

# **Detecting and Preventing Fake Cheque Scams**

Submitted in partial fulfilment of the requirements for  
the award of  
Bachelor of Engineering degree in Computer Science and Engineering  
By

SRINIVASAN (38110558)  
SRIRAM (38110560)



**DEPARTMENT OF COMPUTER SCIENCE AND  
ENGINEERING  
SCHOOL OF COMPUTING**

## **SATHYABAMA**

**INSTITUTE OF SCIENCE AND TECHNOLOGY  
(DEEMED TO BE UNIVERSITY)**

**Accredited with Grade "A" by NAAC**

**JEPPIAAR NAGAR, RAJIV GANDHI  
SALAI, CHENNAI - 600 119**

**MARCH - 2022**



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## **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

### **BONAFIDE CERTIFICATE**

This is to certify that this Project Report is the Bonafide work of "Srinivasan (38110558), Sriram (38110560) " under my supervision from December 2021 to March 2022.

**Mrs.Anto Praveena M.E, PH.D.  
Internal Guide**

**DR. L. LAKSHMANAN M.E., PH.D.  
Head of the Department**

Submitted for Viva-voce Examination held on \_\_\_\_\_

**Internal Examiner**

**External Examiner**

## DECLARATION

We **Srinivasan A** (38110558) and **Sriram T** (38110560) hereby declare that the Project Report entitled “**Detecting And Preventing Fake Cheque Scams**” done by us under the guidance of **Mrs.Anto Praveena** (internal) is submitted in partial fulfillment of the requirements for the award of Bachelor of Engineering / Technology degree in **Computer Science and Engineering**.

**DATE:**

**PLACE:**

**SIGNATURE OF THE CANDIDATE**

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## **ABSTRACT :**

The most eye-catching approach used to issue threats against clients is the use of a counterfeit check stunt. There isn't a solution in place right now to verify checks and detect fakes right away. Considering everything, banks should hold it together so that a time of additional time and date might be able to see the trick. Fundamentally more unequivocally, our framework helps the keeps cash with sharing data about gave checks and utilized ones, without revealing the banks' clients' own exceptional information. Counterfeit truly breaks down come in many plans. They may seem like business or individual checks, right hand's checks, cash orders, or a check passed on electronically. These tricks work since counterfeit checks for the most part look an immense heap of like authentic checks, even to bank prepared experts. They are reliably printed with the names and addresses of solid cash related foundations. Banks are remaining mindful of thriving relationship for cash exchange to client security reason obviously check with client and requires their consent. It what's more sensible real trust their have Register login and embraced by rule branch and extraordinary objective required boat off client and expecting client need to help surprising with causing they can help by give check to fabulous objective which passed to bank and amount to is exchange to exceptional practical and the bits of information concerning fair obvious inside and out exchange will pass on off supervisor branch and remained mindful of by fundamental branch. Expecting reaction got from concern client just, exchange will be occurred

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## **CHAPTER - 1 :**

### **Introduction :**

Information isolating between banks going preceding paying a check, each bank (Cashing-Bank) ought to guarantee that the check was truly given by a confided in ace in customer. This testament would be conceivable expecting bank share data about its gave checks. Considering everything, when a bank gives a checkbook to a client, it shares the data about the client and about the gave checks. Bank will share such data, fundamentally for client security since the clients have drawn in with this bank and not with another and for business question: persevering through that clients' data are open, nothing gets any bank a long way from reaching these individuals and offering them its affiliations.

In Our current society, checks represent one of the dominant payment methods. A check is an order written by a depositor instructing the bank to pay a specific amount to a recipient from the depositor's bank account. Unfortunately, numerous malicious scammers exploit some flaws in the banking system to commit frauds. Indeed, frauds employing fake checks are growing rapidly and cost billions of dollars. The number of complaints received by the Federal Trade Commission's (FTC) Consumer Sentinel Database (Sentinel) and the Internet Crime Complaint Center (IC3) more than doubled between 2014 and 2017. In this article, we focus on fake check scams. This fraud is achieved bytar geting people mainly through some email scam; establishing a relationship (a business

relationship most of the time); sending them overpaid counterfeit paycheck; and finally asking for the overpayment. Fake check scam has more disastrous consequences on the victims than many other attacks (e.g., phishing, malware spread, and so on). According to the U.S. Better Business Bureau (BBB), the Postal Inspection Service reports stopping fake checks with a face value of \$62 billion from entering the USA in fiscal year 2017 and another 13 724 counterfeit postal money orders totaling over \$14 million in 2017 alone . The survey for 2016 saw the first increase in check fraud losses since 2008.

