

Project :- Using fraud detection systems for Finances

Theme:- Finance

Team Name:- Taiga

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Problem Statement

“ Using fraud detection systems for finances ”

Theme :- Finance

Software:- MATLAB

Concept Applied:- Fuzzy Logic

How We Started?

Lets krack it!

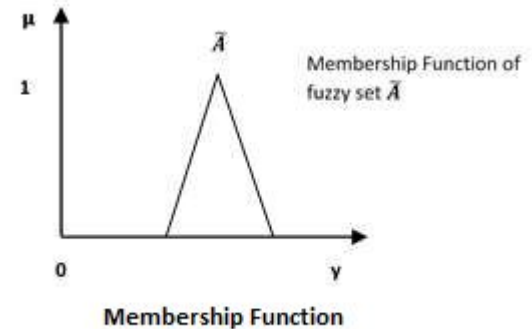
- 💡 The finance fraud is dramatically increasing and with these huge number of transactions, finance fraud detection is a big challenge for banks to minimize their losses and for customers to feel secure.
- 💡 Why not include the concept of **“fuzzy logic”**.
- 💡 Let's define some boundaries to judge:-
 - a) **monitoring user's behaviour** to estimate
 - b) detect or avoid **undesirable behaviours**.
 - c) To correctly identify a transaction as :- **legal , Suspicious , Fraud**

Lets get you to Concept 🔥

What is fuzzy? And why only using MATLAB not ML,AI,DL,ANN...etc.?

Membership functions characterize fuzziness (i.e., all the information in fuzzy set), whether the elements in fuzzy sets are discrete or continuous. Membership functions can be defined as a technique to solve practical problems by experience rather than knowledge. Represents the degree of truth as an extension of valuation

The toolbox lets you model complex system behaviors using simple logic rules, and then implement these rules in a fuzzy inference system. You can use it as a stand-alone fuzzy inference engine.



How we Planned?



Concepts we will use:-

- a) fuzzy logic method
- b) fuzzy rules
- c) membership functions
- d) fuzzification and defuzzification
- e) MATLAB functionality

Make it work!



