A Novel Expense Tracker using Statistical Analysis

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Abstract - Expense Tracker is used to maintain and manage data of daily expenditure in a more precise way it can give profound knowledge of their expenses. User can choose the kind of spending they wanted to do, even the amount etc. and all these details is going to be saved by the internal database storge. In this system user can actually have a knowledge about their expenditure on their daily basis, weekly as well as monthly basis.

This systematic way of storing your information related to your expenses would help you to keep a track of your expenditure and further you do not have to do the manual stuff. Some statistical analysis has to be done to be able to give users correct information on their expenses and help them spend better. This helps the society to prevent the issues like bankruptcy and save time from manual calculations. User can provide his/her income to calculate the total expense per day and the results will be stored for each individual user. People when usually go for trips with friends, can use this tracker to maintain their expense.

***Index Terms* - Expense, Income, Application, Budget, security, Data Mining.**

I. INTRODUCTION

'Expense Tracker' to efficiently manage house-old budget. Our system will allow user to keep track of their expenses. Some statistical analysis has to be done to be able to give users correct information on their expenses and help them spend better. This helps the society to help them from issues like bankruptcy and save time from manual calculations. For using such application, a user needs to provide his/her total income or the amount he/she is spending per day and each user details or information are going to be stored in a unique way.

Every user is required to register on the system to create a record unique to the user. This novel expense racker uses statistical analysis which are going to keep a track of your expenses and would even give you results accordingly. If you spend too much on a particular day this smart feature will help you to sort things out it will minus the expenses from the next day or if it lesser then it will add your saved amount for that day in the savings. Tracking application will generate a report accordingly on monthly or weekly basis and would generate a statistical analysis of your expenses in a more sorted and easier to understand way.

II. LITERATURE REVIEW

An exhaustive literature survey on related topic suggest that earlier tracking was performed manually. These things were done in an old school way you can say more likely in a notebook or copybook these things were written as per the willingness of a person in simple words you can call is as "The quite manually stuff". Then after that they have calculate the entire expenditure at the end of the month or week and a report is generated against the expenditure in comparison to the previous month or information related to that. So, they face a certain problem that time:

- Data is not accurate
- Reports in not up to the mark
- A single mistake in a manual calculation and actually cost you much
- Its time consuming boring and most of the time insufficient
- Going through all the data back then rewriting them off actually makes way fussier
- It can be easily stolen or loss as well your information is not safe there

(Babad and Balachandran, 1993) states that traditional cost accounting systems maintain all overheads in one pool and give equal weight to all activities and costs in it We always have known that "pen is mightier than sword" but that thing doesn't fit with every specific tasks it varies from need-to-need or tasks-to-tasks these days when the amount data is quite enormous. It becomes way more difficult to handle them off.

Soon excel also become a way on maintain a record of expenses and analysis. Though excel was an effective

software to handle such stuff but still lacks in many things so some of the researchers even started using excel with certain tools designed by them.

A research at university on Tennessee on expense tracker of by (Dan Underwood, 2011):
In which using excel accounting team designed a Cost Allocation tool 1 in which a spreadsheet is used to allocate the product category both by site and the cooperation and a Cost allocation tool 2 which is a developed to further integrate and allocate cost to identify which manufacturer is profitable or which is not. This research used excel and designed this CAT tool in which both the spreadsheets are required to use to identify where we could reduce expenses or better managed it.

(Girish Bekaroo, 2007) did a research on intelligent online budget that manages the expenses and used to give the graphical analysis of data.it uses a Rational Unified Method (RUP) which was way more efficient and advantageous in the way it used to promote code reuse and encapsulation.in which CSS and xml technologies has been used.

Students of Sikkim Manipal University an income expense for housewives which not just counts the amount but also maintains date and calendar record of the person as well they used the clustering technique to maintain their data storage.

(Stephan snow and Dhayal Vyas, 2015) mentioned in his paper. "Managing finances is a practice carried out daily in homes across the world. Despite this, the practice is not yet a strong focus for HCI work in the home".

Researchers of Nandha and Anna university (2016) created an android version of expense manager in with they used post and remark techniques for underlining the expenses and some of the data mining features for analyzing the market value well.

(R N Rajprabha, 2017) created an android version of family budget manager with later evolved in PDA and tablet features.

(Ravi Sharma, 2017) stated users sometimes feels uncomfortable in sharing their personal information with an app and he suggested security and usability are two major concerns. Even the advanced UI needs to maintain retention.

Researchers of Mother Terresa university, Andhra Pradesh (2019) also stated an online income and budget tracker in a website mode but that project used csv mode to store data but that project had a drawback in its existing model as it can't handle the data efficiently in addition to that it wasn't user-friendly and an unpopulated data project.