## **CHAPTER – 2**

### **LITERATURE REVIEW :**

### **LITERATURE SURVEY:**

**Author:** Bernie S. Fabio, Angelique D. Lacasandile, Emeliza R. Yabut

Encroachments are acts that give damage to an individual or neighborhood. It upsets concordance, produces dread and discourages the standard exercises of the many. Appallingly, assessments say that there is a principal number of horrible practices in the Philippines that are not obviously offered all due appreciation to the bona fide informed trained professionals. This peril suffering not gave sensible activities will proceed to exist and give fear to the area. This study proposes the improvement of an adaptable application that assembles referred to awful direct reports in Metro Manila through free plainly supporting information. It means to give a setting to provoke from ghastly practices to report their encounters without going obviously to police headquarters. Individuals who have encountered a relative offense in the space would interface their reports with those in actuality clear offenses which have the decision to suggest an indistinguishable case. This would outfit specialists with a couple of perspectives about the circumstance that could help them in their assessment to guarantee that bastards are moved right away. Future works join awful direct assessment for repulsive lead figure and upset.

**Author:** Summit Kumar.

In November of 2017, a Dodos assault tried to isolate down the Internet relationship of the African country of Liberia. It was watched out for that the assaults burned through more than 500 Gaps data transmission of the Africa Coast to Europe (ACE) fiber interfaces that give the Internet to Europe and Africa. The episode remembers the deficiencies that exist for the Internet structure. We really want a reenactment attempted that can mirror the multi-layered nature of the Internet, yet permits to quickly test assaults, giving experiences that can apply to credible assault conditions. In this evaluation, we try to see such feeble focuses utilizing a redirection. This mix sums up our excellent work on 'Repeating Dodos Attacks on the US Fiber-Optics Internet Infrastructure' considered to be a full paper at the Winter Simulation Conference, 2017.

**Author:** Haris Šemić, Sasa Mrdovic

This paper proposes an execution of honeypot that sees and reports telnet assaults on Internet-of-Things (IoT) gadgets. The honeypot works with manual and Maria-based assaults. A multi-part technique is executed to accomplish adequate openness to disrupting traffic and security of amassed information. Settings and extra reports expected to run the honeypot are clarified. Honeypot is made a pass at utilizing Maria and results are investigated. Beginning there ahead, end and headings for future work are given

## **CHAPTER – 3**

### **METHODOLOGY :**

#### **3.1 ALGORITHM :**

##### **ALGORITHM USED:**

The AES appraisal (in any case called the Rijndael estimation) is an even square code computation that takes plain text in squares of 128 pieces and converts them to encode text using keys of 128, 192, and 256 pieces. Since the AES appraisal is seen as secure, it is in the general standard.

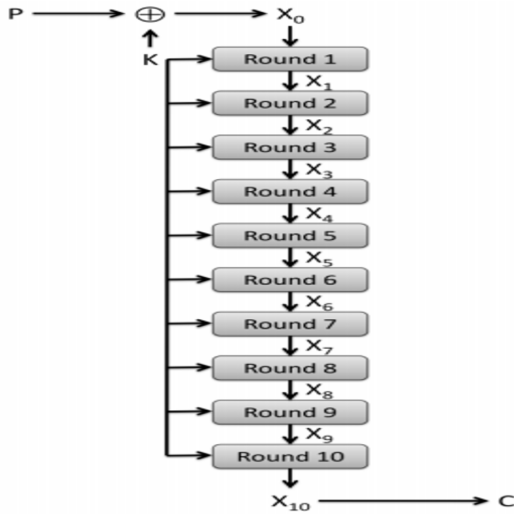
#### **3.2 AES FUNCTION :**

##### ***How does AES function?***

The AES appraisal uses a substitution stage, or SP relationship, with various rounds to pass on figure text. How much changes depends on the key size being used. A 128-digit key size works with ten changes, a 192-piece key size orchestrates 12 rounds, and a 256-cycle key size has 14

rounds. These rounds require a round key, but since only one key is inputted into the evaluation, this essential ought to be associated with get keys for each round.

