Assignment : 1.

Date : 22.02.2022.

1. Develop functional requirement of the SRS document on the following topics.

(a) Search book availability in Library.

An initial informal description of a required functionality is usually given by the customer as a statement of purpose (SOP) based on which later requirements gathering, the analyst understands the functionality. However, the functionalities of search book availability is intuitively obvious to any one who has used a library. So, we are not including an informal description of search book availability functionality here. and in the following I have documented these functional requirements.

R.1 : Search book

Description : Once the user selects the search option, he/she would be asked to enter the keywords. The system would search the book list based on the keywords entered. After the search, the system should output all the details of the books along with the author name, publisher name, ISBN number and so on.

R.1.1 : Select search option.

Input : "Search" option.

Output : User prompted to enter the keywords.

R.1.2 : Search and display

Input : Keywords.

Output : Details of the books whose title or author name matches any of the keywords titles by the user. The details contain, title of the book, author name, ISBN number, publication year and so on.

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Processing : Search the book list based on the keywords.

R.2 : Renew book.

Description : When the 'renew' option is selected, the user is asked to enter his membership number and password. After password validation the list of the books borrowed by him are displayed. The user can renew any of his borrowed books by indicating them. A requested book cannot be renewed if it is reserved by another user. In this case, an error would be displayed.

R.2.1. : Select renew option

State : The user has logged in the main menu has been displayed.

Input : 'Renew' option selection.

Output : Prompt message to the user to enter his/her membership number and password.

R.2.2 : Login.

State : The renew option has been selected.

Input : Membership number and password.

Output : List of the books borrowed by the user is displayed and the user prompted to select the books to be renewed. if the password is invalid, then the user is asked to re-enter the password.

Processing : Password validation, search the books is issued

Next function : R.2.3 is password is valid and R.2.4 if password is invalid.

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R.2.3: Renew Selected books

Input : user choice for the books to be renewed out of the books borrowed by him.

Output : Confirmation of the books successfully renewed and apology message for the books that could not be renewed.

Processing : Check if any one has reserved any of the books. Renew the books selected by the user's borrower list, if no one has reserved those books.

(b) Withdraw cash from ATM :-

An initial information description of a required functionality is usually given by the customer as a SOP. An SOP serves as a starting point for the analyst and he proceeds with the requirements gathering activity after basic understanding of the SOP. However, the functionalities of withdraw cash from ATM. So, I am not including an informal description of withdraw cash functionality.

R.1 : Withdraw cash

Description : The withdraw cash function first determines the type of the account that the user has had and the account number from which the user wanted to withdraw the amount. It checks the balance to determine whether the requested amount is available as well as the account number. Otherwise it will generate an error message.

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R.1.1 : Select withdraw amount option.

Input : The withdraw amount option selected.

Output : User prompted to enter the amount to withdraw from the account number that need to be entered.

R.1.2 : Select amount and account type:

Input : User selects from any of the given option. savings / checking / deposit.

Output : prompt to enter amount.

R.1.3 : Get required amount.

Input : Amount to be withdrawn in integer values greater than 100 and less than 10,000 with multiples of 100.

Output : The requested cash and printed transaction statement.

Processing : The amount debited from the user's account is possible if enough amount is available, otherwise an error message will be displayed

2. Develop the functional and non-functional requirements for the Personal Library Software.

■ Functional Requirements :-

1. Manage own books.

1.1. Register book.

Description : To register a book from personal library, the details of a book, such as name, year of publication, date of purchase and a unique serial number is generated.

Input : Book details. | Output : Unique serial number.

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R.1.2. Issue Book.

Description : A friend can be issued a book/ books only if he/she is registered. The various books outstanding against him/her along with the date borrowed are first displayed

R.1.2.1 : Display outstanding books.

Description : First a friend's name and the serial number of the book to be issued are then entered. The the books outstanding against the friend should be displayed

Input : Friend's name.

Output : List of the outstanding books along with date at which each book was borrowed

R.1.2.2. : Confirm issue book.

Description : If the owner confirms the book, the book should be issued to him/her and records should be updated.

Input : Owner confirmation of book issue.

Output : Confirmation book issue.

R.1.3. : Query Outstanding Books.

Description : Details of the friends who have books outstanding with their names.

Input : user selection.

Output : This will display all the information about the friends who have the outstanding books.

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R.1.4. : Query book : Any user should be able to query any book.
Input : Name of the book.
Output : Availability of the book in the library.

R.1.5 : Return Book. : Upon return a book, by a friend the date of return is stored and the book is removed from the borrowing list.
Input : Name of the book.
Output : Confirmation message.

