ASSESSMENT\_2\_PART\_B\_TASK\_2

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* **SDLC (SOFTWARE DEVELOPMENT LIFE CYCLE):-**
* The Software Development Life cycle is the process to used by the software industry to design, develop and test high quality software’s.
* SDLC is a framework that outlines the stages involved in developing software, from planning to deployment.
* It includes several key phases, each important for the successful completion of a software project.
* This stages describes the how they can be used to develop a program.
* There are Six main stages of SDLC.

1. Planning
2. Analysis
3. Design
4. Implementation
5. Testing
6. Maintenance
7. **Planning : -**

* Planning is most important step and initial part for the software development.
* The first step is to gathering information to understand the project’s Objectives. In this stage, my aim was to create a booking system and in this system to record the general information like Name, Form type, ID Number, items list and calculate the total cost.
* I identified the primary goals of the software : to allow users to information.

1. **Analysis :-**

* After the Planning phase, the next step is to the requirements analysis.
* In this phase, involves detailing the functional and non-functional requirements of the software.
* The main role of analysis phase is to analysing the requirements gathered from the planning phase to generate a clear specification.
* In the **Booking system**, to generate the status as per the criteria, approval reference number.
* The **\_\_init\_\_**method in the **booking system** class attributes such as **id, ticket\_id, name, status** and **service requests**.

1. **Design :-**

* In the design phase, I structured the program to utilize classes effectively. The `**Booking system**` class was created to encapsulate all relevant data and functionality for each book.
* The methods I designed enabled the program to handle core functionalities, allowing for easy extensions in the future.
* I designed methods to enter the **item name** and **item price**. Which would allow for user experience and future modifications.
* The **ferry\_service\_details** method in the booking system class is an example of design decision, where the service request are stored in a list.

1. **Implementation :-**

* Implementation known as Coding part.
* The main part of software development life cycle is to Implementation.
* I created the ‘**booking system’** class with its methods. This phase required careful practices to ensure the functionality was achieved correctly.
* **Booking\_approval** method in the booking system class is an example of Implementation, where the approval status is updated based on the user input.

1. **Testing :-**

* In the booking system class, **display\_booking\_info** method is an example of the testing phase because the booking information is displayed to the user.
* Testing phase is the ensure that it meets the requirements and works will be as a expected.

1. **Maintenance :-**

* When the software is passed form testing and implementation stage then updated for the improvements, bug fixes or additional features.
* Updated and maintained to fix bugs, add new features and ensure that it continues to meet the changing needs of the users.
* In the **Bookingsystem**, **Booking\_statistic** method is an example of maintenance, where the booking statistics are updated and displayed to the user.

In conclusion, SDLC is a crucial process that ensures the creation of high-quality software products. the Software Development Life Cycle helped me to develop the Booking System systematically. Each phase contributed to a better understanding of software development. I learned the importance of planning, gathering requirements, designing efficiently, coding. Testing and maintenance practices enhance the reliability of the final product.