CASE STUDY PLSQL

This project is based on automating a Library management system. The Expected duration of this project completion is 6th or below .The case only explains the partial construct of automation. Designed for the beginners and intermediate level.

Spinix is a recreational club ,which has a library in it . This library has various members who borrow books from the library. The main operation involved in this library are to lend the books to its members and takes the book back from them. This library lends and their transaction details. Make this library management system an automated one.

Consider the following:

1. **The library has 3 kinds of members**
   1. **Monthly – this member can borrow 4 books**
   2. **Yearly – this member can borrow 2 books**
   3. **Lifetime – This member can be borrow 6 books**
2. **The same kind of a book cannot be borrowed by a member at one instance.**
3. **The fine amount should be calculated basing on the issuedate ,returndate and duedate.**
4. **The fine amount can be 5/- per day.**
5. **When a book is issued automatically it should reflect in the book table.**

Table name

**Member**

|  |  |  |
| --- | --- | --- |
| **Column name** | **Data Type** | **Description** |
| Mem\_no | Varchar2(20) | Primary Key |
| Mem\_name | Varchar2(20) | Not Null |
| Mem\_type | Varchar2(20) | (M,Y,L) |
| No\_of\_books | Number(4) |  |
| Total\_fine | Number(4) |  |

**Book**

|  |  |  |
| --- | --- | --- |
| **Column name** | **Data Type** | **Description** |
| Book\_no | Varchar2(20) | Primary Key |
| Book\_name | Varchar2(20) | Not Null |
| Author | Varchar2(20) |  |
| Price | Varchar2(20) |  |
| No\_of\_books | Number(4) |  |

**Trans**

|  |  |  |
| --- | --- | --- |
| **Column name** | **Data Type** | **Description** |
| Book\_no | Varchar2(20) | Foreign key of books |
| Mem\_no | Varchar2(20) | Foreign key of member |
| Issue\_date | Date | Sysdate |
| Due\_date | Date | Sysdate+7 |
| Return\_date | date |  |

Approach:

1. **Write a procedure to issue the book to the member.**

**Proc Name : Issue**

**Parameters : book\_no,mem\_no**

**Consideration for issue of book**

1. **Book No. must be a valid book no. from the book table or handle exception.**
2. **Memno. Must be a valid Memno. From member table.**
3. **The same memno. Cannot borrow the same book without returning the book.**
4. **If the due date is crossing the expiry date of the member ,doesn’t issue the book.**
5. **If the number of book is already borrowed by the member without returning the book exceeds the membership limit then handle error.**
6. **If the stock of the book is not available then trap the error.**
7. **If all validations are fulfilled, then enter into transaction table bookno. Memno. Issue will by sysdate and due\_date is sysdate+7,return date is null and fine is null.**
8. **On Saturday or Sunday no issue of the books.**