2. Manage friend details : –

R. 2. 1 : Register friend : A friend must be registered before he can be issued books. After the registration data is entered correctly the data should be stored and a message will be displayed
Input : Friend's details including name, address, contact number.
Output : Confirmation of Registration.

R. 2. 2 : update friend's details : When a detail is changed, that must be updated in all devices.
Input : New details | Output : confirmation.

R. 2. 2. 1 : Display current details : Input : Friend name and
Output : Currently stored details.
R. 2. 2. 2 : update friend's details : Input : Changes needed.
Output : confirmation

R. 3. 3 : Delete a friend record : Delete records of the inactive members.
Input : Friend Name and, Output : Confirmation.

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3. Manage borrowed books.

R.3.1 : Register borrowed books : The books are borrowed by the personal library are then registered.

Input : Title of the book and the date at which it borrowed.

Output : Confirmation of Registration status.

R.3.2 : De-register borrowed books : A borrowed book is de-registered when it is returned to the library.

Input : Book name.

Output : Confirmation of de-registration.

R.3.3 : Display borrowed books. : The data of the borrowed books by the owner are displayed.

Input : User selection

Output : List of books borrowed from other friends.

4. Manage Statistics of the library system.

R.4.1 : Display book count. : Total no. of books in the library are to be displayed

Input : User selection | Output : Count of books.

R.4.2 : Display amount invested : The total amount invested

Input : User selection.

Output : Total amount invested

R.4.3 : Display no. of transactions : The total no. of books issued/returned from a user towards the library system.

Input : start and end of period.

Output : Total no. of books issued and total no. of books returned

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■ Non-functional requirements :-

N.1 : Database : A DBMS that is available free of cost in the public domain can be used.

N.2 : Platform : Both windows and unix versions of the software need to be developed.

N.3 : Web-support : It should be possible to invoke the query functionality from any place through one of the web browser.

■ Observation :

Since there are many functional requirements, the requirements have been organised into four sections : Manage own books, manage friends, manage borrowed books, and manage stats. Now each section has less then 7 functional requirements. This would not enhance the readability of the document, but would also help in design.

3. Develop data flow diagram (DFD) for Online Banking System. (Lv. 0).

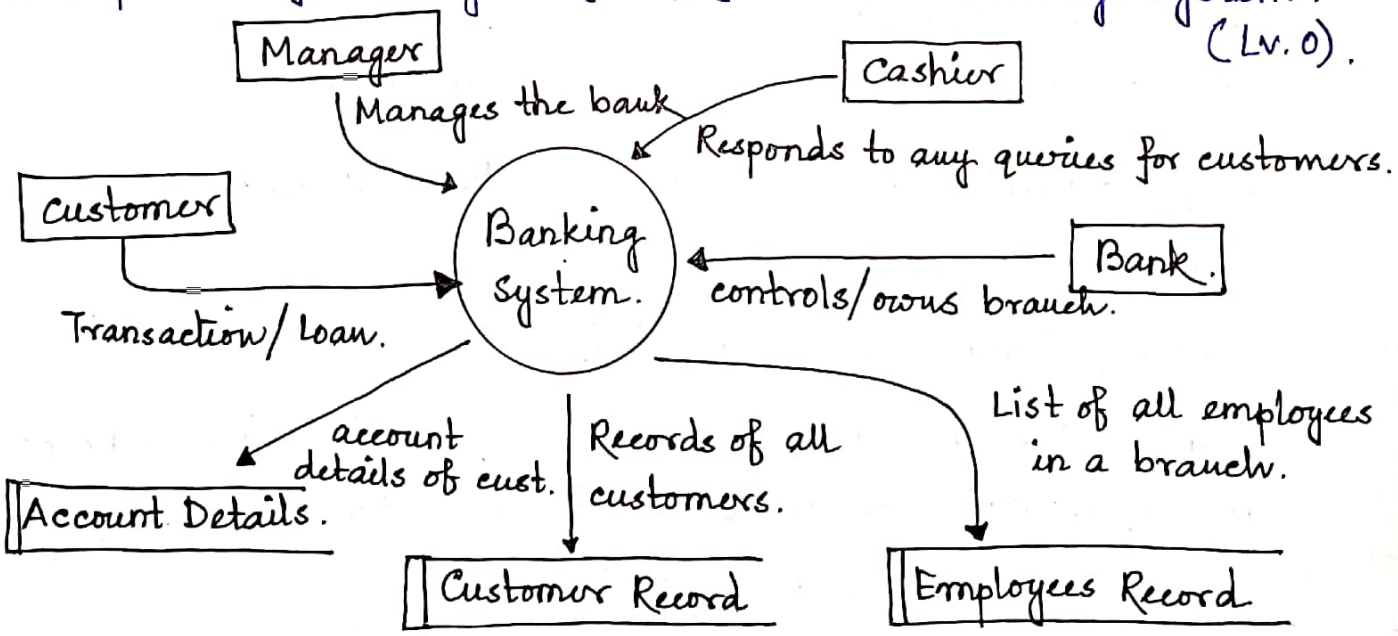

Fig : Level-0 DFD for online banking system.

