**UB AUCTION for Used Books**

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**PHASE 1 PROJECT INITIATION**

* **SOFTWARE REQUIREMENTS:**

|  |  |
| --- | --- |
| **Application** | 3 TIER application |
| **Programming Language** | ASP.NET |
| **Database** | Oracle DBMS |

**PROBLEM STATEMENT:**

Our main objective is to develop a Web Based Application to sell books online to end users. There are two main actors in this application. One is Normal user who can be a seller/buyer who can sell an item in the website and can bid for any other items displayed in the application. The other user is the admin who manages the entire application and can access any data which includes daily/weekly reports. The person who wins the bidding sends a personal check to the seller of that item. Once the seller receives the copy of the paycheck the seller sends the shipping details which includes the UPS tracking number. Both the seller and the winner of the bidding can rate the service. The normal user can send a message to other user regarding the bidding or to the admin regarding an issue with the delivered product. The Admin can view all the feedbacks posted for the bided item and issue messages with the delivered product.

**LIST OF MODULES IN PROJECT:**

**1). Registration Module:**

Both the admin and the normal user should have registered in the application. When the normal user logs into the application for the first time the following details are collected which includes (name, address, state, country, sex, DOB, phone number, Bank Name, Bank Account Number, and password). Once the user is not registered in the application and tries to login in to the application the user is taken to the registration page to enter the mandatory details needed to login into the application. Once the user registers into the application a User ID is created and displayed to the user. With that user ID and password the user can login into the application. The same procedure applies to the admin registration.

**2). Login Module:**

The user logs into the application with a valid username and password. For a registered user the username is a unique User ID that is generated whenever a user is registering in to the application. If the entered User ID and password doesn’t match the user is displayed with the appropriate warning message.

**3). Display Available Books:**

Once the user logs into the application the user is displayed with all the available book details in the application. The user can narrow down the search by selecting the dropdown values which includes course selection (computer science, IT, mechanical). On selecting any of these values the books details related to these courses are only displayed in the application. The following are the details displayed: (Course, Book image (optional), Book title, Price, Time period set for the book biding).

**4). Detailed Description of the Book:**

Once the user selects the book from the list the user is navigated to the page which displays the following details (Course, Book image (optional), Book Title, Book description, ISBN, Volume, Price and Time Period set for the book biding, number of users who has bided for the book so far, user who has uploaded the book in the application).

**5). Sell a Book:**

Once the user logs into the application the user is displayed with the list of available books. On that page there is an option called Sell Book. By selecting that user is taken to a page where he/she can upload the book details (Course, Book image (optional), Book Title, Book description, ISBN, Volume, and Initial Price for the book and the time period for the bidding to occur).

**6). Purchase a Book:**

Once the user logs into the application and founds the book he/she looking the user is navigated to the detailed book description page. On this page the book details along with the time period for biding and who and all has bid for the book so far gets displayed. The buyer can manually enter a bidding amount for the book and submit. Once the time period for the biding expires the person who has bid for the book with the maximum amount gets the book.

A paycheck is sent to the seller of the book. A copy of the paycheck and the tracking number is sent to the seller. A copy of the paycheck is also sent to the Admin. The seller will then send the UPS tracking number of the shipped books to the user and a copy of that is sent to the admin too.

**7). Update User Details:**

After login into the application the user is displayed with the list of available books. On that page there is a link to update the existing user details. On selecting that link the list of available information about the user is displayed on the screen and the user can do any modifications on those information and update in the system.

**8). Provide feedback:**

The user can provide a feedback of the book delivered to him/her. Both the seller and the winner can rate the application for the product post. All the users of the application can view this feedback for the book delivered. The user can send any message to the admin regarding any problem with the item delivered. In case if the book is damaged the admin can contact the seller and ask him to resend the paycheck to the user.

**9). Rate service:**

In this module both buyer and seller are asked to give the rating for the service. The scale would be the out of five. Each of the buyer and seller ratings are stored for a specific book. The admin can view the rating of the users so that admin can take the actions further.

**10). View other user details:**

Once the user logs into the application and bids for a book he/she will sell all the biding related details (the person who has bided for the book so far and the biding amount) in the application. If the user is interested to know about any of the specific user on selecting the existing user name the user is navigated to a new page with all the selected user details (name, no of books sold so far, no of books won in bidding, list of books in which he has bided).