All these researches above suggest some of the modern way of dealing with expense tracking. Many of the researches like these actually represents the evolution in ideas with time "evolution is not a necessity it's more like change in thinking and time" in which we analyze estimate and evaluate the things according to new requirements. But still the kind of technology used in it is kind of projects were used in previous days there are certain android apps as well still they too also have different consequences as well as drawbacks in itself. And I also feel like these should be way easier to handle to a desktop device. As sometimes android apps will provide in accurate results if the information is incorrect and many of the times, we almost got forget to enter details too and most them don't even provide notification for that as well.

Based on the literature review. This study shows the evolution as well as the comparison from selected researches according to the adopted knowledge in it. This paper suggests some effective changes that are still needed and why the transition is necessary.

III.PROBLEM FORMULATION

The problem of current generation population is that they can't remember where all of the money they earned have gone and ultimately have to live while sustaining the little money they have left for their essential needs. In this time there is no such perfect solution which helps a person to track their daily expenditure easily and efficiently and notify them about the money shortage they have. For doing so they have to maintain long ledger's or computer logs to maintain such data and the calculation is done manually by the user, which may generate error leading to losses. Not having a complete tracking system, generates a regular need of entering daily data of the expenditure and total estimation till the end of month.

The purpose of this tool is to:
A) Keep tracking daily expenses and budgeting;
B) Save money for necessary expenses which in return will help to plan the future investments.

IV.FEASIBILITY ANALYSIS

A. Technical Feasibility

This analysis focuses on the technical resources which available to use. It helps in determining whether the technical team is capable of converting the ideas into working models. It also evaluates the hardware, software and other technological requirements of the designed system.

B. Operational Feasibility

This analysis has a simple User-Interface. Anyone with basic knowledge of Android device can use Expense Tracker. It takes few seconds (approx. 2 sec) to take you from home screen to front page. With a click data can be entered.

C. Economic Feasibility

The only cost for building this is for printing and binding report files and system uses cost. In Addition to this, effort and time by every team member is also involved for this project. Also, the user doesn't need to pay any amount to use this app. Just install and use the application. And hence, ET is economically feasible for anyone with the application.

V.WORKING

The working of the system is simple. The user will first go to the welcome page of Expense Tracker. Here he/she will be given an option to either create a database by using Sign-Up option or enter an existing database by using Login option. If the user does not have any database then they have to create a database after which they will be redirected to the login page to enter their database details. After this what comes next is the home module for entering data for Income and Expense. Here the user will enter their income amount as well as daily expenses. These will be stored in the database and then a summary be created. This will include a graph with income-expense comparison. If the income is greater than total expense, then the remaining income will be added to the income of next time and if the expense is greater than income, then the expected expense will be calculated for next day to warn the user about the expenditure limit which will help in balancing out the amount.

### A. Splash Screen

Shows the loading of Expense Tracker

B. Welcome Module

This module is used as a welcome page to which is configured as the face of the project. On this page we are given a choice to registering into an existing database using Login Button by having pre-made login credentials or to make a new database for a new user using Sign-Up Button.

C. Login Module

This module will be used to enter an existing database with the help of pre-made login credentials. After entering the correct login credentials the user will move to the Income-Expense page where he/she can enter their data. It also contains the option to register in case there is not such database as entered.
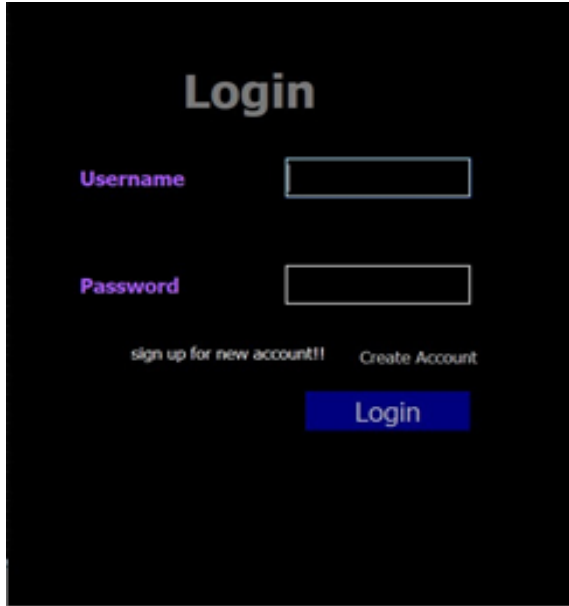
D.   Sign-Up Module

This module will be used to create a new database for new users by entering details such as username and password. After creating the username, the user will be re-directed to the login page to enter the newly made login credentials and move towards the Income-Expense module.
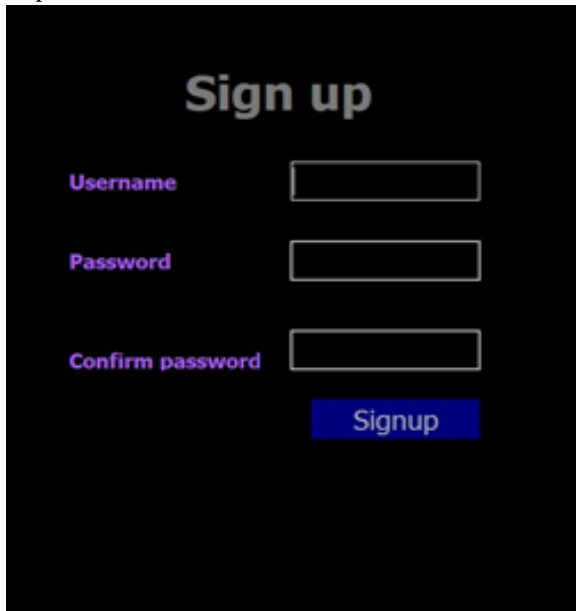
E.   Income-Expense Module

This module will be used to enter the income and daily expense of the user, which will be stored in the database. This module will also compare the two tables and give a graph between Income and Expense.