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4. Develop dataflow diagram for Library Management system (Lv. 0)

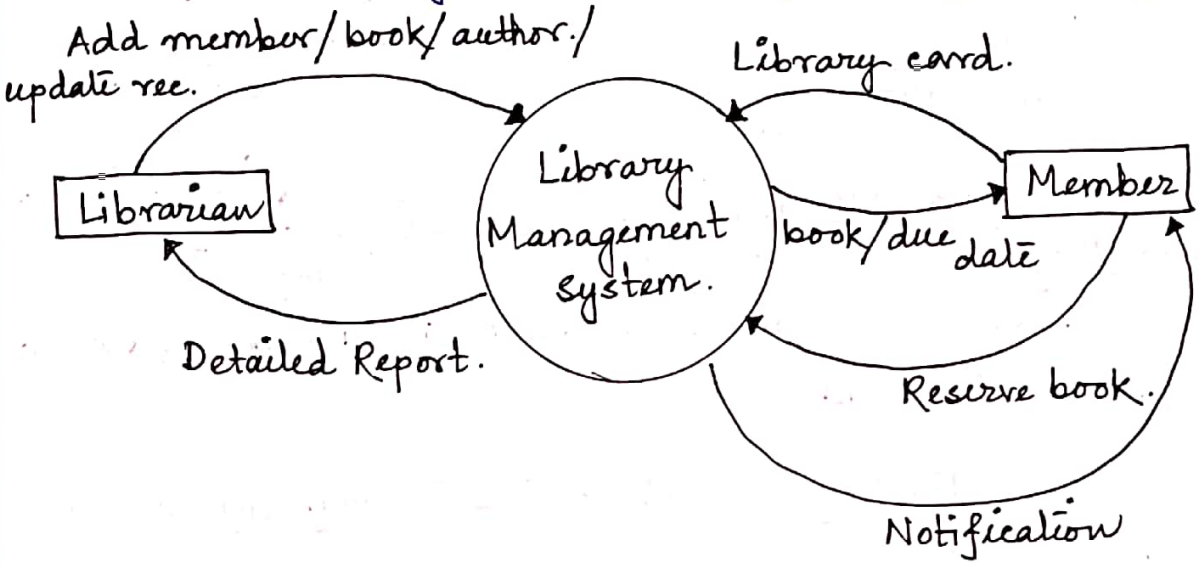

Fig: Level 0 DFD for Library Management System.

