



# ANALYSIS OF CYBER CRIME DATA USING DATA MINING TECHNIQUE

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## ABSTRACT

Cyber Crime is one of the dangerous factors for any country. Cyber Crime analysis is the activity in which analysis is done on crime activities. These technologies have hindered the effective analysis about the cyber crime. Application of data mining concepts proved to yield better results in this direction. In this paper clustering and classification techniques have been used to analyze the cyber crime data. The cyber crime data considered in this paper is from Chhattisgarh police department this paper aims to potentially identify a criminal based data at the cyber crime using k-mean algorithm.

**Keywords:** Data Mining, Clustering, Classification, K-Mean Algorithm Program, Cyber Crime Data.

## I. INTRODUCTION

The present day, changes in social life style and circumstances of living make the humans to come across phenomena called cyber crime. Various agencies such as POLICE Department, Cyber Cell, CBI are working rigorously to combat the crime. But the challenges to analyze the crime and arrest the criminal activities is becoming more difficult as the crime rate is increasing many Algorithm have been projected by the researchers for effective analysis.the main disadvantage is that the volume of data with respect to the crime activities and criminals increased ,and there is a great need for analyzing the data, hence to have a better model the knowledge about the crime & the criminal always is always advantageous. This thought has driven towards the use of data mining techniques for analyzing this voluminous data.

The usage of data mining concept help to explore the enormous data and making it possible in reaching the ultimate goal of criminal analysis the usage of data mining techniques have several advantages it helps to cluster the data based on criminal /crime and thereby minimizing the search space. Based on the clusters the classification algorithm can be applied to classify the criminal in this paper we also used the k-mean algorithm programming in java.

## II. CLUSTERING CRIME

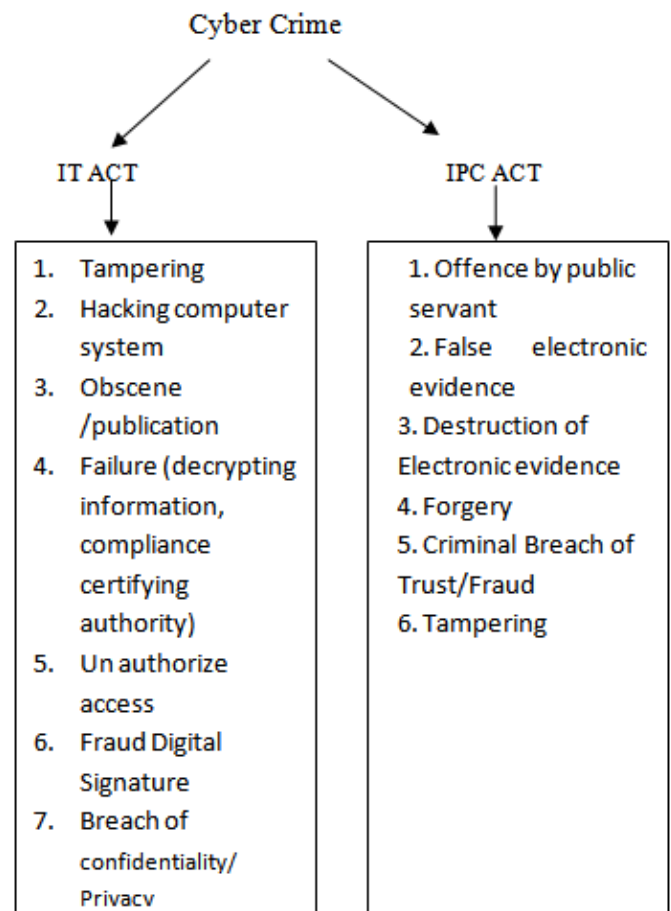
*Clustering:* Then the clustering techniques are used to fetch the information of criminals.

In order to simplify the analysis process the huge dataset available is to be clustered. The clustering in this paper is based on the type of crime. A data set is generated from the database available from the Chhattisgarh police department and a table is created by considering the National Crime Records Bureau 2009.

