of SDLC where the developer uses the software and application to develop the code.

For the assessment:
The clients' requested 'Requisition System' is created using Python code.

Firstly a class needs to be created where the methods need to be initialised using the **__init__** method. Then, the user has a menu with some options such as submitting a new requisition, display requisition, display statistics and exiting. Furthermore, after calculating the total amount of the requested items, it is further categorised using the if-else statement and a status for the requisition is provided (if the total amount of the items is less than 500 then the status is 'approved' or else the status is 'pending')

The manager can also respond to the requisition as 'not approved' if the total value exceeds $2000. All of the total number of requisitions, categorised as total, pending, approved and not approved requisitions are statistically printed.

All of the information based on the staff members request is printed.

5. **Testing:**

In this stage of the Software Development Life Cycle, the created code is tested for any bugs or errors by the developer before providing it to the client.

6. **Maintenance:**

In the final stage of Software Development Life Cycle, after the client has approved and acquired the program, the developer still needs to look for any errors or other requests by the client.