5. Develop a dataflow diagram for Hotel Management System. (Lv. 0)

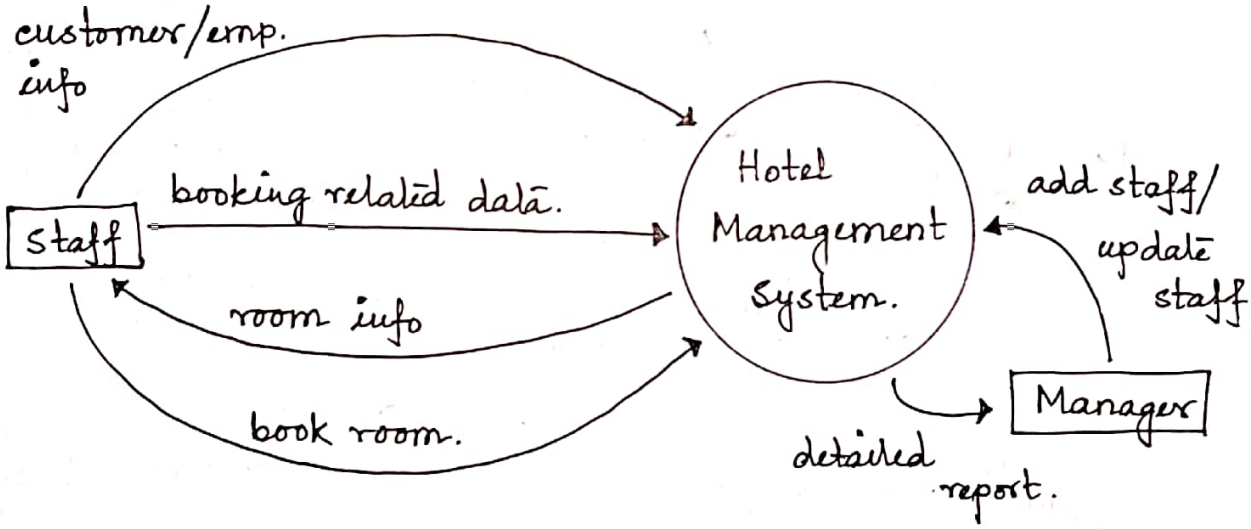

Fig: Level-0 DFD for Hotel Management System.

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6. Develop dataflow diagram for Theatre Management System. (Lv. 0).

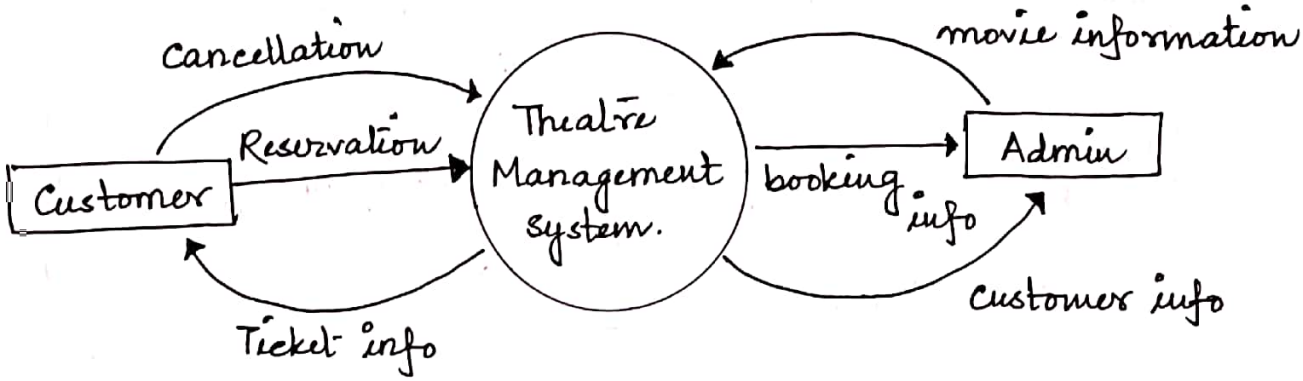

Fig : Level-0 DFD for Theatre Management System.

7. Develop dataflow diagram for Bus stand management system (Lv. 0).

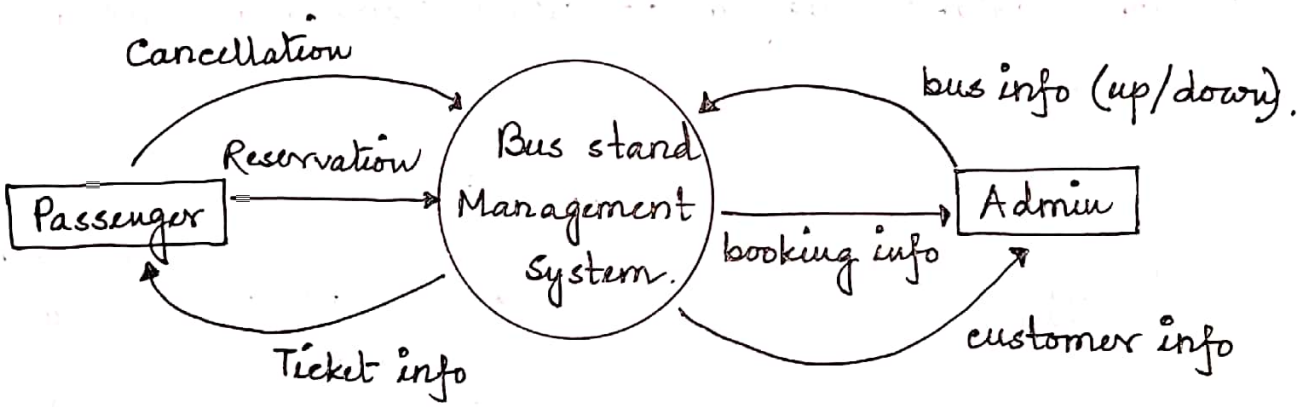

Fig : Level-0 DFD for Bus stand management system.

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