WIPRO
Applying Thought

Letter of Recommendation

July 25, 2014

To whomsoever it may concern,

I am pleased to write a letter of recommendation for Aviral Takkar, a Computer Engineering student at The Delhi Technological University, New Delhi, India.

This summer, I hired him to work on new Android application project on Second Hand Book Selling. Being a student for the past six weeks, he has shown a good amount of potential and real time knowledge about marketing concepts by interacting with his friends to determine real time requirements for selling a second hand book.

Over the internship period, he designed a difficult curriculum for himself and has been very successful in combining requirement gathering and application design on his own to complete application development. He is comfortable with himself and is well-recognized by his peer groups.

Aviral is an enthusiastic, energetic, and exceptionally well-organized student. He writes beautifully, is widely read, and demonstrates good quantitative skills. In my Software Development process, he was the best Intern in the team. His performance exceeded that of the incoming graduate students. He always came to office prepared and was clear about technical concepts. I have been especially impressed by Aviral's determination and sparkle.

He has covered approximately all the SDLC phases under software development. In a small span of time, he has completed his task very gracefully. He is well-trained, ambitious, and yet very open-minded and even self-effacing. I believe he will be successful wherever he ends up on completion of his degree. He will be a dedicated team member and a competent professional.

I recommend him very highly and without reservation.

Sincerely,

Chand
25/July/14

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WIPRO

OLD BOOKS CLASSIFIEDS

BUSSINESS REPORT

AVIRAL TAKKAR
DELHI TECHNOLOGICAL UNIVERSITY

ANDROID APPLICATION

COMPLETED IN THE PERIOD 11TH JUNE TO 25TH JULY 2014

PRE ESTIMATION SHEET

ANDROID APPLICATION – Old Books Classifieds			
Project Overview	Old books classifieds application on android platform		
Purpose	This app is going to serve as a digital platform to enable users to purchase 'available' listed books by directly contacting the seller. In addition, the user may himself upload meta-data about books he wishes to sell.		
Targets /Goals	To complete a functional application		
		Request Dated	30th July 2014
Request Owner Team (HR/BO/PMO etc.)		**Sign off Authority**	Mr Chand Mehta
Project Code (As per Wmyfriend.com) Budge Center		**Cost Approval Authority**	

REQUIREMENT / FEATURE		
S.no	**Description**	**Priority (Low /Medium /High)**
1	Present a catalogue of old books for sale to a user	HIGH
2	Allow a user to upload books for sale	HIGH
3	Create a user account feature	Medium
4	Ease of navigation	Medium
5	Allow a user to place bids on a book for purchase	Medium
6	Allow a user to contact bidders for a particular book uploaded by him	Medium

	Benefits/Saving
1.	Increased convenience in selling and purchasing old books

MAIN APPLICATION COMPONENTS

- *Catalogue*
- *User Account*
- *Books uploaded for sale by user*

CATALOGUE

This would be the home page of the app, where the user would be able to view all books available for purchase that have been uploaded by all other users using the app. For this purpose, server space would be required to create and maintain a database of users and the information about the books they have to sell. A search tab would be provided to look for specific books in the catalogue.

USER ACCOUNT

To upload books to the catalogue, a user must first create an account. The user must choose a username and password and provide his contact number and email ID (which would serve as primary key). After confirming the email address, the user's account would be created. Once the user logs in and returns to the market, the user would not be able to view those books that have been uploaded by him, in the market.

BOOKS UPLOADED FOR SALE BY USER

To upload books, the following information would be need from the user:

- A recent photograph of the book to be sold.
- The name and author of the book.
- Duration for which the book has been owned
- Book Edition
- Book Publisher
- A minimum price at which he expects to sell the book – the MSP (Minimum Selling Price)
- Other comments and rating (optional)

PROCESS FLOW STEPS

- **Catalogue:**

  1. Home page consists of a drop down list to choose categories.
  2. On choosing a category, relevant books displayed.
  3. On choosing a book, a bidding page displayed.
  4. Buyer places a bid and is redirected back to Catalogue

- **Books to be sold**:

  1. The books uploaded for sale by the logged in user displayed here.
  2. User may select a book, and be directed to a new page displaying all bids placed for that particular book.

- **User Login:**

  1. A user has to login before uploading a book for sale.
  2. User can login through a login option displayed in a context menu, by providing a registered email id and a password.
  3. A logged in user may log out.
  4. 'Books to be sold' page is only populated once a user logs in.

- **All data downloaded** to device is cached. If a user logs out, all cached data except 'Categories' is cleared from the device.

OPERATION

- On completing the above mentioned process for uploading a book, the book would be linked to the user's account and uploaded to the server. The uploaded books would appear in the "Books To Be Sold" tab of the application to the user, and would appear in the global catalogue to others.

- When a user wishes to purchase a book

  - He may browse the catalogue and select a book he wants to purchase.
  - He may use the 'search catalogue' option to look for the desired book.

