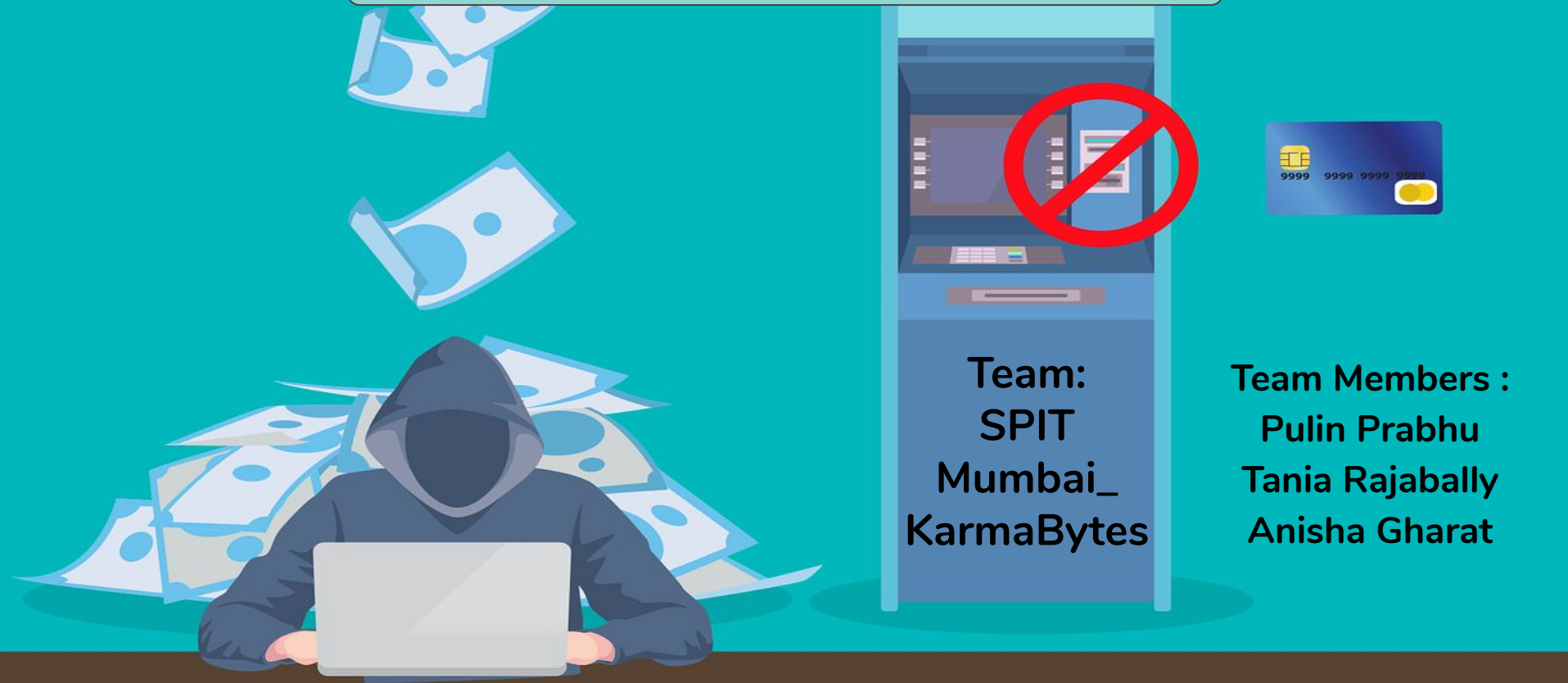


TechE

FRAUD DETECTION SYSTEM

Deloitte.



College: Sardar Patel Institute of Technology
Theme: Data Science / Machine Learning

TECHNOUTSAV 3.0

Round 2

Phase 3 – Proof Of Concept - Prototype

Defined Deliverables

Sample

What is the qualitative and quantitative impact of your proposed solution

Provided in this presentation



Issue2Impact

Detailed Solution Design and Architecture
(includes Data Model Design)



Solution Design
& Architecture



DataModel

Solution/Code to be made available on cloud

Development is done on cloud
(Details of code components is available in execution guide)

Test Data to be made available on cloud

The test data is available in the form of as per designed Data Model
(Details are available in execution guide)

Executed Test cases and Results

Test case is attached with the submission



Test_Case.xlsx

Execution Guide (including cloud login credentials)

Step by step guide to install application with screen shots are attached

Qualitative/Quantitative Impact of our Solution

To understand the qualitative and quantitative impact of the business model / proposed solution we need to look at a few key evaluation questions (KEQs).

➤ **Quality of intervention**

- A 99.9 % accuracy(Online Financial Transaction Frauds) and 97.6%(Credit Card Transaction Frauds) makes for a high quality solution that can be adapted

➤ **Implementation**

- Decision Tree implemented for online financial fraud detection
- Linear Gradient Boosting Classifier for credit card transaction frauds
- User friendly UI / Dashboard provided for smooth functioning and monitoring

Qualitative/Quantitative Impact of our Solution

- **Adaptations**
 - Predictions can help the company monitor fraudulent transactions
- **Did it produce intended results**
 - Verified with test cases
 - Detection of frauds

Overview Implementation **Test**

Enter input data

C553264065

oldbalanceDest
0.00

newbalanceDest
0.0

isFlaggedFraud
0

Predict

```
{
  "predictions": [
    {
      "fields": [
        "prediction",
        "probability"
      ],
      "values": [
        1,
        0
      ]
    }
  ]
}
```

Qualitative/Quantitative Impact of our Solution

- **Unintended results(positive/negative)**
 - Few Inaccurate predictions may require extra caution
 - Consideration of other affecting factors should be done
- **Barriers and Enablers**
 - Other factors influencing frauds to be taken into consideration
- **Value of results for customers**
 - Safety and security of customers assets
 - Enables financial institutions to monitor frauds by visualization
 - Saves cost



Fast, Safe and Secure

Qualitative/Quantitative Impact of our Solution

- **Best use of available resources**
 - Present data collection strategies of the organizations can be utilized
 - Saving of cost and resources
 - Automated prediction and notification
- **Sustainability of positive results**
 - Improving model on the basis of feedback
 - Including as many affecting factors as possible

Qualitative/Quantitative Impact of our Solution

Based on the KEQs as seen in previous slide we can conclude that :

➤ Qualitative Impact

- Reduces cost
- Less time required
- Lesser False Negatives /
Higher Accuracy
- Higher speed



Qualitative/Quantitative Impact of our Solution

➤ Quantitative Impact

- As discussed 93% merchants carry out manual review
 - This method reduces / rules out the need for that to be done
 - Hence impacting that mass group of end users
- Increased adaptation will lead to higher accuracy
- With an added level of detection mechanism the users shall be at ease