FUNDAMENTALS OF DATA ANALYTICS

PROJECT REPORT
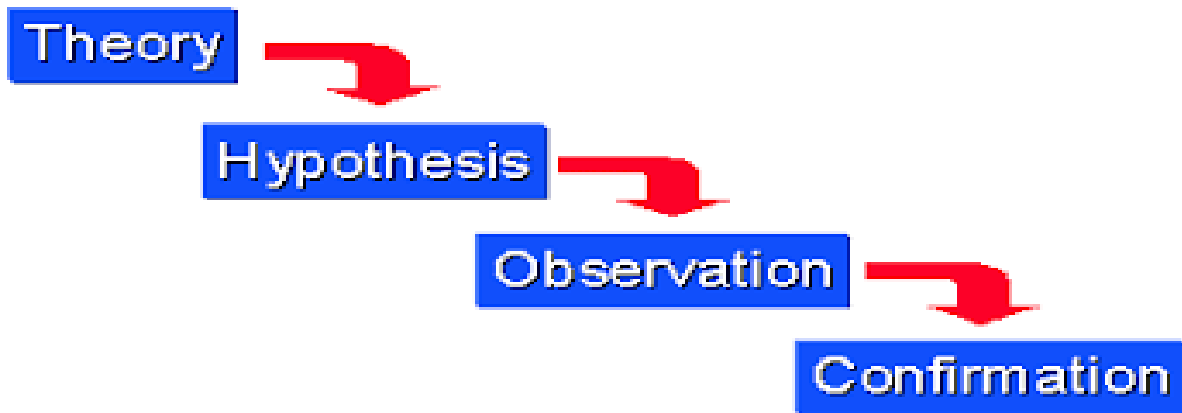
COURSE CODE: CSC3005

SLOT: E1+TE1

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TOPIC

CRIME DETECTION

DETECTIVE ANALYSIS

Crime analysis is a law enforcement function that involves **systematic analysis for identifying and analyzing patterns and trends in crime and disorder**. Information on patterns can help law enforcement agencies deploy resources in a more effective

manner, and assist detectives in identifying and apprehending suspects.

ABSTRACT

Data mining can be used to model crime detection problems. Crimes are a social nuisance and cost our society dearly in several ways. Any research that can help in solving crimes faster will pay for itself. About 10% of the criminals commit about 50% of the crimes. Here we look at use of clustering algorithm for a data mining approach to help detect the crimes patterns and speed up the process of solving crime. We will look at k-means clustering with some enhancements to aid in the process of identification of crime patterns. We applied these techniques to real crime data from a sheriff's office and validated our results. We also use semi-supervised learning technique here for knowledge discovery from the crime records and to help increase the predictive accuracy. We also developed a weighting scheme for attributes here to deal with limitations of various out of the box clustering tools and techniques. This easy to implement data mining framework works with the geospatial plot of crime and helps to improve the productivity of the detectives and other law enforcement officers. It can also be applied for counter terrorism for homeland security

INTRODUCTION

In most countries the detection of crime is the responsibility of the police, though special law enforcement agencies may be responsible for the discovery of particular types of crime (e.g., customs departments may be charged with combating smuggling and related offenses). Crime detection falls into three distinguishable phases: the discovery that a crime has been committed, the identification of a suspect, and the collection of sufficient evidence to indict the suspect before a court. Many crimes are discovered and reported by persons other than the police (e.g., victims or witnesses).

MAIN PURPOSE OF CRIME DETECTION

   The primary purpose of crime analysis is **to support (i.e., assist) the operations of a police department**. These functions include criminal investigation, apprehension, and prosecution; patrol activities; crime prevention and reduction strategies; problem solving; and the evaluation and accountability of police efforts.

HOW CAN WE SOLVE CRIME SCENES

1. Identify Scene Dimensions. Locate the focal point of the scene. ...
2. Establish Security. Tape around the perimeter. ...
3. Create a Plan & Communicate. Determine the type of crime that occurred. ...
4. Conduct Primary Survey. ...
5. Document and Process Scene. ...
6. Conduct Secondary Survey. ...
7. Record and Preserve Evidence.