**11). Admin View:**

Once the admin logs into the application the admin has access to view all the books sold so far in the application. The admin can view weekly and daily reports of the books bided so far and how of the user has bided for a specific book and who has won that book. The admin can also view the feedback for the book bided and can reply to any of the queries related to the books posted.

**12). Logout:**

On every page of the application there is option to Logout. On selecting that user is logged out of the application.

**LIST OF QUERIES USED IN PROJECT**

**1). Registration page:**

When the user registers in the application the user details (Fname, Minit, Lname, UserID, password, address, email, sex, PhNo) are saved in the user details table.

**A insert query is used to store the fname, minit, lname,UserID, password , address, sex, DOB, PhNo in the USERTABLE.**

**2). Login page:**

User logs into the application with their UserID and password. If a userID and password exists in the user details table the user is allowed access into the application.

Use select query to check if the userID and password exist in the table. If there is a row number fetched from the dB it shows the user has already registered in the application.

**Select UserID and password from the USERDETAILS TABLE where UserID is (created UserID) and password is (created password).**

**3). Display Available Books:**

To display all the book details (Book title, Price, Time period set for the book biding) a select query is used to retrieve all the details which exists in the Books table.

**Select all from the BOOKSTABLE** will displays all the book related information.

If the user wants to narrow down the search there is a department dropdown with the following values: computer science, IT and mechanical engineering). On selecting any of these values the books matching these criteria are only displayed to the user.

**Select all from the BOOKSTABLE where the department is (Computer Science/IT/Mechanical engineering)** will list down all the book details matching this criteria.

**4). Detailed Description of the Book:**

To view all the detailed description of the selected book (Department, BookTitle, Book description, Title, ISBN, Volume, Price, Seller of the book, Time Period set for the book biding, list of buyers who has bided for the book and their biding price details) the user has to select a book on the list of available books page and by doing so on the backend a select query is used as follow.

For each selected book there is a Book ID associated with which we can display the detailed description of the book.

**Select all from the BOOKS table where BookID is (selected book)** in the application displays all the book related information and the buyers who have biding for the book so far.

**5). Sell a Book:**

When a user tries to sell a book through the application the following details are gathered (Department, Book Title, Book description,ISBN,Volume,Author, Initial Price for the book and the time period for the bidding to occur) and inserted in to the db table.

**Insert all the book details (Course, Book image (optional), Book Title, Book description, ISBN, Volume, Initial Price for the book and the time period for the bidding to occur) into the BOOKSTABLE.**

Once an insert operation is done a book id is generated which a random number is starting from 001 and is incremented for each books added. This book id is a unique attribute value.

The BookID is updated into the BOOKSTABLE for the recently added book details.

**Update table BOOKSTABLE set the BookID as (generatedbookID) where the book added is (recently added book details)**

**6). Purchase a Book:**

User finds the book needed and enters the biding amount. An entry is added into the **BIDINGDETAILS TABLE** with the user details and the biding amount entered.

**Insert query is used to add the user details and their biding amount into the db associated with the selected Book ID in the Biding Details table.**

Any user can provide a feedback for a book in the application. This feedback is saved into the db and displayed along with the book throughout the book stays in the application.

**Insert query is used to add a user feedback for a specific book based on the bookID into the NOTIFICATION table.**

The seller can also provide some feedback for the selled books in the application.

**Insert query is used to add the seller feedback for a specific book selled into the NOTIFICATION TABLE.**

Once a user won the bidding a entry is added in the final bidding table.

**Insert into FINALBIDING values with the bookid, seller id, price, receiver id, bid price, time, date is done**

A notification is sent to the winner with the seller details (name, bank account and branch).

Select all from the BANKINGTABLE where userid is bill will give all the bank details of the bill user.

The winner will send the paycheck and insert the paycheck details in the application. If an entry already exists in the applicaton the table will be updated with the paycheck sent date.

Update into PAYMENTTABLE with the paycheck sent date.

Once the seller receives the paycheck he updates the paycheck received status in the application.

Update into PAYMENTTABLE with the paycheck received date details.

The seller will be notified with the winner details (name, address, phone number).

Select \* from usertable with the userid condition will retrieve all the user specific details.

So the seller will send the books and update the UPS tracking number, books sent date in the PAYMENT table.

Update PAYMENT table set ups tracking number with the number and the books sent date details.

