

Loan Calculator App based on Fuzzy Logic

Group 2

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Problem Definition

The problem is that in India, the desires of people are increasing at a very high rate to have all the comforts like having a good car, house etc. but these require a lot of money and most of them are not in a condition of paying such a large amount at once. Hence here comes the need of loan.

But just for the knowledge of an approximate estimate of the loan he is eligible for, he has to take out time from his busy schedule to go to bank. It generally turns up to be a hectic time taken job. Banks may be located far away or there is a lot of rush in bank. To counter this problem, we have come up with an android app which will provide solution to queries related to the loans.

This app is a kind of loan calculator which will tell the user about how much loan could be sanctioned to him. This will help the people in saving their valuable time and facilitate them to get as many results as wanted according to different inputs. Besides, this it can also be used anywhere and anytime.

Hence, through this project our aim is to show the implementation of fuzzy logic so as to overcome the complexities which may be caused due to non-involvement of membership functions and fuzzy logic concept. It has been our effort to replicate an easy understandable and flexible app which is easy to use and provide solutions to loan related queries.

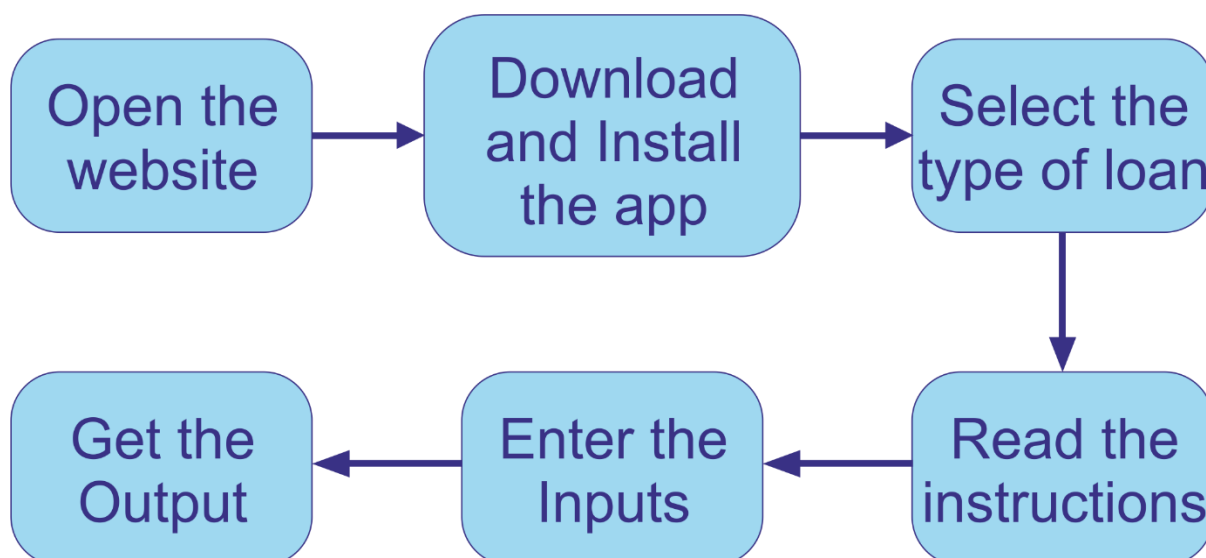
Components of the problem

Our project involves a set of components working together to meet up the purpose from beginning to end. The components include,

- a) **The Android Application:** This app provides a user-friendly interface. This app provides the total loan sanctioned and instalment to be paid on the basis of some inputs like income, mortgage value and time duration of paying the loan using some fuzzy functions.
- b) **The Website:** We have designed a demo website which provides the details of our project. This website also allows the user to download the .apk file of the app.
- c) **The Feedback Form:** We believe to help us stride forward in our future projects the fundamentals of our project should be clear, and we don't want to miss out any ideas or improvements from our fellow peer group. Thus we created a google feedback form to get an overall idea how much did we fair on our effort.

- d) **PowerPoint Presentation:** A presentation is the only form in which a big concept can be broken to basic parts and indulged us as we go through it. A presentation needs to be illustrative and ease to eyes, thus we did our very best to present our ideas in front of you in a PowerPoint presentation.

Stepwise procedure to use the app



Terms used in our app

The inputs provided are passed through various functions to provide the final outputs as:

- **Income** – The Annual gross Income of the user.
- **Mortgage** - The actual value of good for security of loan.
- **Tenure** – The period of returning the principle amount of loan along with its interest.
- **Interest rate** – The percentage of a sum of money charged for its use.
- **EMI** – The monthly instalment user has to pay till his loan tenure in order to repay his loan completely.

Data History set used

We needed to refer the major banks in India like State Bank of India to define the most appropriate eligibility criteria for an accepted range of incomes, mortgages and other values. The aim of our project is the implementation of fuzzy logic which makes it very flexible and it has been remained untouched by most of the earlier attempts made on similar lines giving more satisfactory results than the conventional methods used.

Marketing strategy

The function and features of this app makes it an easy to use for all class of people. Even for students this app can be helpful to make them realise the Education loan criteria well. It is known from the statistics obtained from the surveys about use of android mobiles at a large extent in India. Even

Google had claimed in 2012 that Android adoption rate had grown division by over 500% year-on-year in developing countries like India, Brazil etc. Hence we chose android platform for the application development. This app could also serve advertising purpose of the bank and increases service and facilities of the banks.

Limitations

Due to time constraint, we have kept limited functions in our app. Also, we have not used any economical knowledge or profit maximization strategies, since our knowledge limits to fuzzy logic. Keeping all economic factors apart, we used basic mathematics and concept of fuzzy logic to develop our app. Thus we know our app has many limitation, but this is only small initiation of a vast domain.

Future aspects

This app exhibits a lot of potential for its future use in India. Use of loan calculator helps us plan our loan more effectively. It is an app which can be used anywhere.

This app can later be used to even apply for loan directly without having multiple visits to banks thus managing the work much more efficiently. This app can be made more reliable by providing it in different languages. Thus, in India which is a linguistically diverse country, this could be of great advantage.