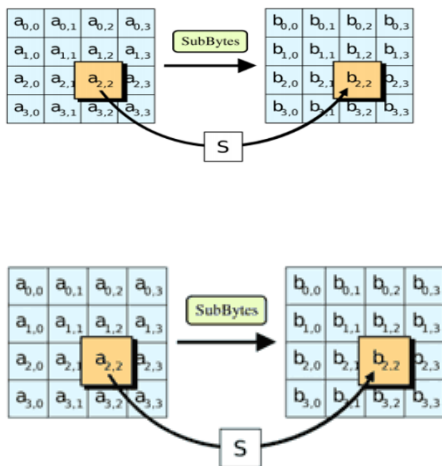
**Figure 3.1 :**



### Substitution of the bytes

In the basic turn of events, the bytes of the square text are substituted reliant upon rules worked with by predefined S-boxes (short or substitution boxes)

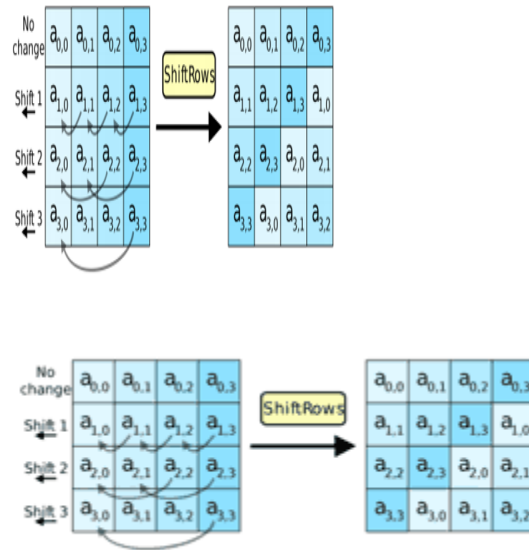
**Figure 3.2 :**



### Shifting the rows :

Next comes the change step. In this development, all lines with the exception of the first are moved by one, as displayed under.

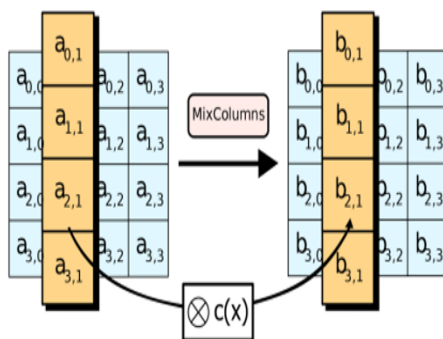
Figure 3.3 :

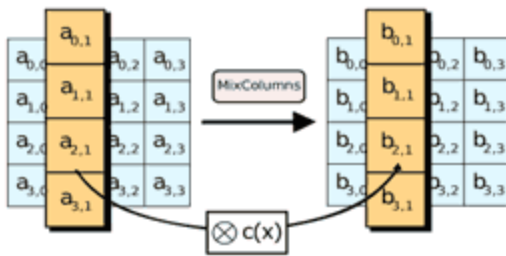


### Mixing the columns :

In the third step, the Hill figure is utilized to scramble up the message more by blending the square's regions.

Figure 3.4:

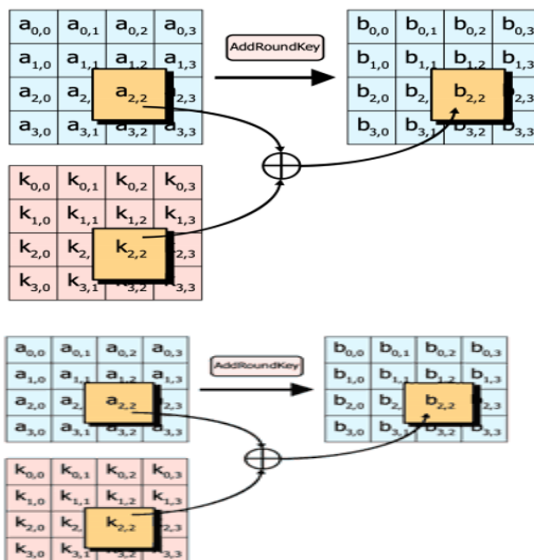




### Adding the round key:

In the last turn of events, the message is XO Red with at the point when done endlessly, these strategies guarantee that the last code text is secure the person round key.

