# CURRENT ENVIRONMENT DESCRIPTION

## 2.1. CURRENT SYSTEM DESCRIPTION

The current system has a database in which data will be stored, this data will be patterns on the spending habit of the card holder; we’re using neural networks for the detection part of the system , it figures out any inconsistency with respect to the “usual” spending patterns and then it will read the range of the card occurrence in the system and based on the range of the occurrence that measures the distance between value of whether fraud is detected or not, the neural network will transfer the output to the system and the system will Then it will issue an alarm which indicates that something wrong has happened with the credit card usages. A dynamic password can be sent to the user’s mobile phone, so as to reduce the number of false positive, false positive means an alarm or alert that indicates that an attack is in progress or that an attack has successfully occurred when in fact there was no such attack.

### 2.1.1. Current system overview

Input Devices: ATM,

Swiping Pad

User

Data Input

Bank System

Bank

-Sends Alert

-Detects Fraud

-Send Alert

-Insert Card

-Insert Pin

-Runs Transaction

-Over Spends

Thief

-Stores Spending Patterns

Card Handler

-Runs Transaction

-Insert Card

-Insert Pin

|  |  |
| --- | --- |
| Subsystem | Function |
| Card Device (Slot) | To insert card and require a pin from the card handler and will run the transaction |
| Bank System | Check and store data for the transaction purposes and store spending patterns for each recorded details of the card handler. It will contain a database that will store all the information about the card handler |
| Bank Operator | It will receive the alert message from bank system before it send the alarm to the user or the alert that fraud might occur |
| Card Handler | Is a victim to whose card, fraud will be detected |

### 2.1.2 Current System Hardware, Software and Network

**System Hardware**

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| --- | --- |
| **Hardware** | **Application Server** |
| Computers | Hyper Packard |
| Card Slot Device | Macro Sage |
|  |  |

**System Software**

|  |  |
| --- | --- |
| **Software** | **Application Server** |
| Website | Angular |
| Neural Network | Python |
| Operating System | Windows 10 |
| Database | Sequel Server |

**High Level Diagram**

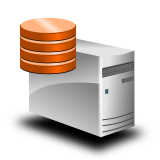
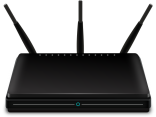
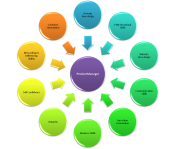
Internet

Fire wall

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System

ATM

**C:\Program Files (x86)\Microsoft Office\MEDIA\CAGCAT10\j0285750.wmfC:\Program Files (x86)\Microsoft Office\MEDIA\CAGCAT10\j0285750.wmfC:\Program Files (x86)\Microsoft Office\MEDIA\CAGCAT10\j0285750.wmfC:\Program Files (x86)\Microsoft Office\MEDIA\CAGCAT10\j0285750.wmfC:\Program Files (x86)\Microsoft Office\MEDIA\CAGCAT10\j0285750.wmfC:\Program Files (x86)\Microsoft Office\MEDIA\CAGCAT10\j0285750.wmfC:\Program Files (x86)\Microsoft Office\MEDIA\CAGCAT10\j0285750.wmfC:\Program Files (x86)\Microsoft Office\MEDIA\CAGCAT10\j0285750.wmfC:\Program Files (x86)\Microsoft Office\MEDIA\CAGCAT10\j0285750.wmfC:\Program Files (x86)\Microsoft Office\MEDIA\CAGCAT10\j0285750.wmf**

System Management

Firewall

Server

Work Station

Bank

Retail

### 2.1.3 Volume and Frequency

|  |  |  |
| --- | --- | --- |
| **Subsystem** | **Description** | **Volume and Frequencies** |
| Web Merchant | -Online Purchasing Transactions  -Online Statement Printing  -Online Cash Transfer  -Online Debit Order Transactions | - 2000 transactions per day  - 5000 transactions per day  - 10 000 transactions per day  - 1500 transactions per day  - 1 200 transactions per day |
| Automated Teller Machine | -Withdrawals  -Deposits  -Statements | - 25000 transactions per day  - 3000 transactions per day  - 1000 transactions per day |
| New Accounts | -Savings  -Cheque | - 200 transactions per day  -150 transactions per day |

**Interface with other systems**

|  |  |  |
| --- | --- | --- |
| **Interface** | **External Parties** | **Description** |
| External Swiping Pads | Retail Institutions | -User authentication for transaction  Validates Pin and run transaction |
| Automated Teller Machines | Banks | -User authentication for withdrawals |
| Database | Data Storage | -Keeping track of the spending habits |

## 2.2 Current Business Process

Events

* Database for the credit card detection is created and the neural network development is in progress.
* The front end of the system is also being developed.

Activities

* There should be a firewall that protects the system from being accessed by people who have no authority into doing so.
* The next step is to join everything together in terms with connection and the ability to test the system, the neural networks and the database need to be connected to the front end of the system.
* We also need to look at user acceptance testing so as to see if the users are able to use the system; this is by means of being training the users to be able to tell when there is an alert of fraud detection to avoid sending false positives.

CREDIT CARD DETECTION PROCESS

Pin Incorrect

Re-Enter Pin

Invalid Pin

Insert Card

Inserts Pin

Pin Correct

Store Spending Patterns

Database Data Storage

Run Transaction

Not Normal

Send alert to customer

Send Alert

Normal

## 2.3 Current Problems and Issues

|  |  |
| --- | --- |
| **Unique Number** | **Description** |
| 1 | -Neural networks are not yet finished in order for the system to be able to perform the detection process |
| 2 | -The front end or the interface must be able to perform everything that it ought to perform, for now it can only view the details of the account handler |
| 3 | -The storage format is not yet compiled |