Investigative techniques

In seeking "indicators of suspicion" in investigations, suspects will need to have had:

- Motive to commit the crime (for example, financial gain or to seek revenge)
- Means to commit the crime (including tools and physical capabilities)
- Opportunity to commit the crime (including being at the crime scene at the time of the offence)

Types of Crime

(1) violent crime;

(2) property crime;

(3) white-collar crime;

(4) organized crime;

(5) consensual or victimless crime.

Violent Crime

Even if, as our earlier discussion indicated, the news media exaggerate the problem of violent crime, it remains true that violent crime plagues many communities around the country and is the type of crime that most concerns Americans. The news story that began this chapter reminds us that violent crime is all too real for too many people; it traps some people inside their homes and makes others afraid to let their children play outside or even to walk to school.

Property Crime

As noted earlier, the major property crimes are burglary, larceny, motor vehicle theft, and arson. These crimes are quite common in the United States and other nations and, as Table 8.1 "Number of Crimes: Uniform Crime Reports (UCR) and National Crime Victimization Survey (NCVS), 2010" indicated, millions occur annually in this country. Many Americans have installed burglar alarms and other security measures in their homes and similar devices in their cars and SUVs. While property crime by definition does not involve physical harm, it still makes us concerned, in part because it touches so many of us. Although property crime has in fact declined along with violent crime since the early 1990s, it still is considered a major component of the crime problem, because it is so common and produces losses of billions of dollars annually

White-Collar Crime

If you were asked to picture a criminal in your mind, what image would you be likely to think of first: a scruffy young male with a scowl or sneer on his face, or a handsome, middle-aged man dressed in a three-piece business suit? No doubt the former image would come to mind first, if only because violent crime and property crime dominate newspaper headlines and television newscasts and because many of us have been victims of violent or property crime. Yet white-collar crime is arguably much more harmful than street crime, both in terms of economic loss and of physical injury, illness, and even death.

What exactly is **white-collar crime**? The most famous definition comes from Edwin Sutherland (1949, p. 9), a sociologist who coined the term in the 1940s and defined it as "a crime committed by a person of respectability and high social status in the course of his occupation." Sutherland examined the behavior of the seventy largest US corporations and found that they had violated the law hundreds of times among them. Several had engaged in crimes during either World War I or II; they provided defective weapons and spoiled food to US troops and even sold weapons to Germany and other nations the United States was fighting.

Organized Crime

Organized crime refers to criminal activity by groups or organizations whose major purpose for existing is to commit such crime. When we hear the term "organized crime," we almost automatically think of the so-called Mafia, vividly portrayed in the *Godfather* movies and other films, that comprises several highly organized and hierarchical Italian American "families." Although Italian Americans have certainly been involved in organized crime in the United States, so have Irish Americans, Jews, African Americans, and other ethnicities over the years. The emphasis on Italian domination of organized crime overlooks these other involvements and diverts attention from the actual roots of organized crime.

Organized crime

Definitions of what constitutes organized crime vary widely from country to country. Organized networks are typically involved in many different types of criminal activity spanning several countries.

These activities may include trafficking in humans, illicit goods, weapons and drugs, armed robbery, counterfeiting and money laundering.

Criminal groups - such as organized crime and unorganized form - having an increasing impact on the development of civil society , out of control of law enforcement and threaten the imposition of community norms and values of the criminal subculture .

Consensual Crime

Consensual crime (also called *victimless crime*) refers to behaviors in which people engage voluntarily and willingly even though these behaviors violate the law. Illegal drug use, discussed in "Alcohol and Other Drugs", is a major form of consensual crime; other forms include prostitution, gambling, and pornography. People who use illegal drugs, who hire themselves out as prostitutes or employ the services of a prostitute, who gamble illegally, and who use pornography are all doing so because they want to. These behaviors are not entirely victimless, as illegal drug users, for example, may harm themselves and others, and that is why the term *consensual crime* is often preferred over *victimless crime*. As just discussed, organized crime provides some of the illegal products and services that compose consensual crime, but these products and services certainly come from sources other than organized crime.