- Once the book has been selected, the user may 'bid' for that book, by quoting a price to better the MSP set by the seller of that book.

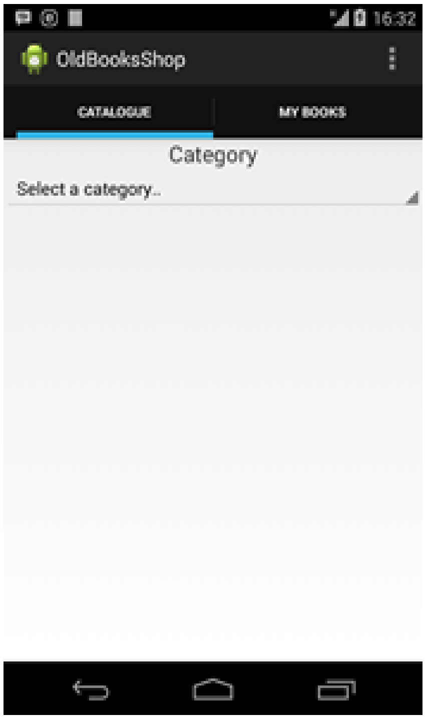
- All bids for a book are recorded, and the seller of that book may view these bids any time by selecting that book from the 'Books To Be Sold' tab. A list of all bidders is then displayed along with their respective email ids and quoted prices.

- It is now up-to the seller of the book to contact whichever bidder he thinks appropriate.

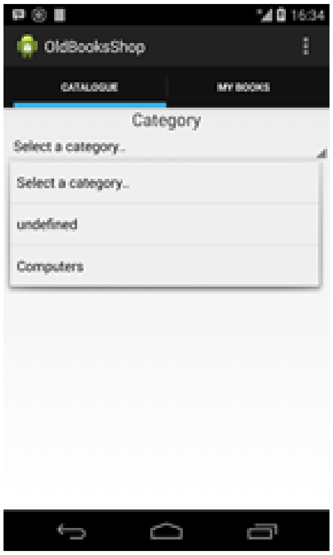
  - On successfully selling a book, the seller may flag the book as 'sold'. He is also given the option of removing a book from sale

APPLICATION PREVIEW

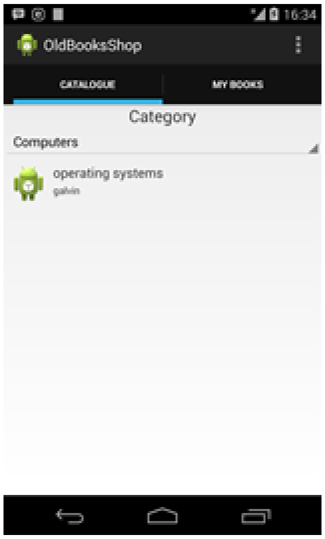
Home Page



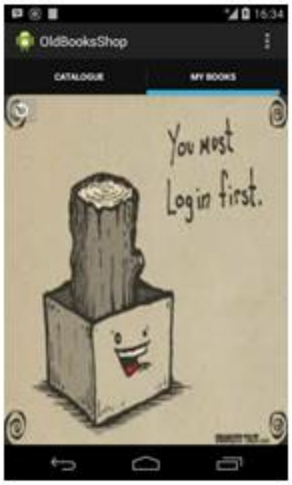
Category Selector



On selecting a category

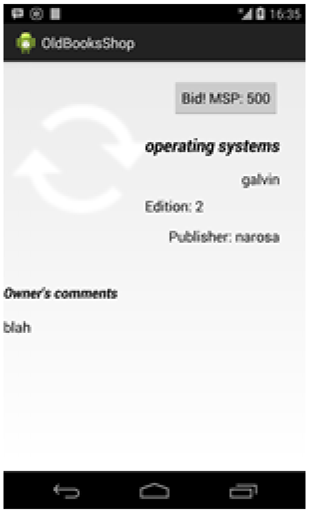


On viewing ‘My Books’ without logging in



You Must Login first.

On selecting a book (skeleton design, image excluded)