Once the winner receives the paycheck he will update the books received date in the application.

Update table PAYMENT Table with the books received date.

**7). Admin View:**

Once the admin logs into the application the admin can select any books in the application and view the feedbacks posted so far.

If there is a feedback posted for the book requesting the admin to reply the admin can reply with the response.

**Insert query is used to insert the response into the feedback table for the particular book id**

If the winner of the bided book is not satisfied with the material delivered they can contact the Admin and request for the refund of the money. In this case the admin will contact the seller and ask to send the payment made back to the user.

**A insert query is used to insert this transaction in the refund Amount table which has the entry for the admin, book ID winner name, seller name, bided amount with an option to upload the refund payment check copy.**

Once the seller logs into application he is notified with a message from the admin in the application. On selecting that seller can view the winner feedback and the admin reply on this scenario. If the material received by the winner is not up to the standard the admin would has asked the seller to resend the paycheck again to the winner.

So in this case the admin has to upload the refund paycheck and upload the photocopy of the paycheck in the feedback section.

**First a select query is used to check if there is an entry in the Refund Amount table with the Book ID and seller name.**

**If entry exists then a photocopy of the refund paycheck should be uploaded by the seller in the application and should be updated in the Refund Amount table .**

The user can view the weekly and daily reports of the books bided so far in the application.

**A select query is used to display all the biding related details which includes (Book id, Seller Name, Winner name, Number of users bided for the book, Biding amount).**

**8). Update user details:**

In order to update the user details an update query is used as follows

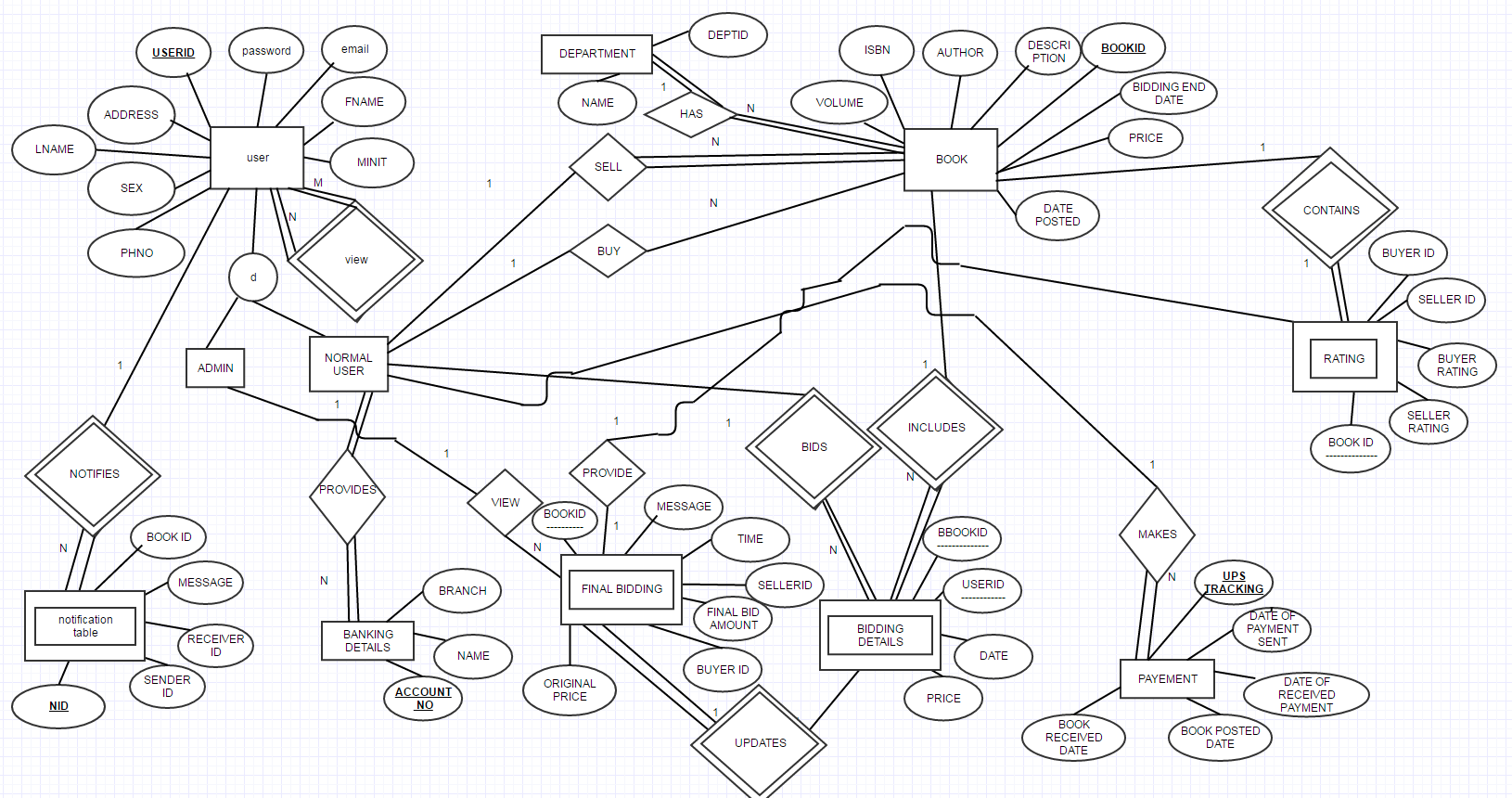
**Update details (name, address, state, country, sex, DOB, phone number, Bank name, Bank Account Number) where username is the generated User ID.**