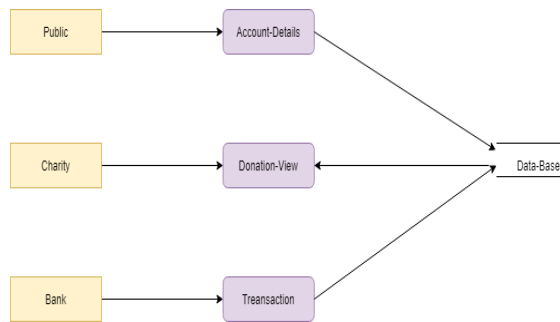
**Figure 3.5 :**



### 3.3 DATAFLOW DIAGRAM

A data stream diagram (DFD) is a graphical depiction of the "stream" of data through an information structure. It changes from the flowchart as it shows the data stream rather than the control stream of the program. A data stream diagram can in like manner be used for the portrayal of data dealing with. The DFD is planned to show how a structure is disengaged into more unassuming portions and to include the movement of data between those parts.

**Figure 3.6 :**



### 3.4 THE JAVA FRAMEWORK

Java is a programming language at first made by James Gosling at Sun Microsystems and passed on in 1995 as a point of convergence of Sun Microsystems' Java stage. The language translates a huge load of its sentence structure from C and C++ at any rate has a less risky article model and less low-level work environments. Java applications are usually joined to byte code that can run on any Java Virtual Machine (JVM) paying minimal admonition to PC organizing. Java is comprehensively huge, simultaneous, class-based, and object-composed, and is unequivocally wanted to have as barely any execution conditions as could truly be expected. It is relied upon to let application engineers "make once, run any spot". Java is considered by various people as one of the most convincing programming tongues of the 20th century, and is comprehensively used from application programming to web applications the java structure is another stage free that redesigns application development web. Java improvement's adaptability, adequacy, stage flexibility, and security gain it the ideal ground for network signing up.

#### Objectives of java

- To see spots of Java, considering everything, in our customary presence, research Java.com.
- Java has been attempted, refined, extended, and showed by a real region. Besides numbering more than 6.5 million producers, it's awesome and by and large exceptional on the planet. With its adaptability, comfort, and portability, Java has become vital for engineers by engaging them to:
- Make programming on one phase and run it on from an overall perspective another stage
- Make activities to run inside a Web program and Web affiliations

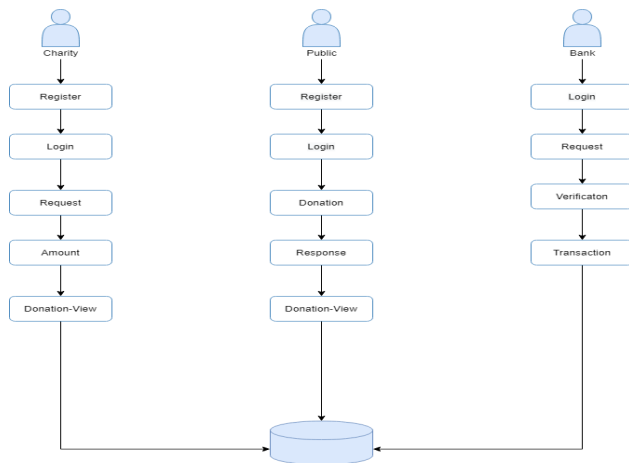
- Enable server-side applications for online gatherings, stores, studies, HTML structures making due, and that is only the start
- Join applications or affiliations using the Java language to make fundamentally changed applications or affiliations
- Structure solid and doable applications for phones, far away processors, insignificant cost purchaser things, and fundamentally another contraption with a modernized heart beat.

Today, various schools and universities offer courses in programming for the Java stage. In addition, coordinators can likewise invigorate their Java programming limits by researching Sun's (Java.sun.com). Web page, leaning toward Java progression focused warning, using the Java Tutorial and the New to Java Programming Center, and seeking after Web, virtual, or instructor drove courses. To be an Object Oriented language, any language ought to follow basically the four ascribes.

1. **Inheritance:** It is the most by and large saw system for making the new classes and using the lead of the current classes by extending them just to reuse the current code and adding choice a components relying on the circumstance
2. **Embodiment:** It is the strategy for joining the information and giving the reflection.
3. **Polymorphism:** As the name proposes one name diverse turn of events, Polymorphism is the procedure for giving the unmistakable help by the cutoff focuses having an overall name subject to the signs of the approach.
4. **Dynamic confining:** Sometimes we don't have the data on objects about their specific sorts while making our code. It is the technique for giving the best steadiness to a program about the specific kind at runtime