operating systems

galvin

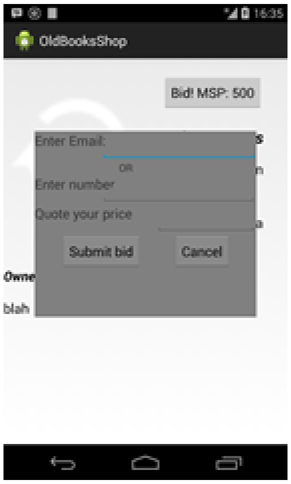
Edition: 2

Publisher: narosa

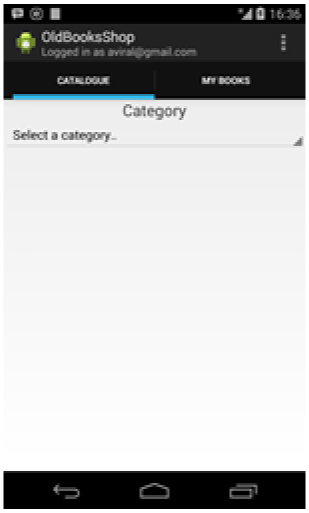
Owner's comments

blah

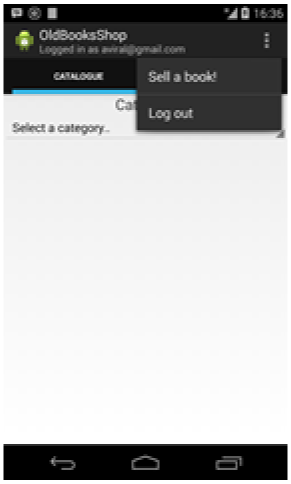
On clicking ‘Bid’ button, popup is shown



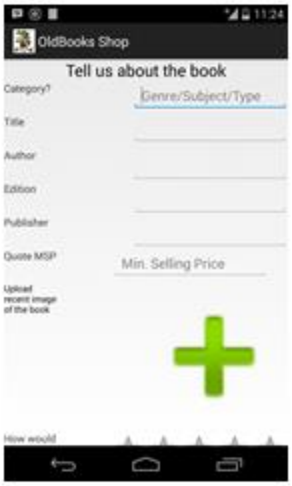
On logging in, action bar subtitle modified



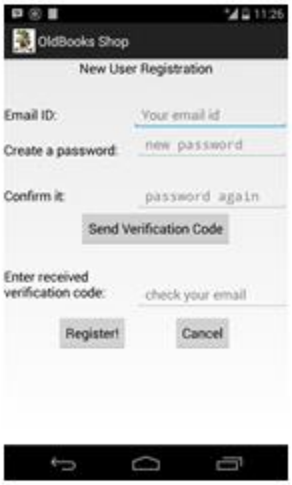
On logging in, context menu entries modified



Sell a book



On selecting Sign-up



TECHNICAL ASPECTS

- The application is created using a tab layout and makes use of context menus and popup windows for operations like login or placing a bid. Android services and Broadcast Receivers have been used to retrieve information from the server and all background data processing is done in parallel threads spawned by the Android AsyncTask classes.

- All image processing is handled in parallel threads using AsyncTask classes. Android Handler classes have been used for user interface from parallel threads.

- SQLiteOpenHelper class is used to handle all database operations on the mobile device.

- The application requires the following Android System Permissions to install on a device
  - Full network access
  - Camera access

- The categories are updated through android system service, and cached in a database in the device. They will be updated in intervals as selected by the user (daily, hourly, weekly etcetera)

- For user email verification during the process 'Sign up', a random number is generated by the mobile device and emailed to the email id provided by the new user. The email is sent using a mail class utilizing three external JAR files, added from the following URLs
    - https://javamail-android.googlecode.com/files/activation.jar
    - https://javamail-android.googlecode.com/files/mail.jar
    - https://javamail-android.googlecode.com/files/additionnal.jar
- To verify the email id, the user must copy and paste the received number in a text box provided. A correctly received random number is easily verified.
- Communication between the application and server to exchange data follows the Simple Object Access Protocol (SOAP). Its documentation may be found at http://www.w3.org/TR/soap/.
- Database Design at Server
    - There are 4 tables required
        - User Info table – to record email id, password of users registered
        - Book Info table – to record name, author, edition and other book information obtained by users of books in the catalogue
        - Seller Info table – to associate a registered user with an uploaded book for sale
        - Shopper Info table – to record bid amounts and email id of interested buyers, along with corresponding book_id.
    - The following stored procedures have been created
        - GET_Books_By_Category
        - GET_Books_By_Seller
        - GET_Bidders_For_Book
        - ADD_User
        - ADD_Book
        - ADD_Shopper
        - DEL_Seller
        - MARK_Book_Sold
- Database Design on device

    - User Table – to record email id and password of the logged in user
    - Categories Table – to temporarily cache downloaded categories on device.
    - Cached Bidders Table – to view bidders for various books uploaded by the user
    - Cached Books To Be Sold Table – to cache the books recorded for sale by the logged in user.
    - Cached Books downloaded per category – to reduce network data, cached books per category are cached as they are viewed by user.
    - All cached items maybe cleared by an Android Service invoked periodically (period set by user) for the purpose of database maintenance.

- Web Services created – To facilitate communication between device and server, web services on the .NET/C# platform have been created. They are listed below
    - GetSearchResult – to search the database on the given keyword
    - GetBooksInfoByCategory – to facilitate download of books when a user selects a particular category
    - AddUser – to register a new user
    - VerifyUserCredentials – to log a user in
    - AddBook – to add a new book to database when it is uploaded for sale by a logged in user
    - GetBooksToBeSold – to return a list of books corresponding to those uploaded by the logged in user for sale
    - AddSeller – to record that the logged in user has uploaded a book for sale and associate it with him/her.