It will also calculate the remaining income after all the expenditure and add it to the income for next time. If expenditure is greater than the income then it will calculate how much expenditure should be made next time to balance it all out.
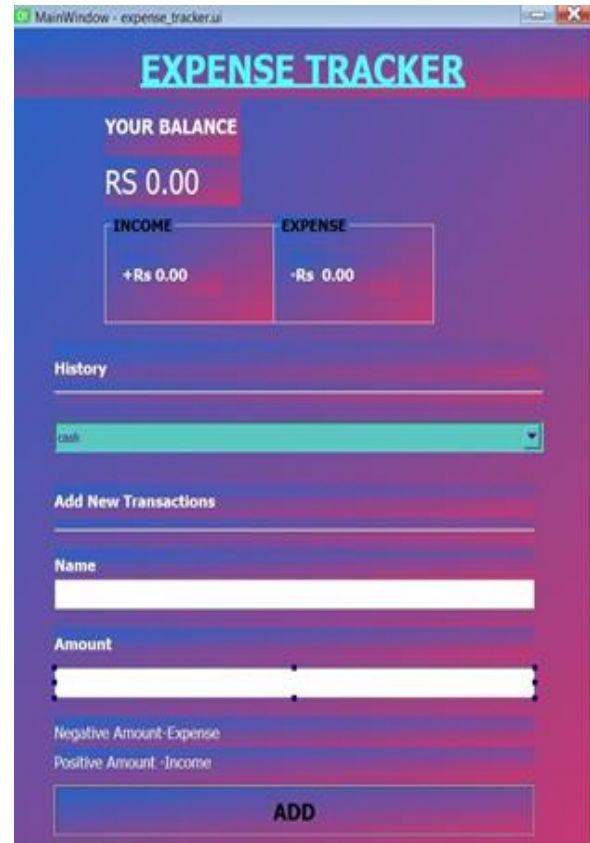
F.   Expense Report Module

Daily Expense Tracker is a tool which allow users to keep track of their expenditure to ensure they stick to a budget and don't overspend. Such system incorporates several modules to provide an innovative and user-friendly interface. Including the option of setting a monthly income and savings, it also helps user as they can monitor how much they are spending on a daily basis. By doing analysis of the inputs made to this, it will help the users understand where they spend their money the most, so that they can devise method to cut back on spending extra on those particular items. Also, the categories show the how much they spend on the particular categories and also represent through graphical representation. Also, to Track the expenses of user we have add a history chart in which we can represent our expenses of last 6 months with the help graphical representation and also

it shows the total expenses of 6 months in the module so that we can manage and track the expenses monthly.
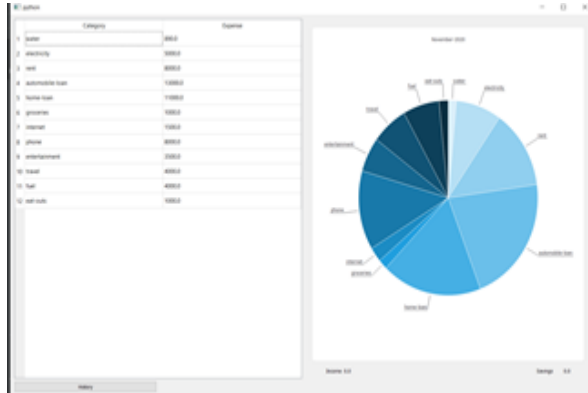
G. Working

So, the main point is where is the database stored and how it is able configure the reports in the modules so we created the module name config which helps in store the data which is entered by the user the main advantage of the config file is that it will store your data in the local files of your system and no internet is required to show and save the data in file. It will be in the BASON format so that it is difficult to decode. It will default the categories and set, read, write, delete and manages the data store in the modules.

We can easily find the file with .config name in the system file stored the data.

VI.CONCLUSION

Tracking the daily expenses can not only help in saving money but also help in setting financial goals for the future. If we know where our money is being spent every day, it is easy to set some cutbacks and such to help reduce expenditure. This project is developed to work more efficiently in comparison to other trackers and avoid manual calculation. It is developed to be efficient and look attractive at the same time.

VII.FUTURE SCOPE

In future the Expense Tracker can be enhanced by adding the feature to "incorporate a shared expense group" apart from keeping a personal expense log.

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