### 3.5 SYSTEM ARCHITECTURE:

**Figure 3.7 :**



## CHAPTER - 4 :

### CODE IMPLEMENTATION :

#### 4.1 AES JAVA :

```
package servlet;
```

```
import java.security.Key;
```

```
import javax.crypto.Cipher;
```

```
import javax.crypto.spec.SecretKeySpec;
```

```
import sun.misc.*;
```

```
public class AES
```

```
{
```

```
private static String algorithm = "AES";
```

```

private static byte[] keyValue=new byte[]
{'A', 'S', 'e', 'c', 'u', 'r', 'e', 'S', 'e', 'c', 'r', 'e', 't', 'K', 'e', 'y' };

// Performs Encryption
public static String encrypt99(String plainText) throws Exception
{
    Key key = generateKey();
    Cipher chiper = Cipher.getInstance(algorithm);
    chiper.init(Cipher.ENCRYPT_MODE, key);
    byte[] encVal = chiper.doFinal(plainText.getBytes());
    String encryptedValue = new BASE64Encoder().encode(encVal);
    return encryptedValue;
}

// Performs decryption
public static String decrypt(String encryptedText) throws Exception
{
    // generate key
    Key key = generateKey();
    Cipher chiper = Cipher.getInstance(algorithm);
    chiper.init(Cipher.DECRYPT_MODE, key);
    byte[] decordedValue = new BASE64Decoder().decodeBuffer(encryptedText);
    byte[] decValue = chiper.doFinal(decordedValue);
    String decryptedValue = new String(decValue);
    return decryptedValue;
}

//generateKey() is used to generate a secret key for AES algorithm
private static Key generateKey() throws Exception
{
    Key key = new SecretKeySpec(keyValue, algorithm);

```

```

        return key;
    }

}

```

#### 4.2 Fake Check Java :

```

package bean;

public class fakecheck {

    private String
    id,checkno,checkword,date,charityname,description,amount,address,city,filename,fileconte
    nt,encrypt,decrypt,status,pemail,cemail;

    public String getId() {
        return id;
    }

    public void setId(String id) {
        this.id = id;
    }

    public String getCheckno() {
        return checkno;
    }

    public void setCheckno(String checkno) {
        this.checkno = checkno;
    }
}

```

```
}
```

```
public String getCheckword() {
```

```
    return checkword;
```

```
}
```

```
public void setCheckword(String checkword) {
```

```
    this.checkword = checkword;
```

```
}
```

```
public String getDate() {
```

```
    return date;
```

```
}
```

```
public void setDate(String date) {
```

```
    this.date = date;
```

```
}
```

```
public String getCharityname() {
```

```
    return charityname;
```

```
}
```

```
public void setCharityname(String charityname) {
```

```
    this.charityname = charityname;
```

```
}
```

```
public String getDescription() {
```

```
    return description;
```

```
}
```

```
public void setDescription(String description) {
```

```
        this.description = description;
    }

    public String getAmount() {
        return amount;
    }

    public void setAmount(String amount) {
        this.amount = amount;
    }

    public String getAddress() {
        return address;
    }

    public void setAddress(String address) {
        this.address = address;
    }

    public String getCity() {
        return city;
    }

    public void setCity(String city) {
        this.city = city;
    }

    public String getFilename() {
        return filename;
    }
}
```

```
public void setFilename(String filename) {  
    this.filename = filename;  
}  
  
public String getFilecontent() {  
    return filecontent;  
}  
  
public void setFilecontent(String filecontent) {  
    this.filecontent = filecontent;  
}  
  
public String getEncrypt() {  
    return encrypt;  
}  
  
public void setEncrypt(String encrypt) {  
    this.encrypt = encrypt;  
}  
  
public String getDecrypt() {  
    return decrypt;  
}  
  
public void setDecrypt(String decrypt) {  
    this.decrypt = decrypt;  
}  
  
public String getStatus() {  
    return status;  
}
```

```
    public void setStatus(String status) {  
        this.status = status;  
    }  
  
    public String getPemail() {  
        return pemail;  
    }  
  
    public void setPemail(String pemail) {  
        this.pemail = pemail;  
    }  
  
}
```

## **RESULTS AND DISCUSSIONS :**

### **5.1 Conclusion:**

Banking stunts harden attempts to get to your record. Utilize this data to see, report, and safeguard yourself from them. These tricks work since counterfeit really looks at by and large look a great deal of like authentic checks, even to bank prepared experts. They are reliably printed with the names and addresses of ensured cash related establishments. They might even be real checks got on cash related harmonies that have a spot with rebate pressure disasters. It can take for a bank to sort out that the check is a phony

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