9 Types of criminal investigations

1. Homicide

Detectives in the homicide unit are responsible for investigating the killing of one person by another. They typically begin their investigation by assessing the scene of the incident, including collecting evidence, dusting for fingerprints, photographing the scene and exploring the surrounding area for potential witnesses to interview. Homicide detectives must be skilled at interviewing both witnesses and suspects to gather as much information as possible—this is challenging even with a willing witness, let alone one who is reluctant to speak out.
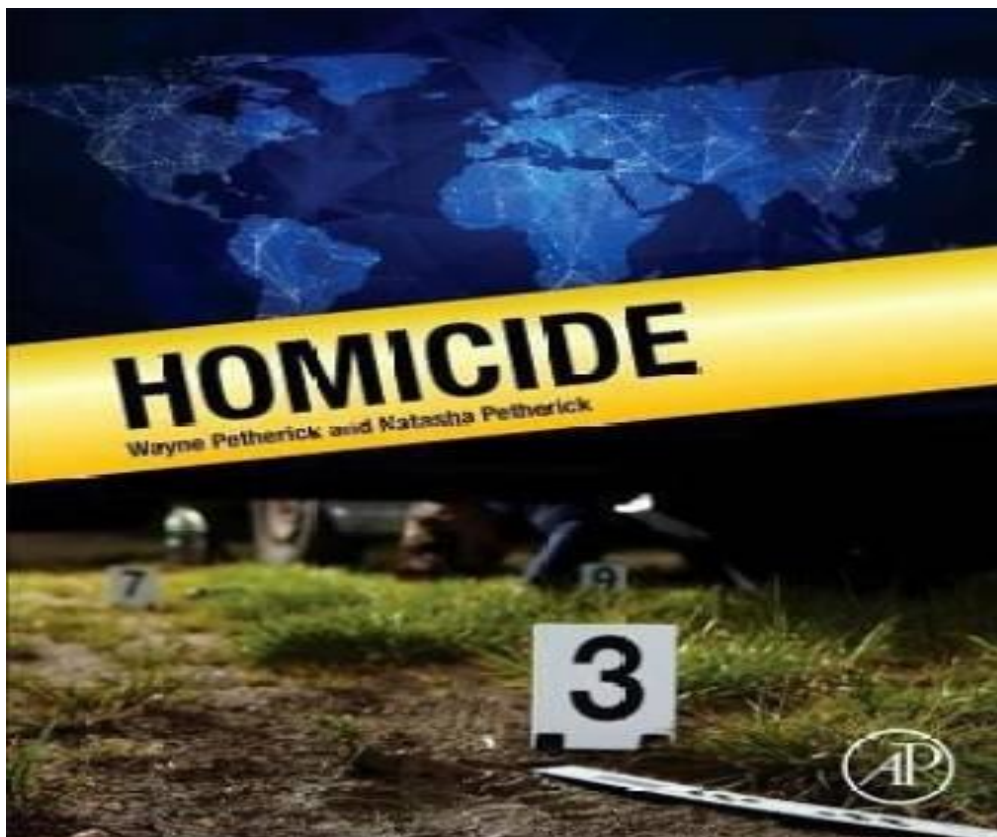
2. Cybercrimes

Many of the crimes that occur in the real world can also, unfortunately, take place online. These cybercrimes include identity theft, illegal firearms sales, online drug trafficking and online harassment. Cybercrimes can be tricky to investigate because they often take place across different jurisdictions, and their perpetrators can hide in anonymity behind their computer screens. Despite

these challenges, these tech-savvy sleuths use technical analysis and electronic evidence to uncover the truth and bring justice for victims.

3. Forensic investigations

Many different types of crimes are investigated using forensics. The police detectives in this special unit scientifically analyze evidence from crime scenes to piece together the truth about what happened and who committed the crime. They work with DNA evidence such as hair or bodily fluids to help identify or eliminate possible suspects, and they use methods like ballistics examination and soil analysis to recreate the scene of the crime.

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4. Fraud

Fraud occurs when someone intentionally uses false information to scam a person or company, usually for financial gain. There are many different types of fraud, and detectives are needed to investigate all of them, including insurance fraud, identity theft, credit card fraud and forgery.

Detectives use their sleuthing skills to gather evidence proving that fraud has occurred and following a paper trail that leads to the culprit.