**ASSUMPTIONS:**

* There is only one admin for the application.
* In the application we bid for the books only on computer science, IT and mechanical courses.
* A user cannot bid for a book which is less than 10$. The initial bidding amount should be 10$.
* Both the admin and the normal user should be registered in the application and should have a unique User ID and password.
* Once a user bids a value it cannot be changed by any other user to the lowest price than the actual bided value.
* Once the seller of the book gets notification from the admin regarding the refund for the selled book the refund payment check should be done in 10-15 business days. If not from the registered user bank details the admin can contact the bank and try to automatically detect the money from the seller account.
* A user cannot bid for a product more than once in the application.

**PHASE 2 CONCEPTUAL/LOGICAL DATABASE DESIGN**

**EER MODELLING FOR THE DATABASE**

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**Relational Database Schema – Creating Relations**

**USER**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fname | Minit | Lname | Address | Sex | PhNo | UserID | PassWord | Email | NormalUserFlag | AdminFlag | BookID |

**BOOKS**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BookID | Description | Author | BookTitle | ISBN | Volume | Price | DateAdded | BiddingEndTime | DeptID |

**BIDINGDETAILS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BBookID | UserID | Date  -------------- | Price | BidingEndDate |

**BANKINGDETAILS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | PhNo | BranchName | AcctNumber | UserID |

**NOTIFICATION**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| UserID | ReceiverID  --------------- | Message | BookID | Time |

**FINALBIDING**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| BookID | SellerID | Price | ReceiverID | BidPrice | Time | Message |

**PAYMENT**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| BookID | PayCheckSent | PayCheckRec | BookPostedDate | UPSTrackingNo | BookReceived |

**DEPARTMENT**

|  |  |
| --- | --- |
| Dept\_ID | Name |

**RATESERVICE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SellerID | SellerRating | BuyerID | BuyerRating | BookID |

**VIEW**

|  |
| --- |
| UserID |

**Relational Algebra Expressions for the queries:**

**1). Registration page:**

When the user is registering in the application for the first time the user details are gathered and stored in the database.

**Insert into USER table values ( ‘John’,’M’,’Smith’, ‘xxxxxx’, ’M’, 987787873477, ’John5sm’, ’FF324GE4’,’johns05@gmail.com’,Y, null, null);**

**2). Login to application :**

Enter username and password which has been already registered in the application. By doing so the user will be able to login into the application. (For eg. Login with the value username: bill, password: bill100)

**Login σ UserID = “bill”, PassWord = “bill100” (USER)**

(If entry exists in the USER table the entire row will be fetched in this case). In this scenario the user is provided access into the application.

**3). Display all available books in the application**

All the books available in the application will be displayed with the following query :

**Book\_Details BOOKS ∞ DeptID = Dept\_ID DEPARTMENT**

**Results σ BookID, Description, Author, BookTitle, Price, BidingEndTime (Book\_Details)**

To filter the book details displayed in the available books displayed page the user can search for the books based on the department.

**Book\_Details BOOKS ∞ DeptID = Dept\_ID DEPARTMENT**

**Available\_Books σ DeptID = ‘IT’ (Book\_Details)**

**Results π BookID, Description,Author,BookTitle, Price, BidingEndTime, (Available\_Books)**

**4). Detailed description of the Book:**

To view all the book specific details and the list of users who has bided for the book the following relational algebra is used.

