Review Article

Optimizing Shared Expense Management: Exploring Bill Splitting Systems for Enhanced Financial Efficiency

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I N F O

A B S T R A C T

Mobile applications have grown into an integral component of daily life. There are numerous applications on the market for managing individual and group spending. Few applications are dependable or capable of meeting the needs of their users. In this project, I created a smartphone application that manages all of your spending, including your own contribution to group expenses, monthly revenue, recurring and adhoc payments. It tells you "Who pays who and how much." The suggested app would do away with scribbled notes, spreadsheets, ledgers, which cause complexity and data inconsistency issues whereas documenting and splitting expenses. Our application allows users to handle these expenses with greater efficiency. This programme will not only assist users in managing their spending, but it will also assist marketing managers by supplying them with the necessary foundation. You can integrate your payment gateway, such as Paytm, or use your wallet to conduct purchases in this app smoothly.

Keywords: Expense, Bill Splitting Systems, Financial Efficiency

Introduction

It is a mobile application intended to run on android devices. It is designed to fulfil the needs of the user by reducing their efforts for the settlement of the bill. The application encourages corresponding users to help who owes who, for what. Aim to provide user the best approach to help user and their companion to share expenses easily. This application will let bunch users and their companions have detailed view inside this application around the individual costs and to settle them by using payment gateways linked with the application or by using the e- wallets. This application allows its user to add remark to an expense, click on the expense name in any expense list.

Bill posting will have space for comments. It will also have the notification option to notify each time somebody adds a remark to an expense user is on, or user can withdraw to posted bill. It will also have the graphical representation of the expenses weekly, monthly, quarterly, or yearly. The additional feature that we are going to add in this application is that it enables user to settle the bill without disturbing the interaction with this application, that is by providing the payment gateway like Paytm, PayPal or by using the e- wallet for the settlement of the bill.

Project Design

In this project I will make a web application of bill splitting system in which many groups of people like students, friends, classmate ,or any kind of business group can come together to split the expenses among them. You've just finished a big meal with a big group of people. Everyone is full and happy, but ready to go home. You ask for the

bill, now, instead of relaxing after a great meal, you're scratching your head trying to do complicated math so that each person only pays for what they're responsible for. This app makes the process of splitting a complicated bill much easier by guiding you through it in a step- by-step manner and displaying detailed results on-screen for everyone to see.

Description

All you need is your bill and your Android mobile device! You can either split the entire bill evenly among all of your party members, or you can go through each line item and select one or more party members to pay for it. You can even split an individual line item up so that party members only pay for the quantity they are responsible for!

Description

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Split a Bill by Line Item

To split a bill so that each party member only pays for the line items they are responsible for, just tap the "By Line Item" button on the home screen. On this screen, you can tap the "Edit Party" button to add and remove members from your party, or you can tap the "Edit Bill" button to add and remove line items from your bill. Once you've finished creating your party and bill, type in the local sales tax percentage and press the "Split" button. You will be asked to select one line item at a time from your bill. For each selected line item, you will be asked to select the party member(s) who are responsible for it. You can then choose to split the total cost of the selected line item evenly among the selected party members or break it down further so that each member only pays for the quantity they are responsible for. Once you've finished assigning payments to each line item on your bill, you can either edit a line item by selecting it again or just press the "Finish" button to return to the main screen and show the amount each party member is responsible for, as well as a handy tip guide.

Modules and Submodules

Sign Up Page

>USERNAME

>PASSWORD

>RE-ENTER PASSOWRD

>FULLNAME

>GENDER

>EMAIL

>PHONE NO 2.SIGN IN PAGE

>USERNAME

>PASSWORD

>FORGOT PASSWORD

> USER CAN REGISTER

>USER CAN LOGIN

>USER CAN LOGOUT

>USER MAYBE FORGOT PASSWORD

1. Bill Splitting Form

2. User can Add Expenses Due of other user

3. User can Remove Expenses Due of Other User

4. User can Forgive Expenses Due Payment of Other User

5. User can Balnce the Expenses Due Among Them.

6. Admin User can Show the Group Expenses and Distribute Equally Among Them.

MAINTENANCE

• User's Profile

• Database Modules

Methodology

This section will guide our team to successfully accomplish the goals set for the research. Here, the research project methodology describes the steps and approaches to be followed to attain final product. As explained above our project is of splitting the expenses between the groups and settling it and also to efficiently manage the personal expenses as well. However, our projects will have additional features included as part of our research so that it makes our project unique in the market. These features would make the project more efficient and very useful for our users.

Apart from the benefits user gets there is also an important use of user expense data that can be used with his/her permission for data mining for several other functionalities to be applied in market by analyzing user expenses.

User login/registration

Like most of the application this will have a user login screen and option for registration. The user must register in this application when he/she is using it for the first time.

However, the user who is already registered can login to

the application using his/her login credentials that are created by the user at the time of registration. User can also register themselves by using their Facebook of Gmail account.

Creating/alter of user group in this application user have the

option to create a new group or to alter the existing group created by his/her companion and added them. The user can create, alter, delete the group as the user intends.

Adding income/expenses

Every user in the group have the option to add incomes and expenses accordingly. Each record should have details like date of occurrence of item, details of items etc. This application will provide the drop-down option to choose the splitting method to be applied on the total expenses

Conclusion

I created this programme to assist users in tracking their own spending, their contribution to group expenses, maintaining monthly income, recurring payments, settling every share on the spot. It also informs you of "who pays who and how much." This programme will reduce the need for humans to settle the shares. It will also reduce human interference in the dividing process, resulting in the most precise results. The application will replace the usage of written notes, spreadsheets, ledgers, which cause misunderstanding and data inconsistency issues while recording and splitting expenses. I explored adding different functions to the programme as part of my research to make it more beneficial to the user. Some of the additional features include the ability for users to sign up for the application using their current email or social network account, which will synchronize the users' profile information to the application. Aside from that, this programme may be used to collect user expense data with permissions and then utilize those sample data as variables to examine spending trends. Spending can be categorized through data mining techniques, the user can eliminate unnecessary spending, increasing his/her savings. This programme will not only help users keep track of their spending; however, it will also resolve them on the spot, which may be a laborious task.

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