5. Family and sexual violence

Detectives in this unit specialize in any investigation related to domestic abuse, sexual assault and child abuse or neglect. These detectives interview victims and witnesses and gather forensic evidence to make a case against the perpetrator. These detectives often receive special training to help them assist victims in these complex cases, especially when violence or abuse has occurred between family members. Detectives involved with these investigations may also partner with other organizations that offer support to victims, such as social workers, counselors and safe houses for women and children.

6. Crimes against property

This is a broad category that includes investigations of burglary, theft and vandalism. Detectives in crimes against property cases may not have many leads to help them, especially in situations where there were no witnesses. These detectives rely on gathering detailed reports from the property owner, sharp observation of evidence and canvassing the area to see whether anyone saw suspicious activity.

7. Cold cases

No detective wants to see a case go unsolved. Some detectives dedicate their work to these cold cases, reviewing past evidence, searching for new clues and using updated forensics technology so that justice can hopefully be served no matter how much time has passed. Cold cases that are reopened for investigation are often related to violent crimes like assault or homicide.
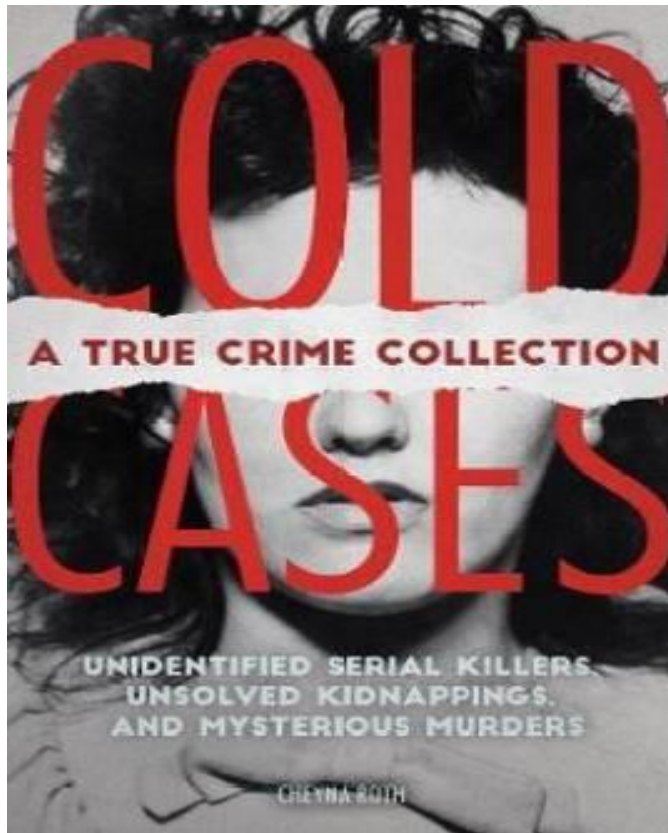
8. Narcotics

Narcotics detectives are responsible for investigating drug-related crimes. This includes smuggling, sales, the growing or production of drugs, and even the use of fraud to obtain prescription drugs illegally. These detectives may work undercover to break up a drug trafficking ring, or they may work on a smaller scale in order to curtail drug use in a particular neighborhood.

These detectives focus on ending violence between gangs in a particular city. Some of their investigations may overlap with narcotics cases, while others involve investigating offenders in gang-related crimes. Their goal is to promote safer neighborhoods and end violence, so some of their work is preventative, such as removing illegal firearms from the streets or patrolling areas that are known for violence.

