Title - Maintainence.

Objective of the Experiment - To know how to software product is maintained after deployment.

Problem Statement - Use different methods to maintain your library management software. Use different types of maintainence methods.

Outcome of the Experiment - Must be able to understand how software is maintained.

Description - Software maintenance is widely accepted part of SDLC now a days. It stands for all the modifications and updations done after the delivery of software product. There are number of reasons, why modifications are required, some of them are briefly mentioned below:

Market Conditions - Policies, which changes over the time, such as taxation and newly introduced constraints like, how to maintain bookkeeping, may trigger need for modification.

Client Requirements - Over the time, customer may ask for new features or functions in the software.

Host Modifications - If any of the hardware and/or platform (such as operating system) of the target host changes, software changes are needed to keep adaptability.

Organization Changes - If there is any business level change at client end, such as reduction of organization strength, acquiring another company, organization venturing into new business, need to modify in the original software may arise.

Types of maintenance -

In a software lifetime, type of maintenance may vary based on its nature. It may be just a routine maintenance tasks as some bug discovered by some user or it may be a large event in itself based on maintenance size or nature. Following are some types of maintenance based on their characteristics:

- **Corrective Maintenance -** This includes modifications and updations done in order to correct or fix problems, which are either discovered by user or concluded by user error reports.

- **Adaptive Maintenance -** This includes modifications and updations applied to keep the software product up-to date and tuned to the ever changing world of technology and business environment.

- **Perfective Maintenance -** This includes modifications and updates done in order to keep the software usable over long period of time. It includes new features, new user requirements for refining the software and improve its reliability and performance.

- **Preventive Maintenance -** This includes modifications and updations to prevent future problems of the software. It aims to attend problems, which are not significant at this moment but may cause serious issues in future.

- **Cost of Maintenance -**   Reports suggest that the cost of maintenance is high. A study on estimating software maintenance found that the cost of maintenance is as high as 67% of the cost of entire software process cycle.

Test Cases For Library Management System - The test cases for library management system is an application that explains the test cases for library management system.

- **Login form:** The test cases involved are whether valid password and name are entered or invalid name and password entered.
- **Book entry form:** The test cases included are-on the click of add button, delete button, update button, search button, clear button, exit button and next button.
- **User account form:** The test cases included are-on the click of add button, delete button, update button, search button, clear button, exit button and next button.
- **Book return form:** The test cases included are-on the click of add button, delete button, update button, search button, clear button, exit button and next button.

LOGIN FORM:

S.N.	Test Case	Excepted Result	Test Result
1.	Enter valid name and password & click on login button	Software should display main window	Successful
2.	Enter invalid	Software should not display main window	Successful

BOOK ENTRY FORM:

S.N.	Test Case	Excepted Result	Test Result
1.	On the click of ADD button	At first user have to fill all fields with proper data , if any Error like entering text data	Successful

S.N.	Test Case	Expected Result	Test Result
		instead of number or entering number instead of text..is found then it gives proper message otherwise Adds Record To the Database	
2.	On the Click of DELETE Button	This deletes the details of book by using Accession no.	Successful
3.	On the Click of UPDATE Button	Modified records are Updated in database by clicking UPDATE button.	Successful
4.	On the Click of SEARCH Button	Displays the Details of book for entered Accession no. Otherwise gives proper Error message.	Successful
5.	On the Click of CLEAR Button	Clears all fields	Successful
6.	On the Click of EXIT Button	Exit the current book details form	Successful

USER ACCOUNT FORM:

S.N.	Test Case	Excepted Result	Test Result
1.	On the click of ADD button	At first user have to fill all fields with proper data , if any Error like entering text data instead of number or	Successful

S.N.	Test Case	Excepted Result	Test Result
		entering number instead of text..is found then it gives proper message otherwise Adds Record To the Database	
2.	On the click of DELETE button	This deletes the details of student by using Register no.	Successful
3.	On the click of UPDATE button	Modified records are Updated in database by clicking UPDATE button.	Successful
4.	On the click of SEARCH button	Displays the Details of book for entered Register no. Otherwise gives proper Error message.	Successful
5.	On the click of CLEAR button	Clears all fields	Successful
6.	On the click of EXIT button	Exit the current book details form	Successful

BOOK ISSUE FORM:

S.N.	Test Case	Excepted Result	Test Result
1.	On the click of ADD button	At first user have to fill all fields with proper data ,if the accession number book is already issued then it will giving proper msg.	Successful

S.N.	Test Case	Excepted Result	Test Result
2.	On the click of DELETE button	This deletes the details of book by using Register no.	Successful
3.	On the click of UPDATE button	Modified records are Updated in database by clicking UPDATE button.	Successful
4.	On the click of SEARCH button	Displays the Details of issued book..Otherwise gives proper Error message.	Successful
5.	On the click of CLEAR button	Clears all fields	Successful
6.	On the click of EXIT button	Exit the current book details form	Successful

BOOK RETURN FORM:

S.N.	Test Case	Excepted Result	Test Result
1.	On the click of ADD button	At first user have to fill all fields with proper data , if any Error like entering text data instead of number or entering number instead of text..is found then it gives proper message otherwise Adds Record To the Database	Successful

2.	On the click of DELETE button	Which deletes the details of book by using Register no.	Successful
3.	On the click of UPDATE button	Modified records are Updated in database by clicking UPDATE button.	Successful
4.	On the click of SEARCH button	Displays the Details of returned book … Otherwise gives proper Error message.	Successful
5.	On the click of CLEAR button	Clears all fields	Successful
6.	On the click of EXIT button	Exit the current book details form	Successful

Result - Able to understand how software is maintain.