Test Cases will use:-

Time:- Mid

Low

High

None

Amount:- Mid

Low

High

None

Location:- India

Outside India

Outside Asia

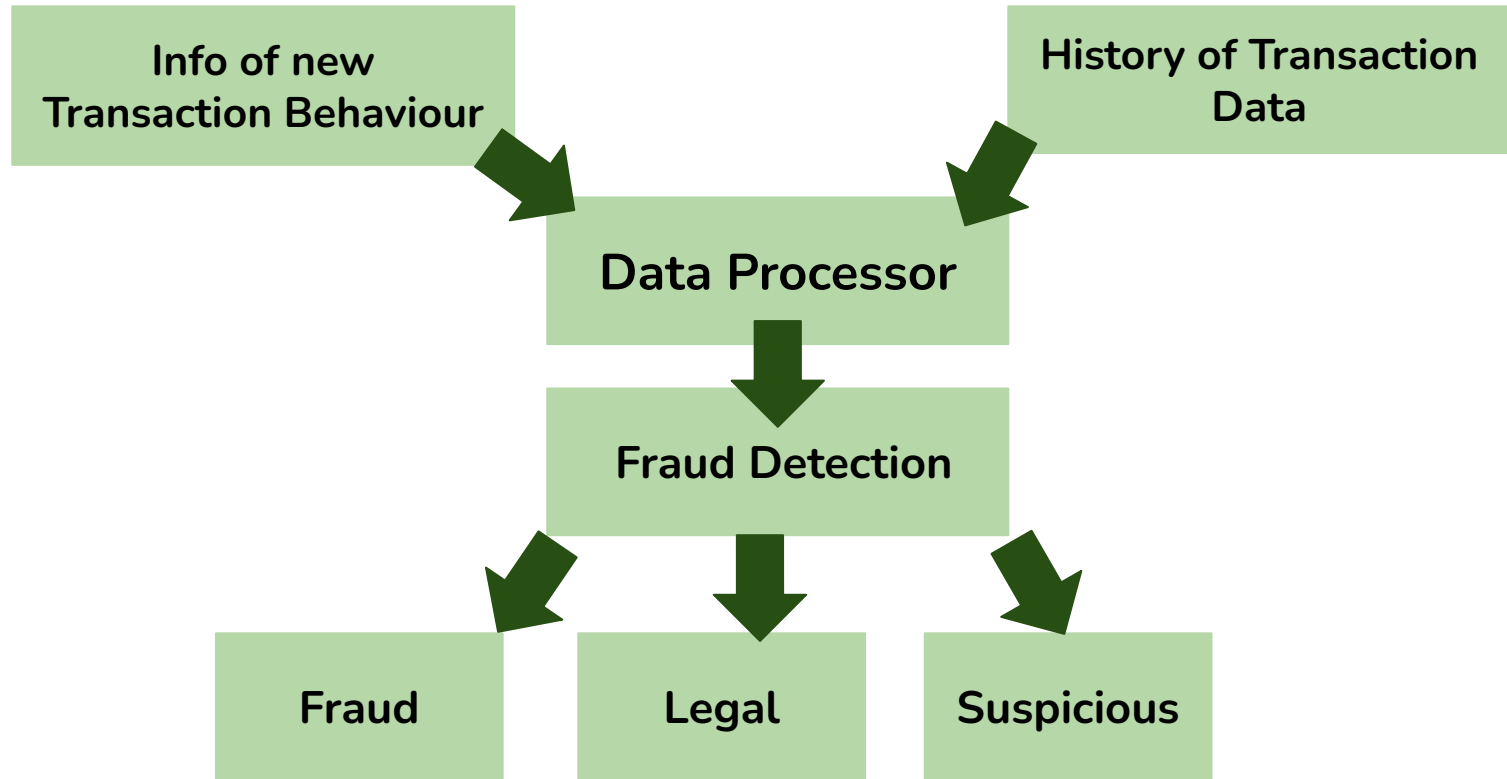
None

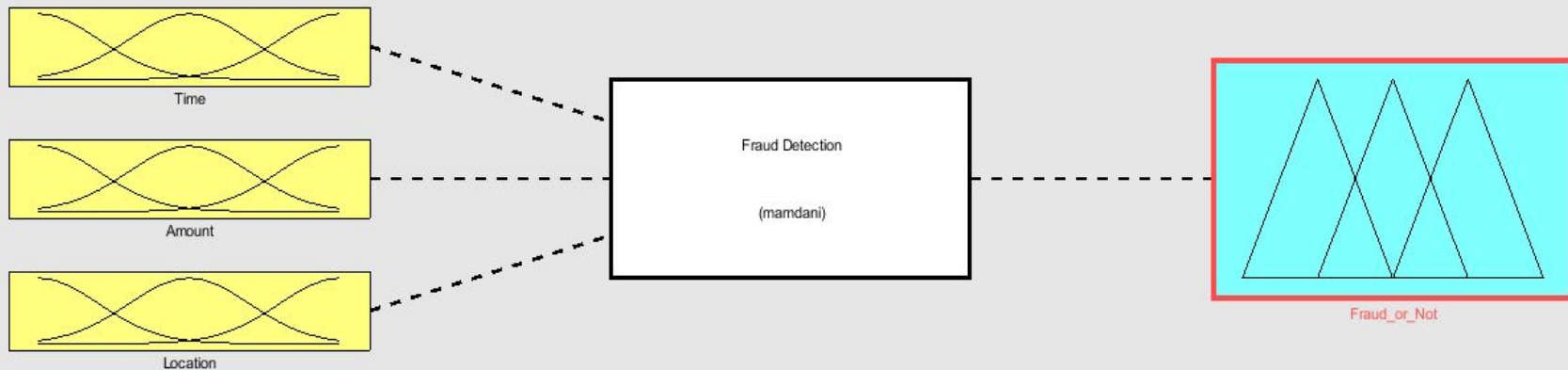
Output:- Legal

Fraud

Suspicious

Proposed System





FIS Name: Fraud Detection

FIS Type: mamdani

And method min

Or method max

Implication min

Aggregation max

Defuzzification centroid

Current Variable

Name Fraud_or_Not

Type output

Range [0 3]

Help

Close

Updating Rule Editor

What can be said?

- 💡 requires accurate and fast computing methods to reduce the computational time
- 💡 uses the existing data in the transaction statement for decision making
- 💡 no special tools are needed for data preprocessing.
- 💡 Can extend our research area to contain big data analysis representing the big number of transactions happening on daily basis.

Thank You...