Considered in the manner all the relative crimes will be given with near values after applying clustering algorithm

on this type of crime feature we have got two clusters of cyber crime data they are IT ACT, IPCACT

**Fig 1**categories of crimes



## III. Cyber Crime Database

A data set is generated from the database available from the Chhattisgarh police department and a table is created by considering the National Crime Records Bureau 2009.

## IT ACT

ACT	No. of Cases	Weight
Tampering	1	11
Hacking	1	12
Obscene Publication	1	13
Fraud Digital Signature	1	16

## IPC ACT

ACT	No. of Cases	Weight
Forgery	32	24
Criminal Breach	11	25
Tempering	3	26

## IV. Experiment

Code In Java Language using K-Mean Algorithm.

```
import java.io.*;
import java.lang.*;
class km
{
    public static void main(String arg[])
    {
        int n=0;
        int arr[]={11,12,13,16,24,24,
                    24,24,24,24,24,24,
                    24,24,24,24,24,24,
                    24,24,24,24,24,24,
                    24,24,24,24,24,24,
                    25,25,25,25,25,25,
                    25,25,25,25,25,26,
                    26,26};
        int i,m1,m2,a,b;
        boolean flag;
        float sum1,sum2;
        a=arr[0];
        b=arr[1];
        m1=a;
        m2=b;
        int clust1[]=new int[arr.length];
        int clust2[]=new int[arr.length];
        do
        {sum1=0;
```

```
sum2=0;
        clust1=new int[arr.length];
        clust2=new int[arr.length];
        n++;
        int k=0,j=0;
        for(i=0;i<49;i++)
        {
            if(Math.abs(arr[i]-m1)<=Math.abs(arr[i]-
m2))
            {
                clust1[k]=arr[i];
                k++;
            }
            else
            {
                clust2[j]=arr[i];
                j++;
            }
        }
        System.out.println();
        for(i=0;i<49;i++)
        {
            sum1=sum1+clust1[i];
        }
        for(i=0;i<49;i++)
        {
            sum2=sum2+clust2[i];
        }
        a=m1;
        b=m2;
        m1=Math.round(sum1/k);
        m2=Math.round(sum2/j);
        flag!=(m1==a && m2==b);

        System.out.println("After iteration cluster1");
        for(i=0;i<9;i++)
        {
            System.out.print(clust1[i]+" ");
        }
        System.out.println();
        System.out.println("After iteration cluster2");
```

```

for(i=0;i<9;i++)
{
    System.out.print(clust2[i]+" ");
}

while(flag);
System.out.println();
System.out.println("Final Cluster");
System.out.println("Cluster 1");
for(i=0;i<49;i++)
{
    System.out.print(clust1[i] + " ");
}
System.out.println();
System.out.println("cluster2");

for(i=0;i<49;i++)
{
    System.out.print(clust2[i]+" ");
}
    
```

```

0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0
cluster2
24 24 24 24 24 24 24 24 24
24 24 24 24 24 24 24 24 24
24 24 24 24 24 24 24 24 24
24 24 24 24 24 25 25 25 25
25 25 25 25 25 25 25 26 26
0 0 0 0
    
```

**V. Result**

After iteration cluster1  
 11 0 0 0 0 0 0 0 0  
 After iteration cluster2  
 12 13 16 24 24 24 24 24 24  
 After iteration cluster1  
 11 12 13 16 0 0 0 0  
 After iteration cluster2  
 24 24 24 24 24 24 24 24 24

After iteration cluster1  
 11 12 13 16 0 0 0 0  
 After iteration cluster2  
 24 24 24 24 24 24 24 24 24

**Final Cluster**

Cluster 1  
 11 12 13 16 0 0 0 0 0 0 0 0  
 0 0 0 0 0 0 0 0 0 0 0 0

**VI. Conclusion**

This paper presents a java programming using mean algorithm of identifying a cyber crime. In these situations, in this paper we have tried to identify the cyber crime in 2009 in cluster form.

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