**(Selected\_Book) σ BookID =001,BookTitle = ‘AdvancedDatabase’(BOOKS)**

**(BID\_DETAIL ) (Selected\_Book) ∞ BookID = BBookID (BIDINGDETAILS)**

**5). Sell a Book :**

The user can sell a Book in the application by uploading the book details.

**Insert into BOOKS table values (‘description’,’elmasri’,’Advanced Database’,’ISBN-097902342’,’Volume’,30$, ‘12.00\_05\_05\_2016’, 3);**

Once the book is added in the books table the last BookID column is checked and the last entry + one value incremented is generated and update in the Bookstable.

(BOOK\_DETAILS) σ BookTitle = ‘AdvancedDatabase’ (BOOKS)

Update table BOOKS set BookID = 002 where BookTitle = AdvancedDatabase.

**6).Purchase book:**

**User will select a book from all the available books displayed in the application.**

**BOOK\_Details σ BookID = 001 (BOOKS)**

**Results π BookID, Description,Author,BookTitle, ISBN, Volume, Price, BidingEndTime, DateAdded(Book\_Details)**

**The entered biding amount for the book gets added in the BIDDINGDetails table**

**Insert into BIDDINGDetails table values (‘001’,bill100,40, ’09:00’,’12:40 05\_JUNE\_2016’);**

**If the user wins the bidding a entry will be added to the FINALBIDDING table**

**Insert into FINALBidding table values ( 001,bill02’, 20, bill100,40,12:40);**

The winner will be notified with the seller details as follows:

The FINALBIDDING table and the banking details table are joined based on the sellerid and the seller banking details are retrieved.

BID\_Details (FINALBIDDING) ∞ SellerID = UserID (BANKINGDETAILS)

Seller\_Details π Name,AcctNumber,PhNo,BranchName (BID\_Details)

The winner will fill the paycheck and update the PAYMENT TABLE with the paycheck sent details.

Insert into PAYMENT TABLE values (001,’06-JUN-2016’,null,null,null,null);

The seller receive the paycheck and update the payment table with the paycheck received date.

Update table PAYMENT set Paycheckreceived = ’15-JUN-2016’ where bookid = 001;

The seller will be notified with the winner name and address details and then the seller will courier the books and update the UPS tracking number in the system.

WinnerDetails ( FINALBIDING) ∞ ReceiverID = UserID (USER)

Result π Name, Address, phone ( WINNERDETAILS)

The seller will then courier the books and upload the UPS tracking number and the date sent field in the PAYMENT TABLE.

Update table PAYMENT set UPStrackingnumber = ‘dfsfs0988443’ and datesent = ’17-JUN-2016’ where bookid = 001;

Once the winner receives the book he can update the courier received date in the system.

Update table PAYMENT set datereceived = ’20-JUN-2016’ where BOOKid = 001;

**8). View Notification :**

If user has some notification about bided books the details gets displayed based on the following relational algebra.

**NOTIFICATION\_AVAILABLE** **σ UserID = ‘bill’ AND bookID = ‘001’**

**RESULT π ReceiverID, Message,BookID,Time (NOTIFICATION\_AVAILABLE)**

**9). Update User Details:**

**Login\_Details σ UserID = “bill” AND PassWord = “bill100” (USER)**

**If a user details exits the login\_details are displayed. The user can edit the existing user details.**

**Update table USER set PassWord = ‘xxx87bill’ where UserID = ‘bill’;**

**10) Rate Service:**

The buyer and seller can rate their service each other. The details are stored in the rate service table. These details can be observed by the database admin as below.

**Rating=σ BOOKID = ‘001’, AND SELLERID = ‘BILL1’AND BUYERID=SAM (Rate\_service)**

**Conclusion:**

So far with the given requirements we have covered all the possible scenarios for the online biding system for used books. From this phase 2 we have understood the conceptual/ logical level database design and we identified the entities and their relations to each other to their maximum extent. We have mentioned all the entities and their relations in the ER diagram and how the table structure has to be designed in the Relational schema diagram. Based on the design we formulated the relational algebra expressions for most of the scenarios involved in the project. In future there can be some more entities identified and added to the conceptual level design based on the review.