CODING

```cpp
#include<iostream>
#include<string.h>
#include<iomanip>
using namespace std;
class vcrime
{
  public:
   string sta,rape;
    int mur, acm,ch,acch;
    vcrime(string state,int murder,int acommit,int
commit,int ach,string raped ){
   sta=state;
   mur=murder;
   acm=acommit;
   ch=commit;
   acch=ach;
   rape=raped;
}

};
```

```cpp
class pcrime
{
  public:
    int y, ps,pr,per;
    pcrime(int year,int prostolen,int prorecover,int percentage) {
  y=year;
  ps=prostolen;
  pr=prorecover;
  per=percentage;
}

};
class ccrime
{
  public:
    string ccat;
    int ccon;
    ccrime(string ccategory,int cconvocation) {
 ccat=ccategory;
```

```cpp
  ccon=cconvocation;
}

};
int main(){
vcrime record[29] = { vcrime("Andhra" ,1175, 1540, 52, 1," 961"),
vcrime("Arunachala", 86 ,48, 4, 0 ,"83"),
vcrime("Assam", 1451, 1142, 57, 14," 1980" ),
vcrime("Bihar", 3403, 4379, 201, 463 ,"1127"),
vcrime("Chhattisgarh", 998, 716, 29, 0, "1436"),
vcrime("Goa" ,34 ,42 ,6 ,0 ,"95"),
vcrime("Gujarat" ,1124 ,756, 57 ,3 ,"841" ),
vcrime("Haryana", 1106, 783 ,65, 9, "1174" ),
vcrime("Himachal", 130, 63, 9, 0 ,"283" ),
vcrime("Kashmir", 156, 484, 18 ,2 ,"331"),
vcrime("Jharkhand" ,1658, 907, 59, 5 ,"1050"),
vcrime("Karnataka", 1636, 2225, 99, 85, "1324" ),
vcrime("Kerala" ,367 ,676, 84, 1433, "1347"),
```

```
vcrime("Madhya Pradesh" ,2274 ,2439, 141, 72
,"5076"),
vcrime("Maharashtra", 2670, 2613 ,171 ,11 ,"3438"),
vcrime("Manipur", 96, 227, 5, 0 ,"75" ),
vcrime("Meghalaya", 159, 115, 12, 0 ,"118"),
vcrime("Mizoram", 42 ,22, 6, 1, "120"),
vcrime("Nagaland", 58, 56 ,3, 0 ,"30"),
vcrime("Odisha", 1450, 2345, 32, 1 ,"1978"),
vcrime("Punjab", 767, 864, 98, 46, "981"),
vcrime("Rajasthan" ,1637, 1794, 81 ,182 ,"3759"),
vcrime("Sikkim", 12, 14, 2 ,0," 47"),
vcrime("TamilNadu", 1805, 2922, 50 ,0," 455"),
vcrime("Telangana" ,1308 ,1062, 123, 1," 979"),
vcrime("Tripura", 140, 79 ,3, 0 ,"239"),
vcrime("UttarPradesh" ,5150, 5223 ,1412 ,506,"
3467"),
vcrime("Uttarakhand" ,218 ,171, 38 ,14 ,"270"),
vcrime("WestBengal" ,2217 ,7248, 342, 512," 1466")

};
```

```
pcrime precor[11]={pcrime(2004, 236170, 46947
,19.9),
pcrime(2005 ,240900 ,57600, 23.9),
pcrime(2006, 240395, 60723, 25.3),
pcrime(2007, 268078, 69655, 26.0),
pcrime(2008 ,385296, 76815, 19.9),
pcrime(2009, 449501 ,87611 ,19.5),
pcrime(2010 ,626636, 180963 ,28.9),
pcrime(2011 ,658525, 122538 ,18.6),
pcrime(2012 ,2107194 ,141793 ,6.7),
pcrime(2013 ,1321931 ,176270, 13.3),
pcrime(2014 ,751482 ,157552, 21.0)
};
ccrime re[13]={
ccrime("Traffic Offenses",43908),
ccrime("Traffic Offenses — DUI",59985),
ccrime("Dangerous Drugs"   ,57438),
ccrime("Immigration"      ,52128),
ccrime("Assault ",31919),
ccrime("Larceny",15918),
```

```cpp
  ccrime("Liquor",2313),
  ccrime("Health / Safety",1548),
  ccrime("Homicide",1531),
  ccrime("Commercialized Sexual Offenses",995),
  ccrime("Sexual Assault",3705),
  ccrime("Sex Offenses (Not Assault or
Commercialized Sex)",5033),
  ccrime("Threat" ,847)
};
int z;
string a,b,c,d,e,f,g;
   a="1. violent crime";
   b="2. property crime";
   c="3. white-collar crime";
   d="4. organized crime";
   e="5. consensual or victimless crime";
cout<<"~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
~~~~~~"<<endl;
cout<<"*******FUNDAMENTALS OF DATA
ANALYTICS********\n"<<endl;
```

```cpp
cout<<"\t\tCOURSE CODE: CSC3005"<<endl;
cout<<"\t\tSLOT: E1+TE1\n"<<endl;
cout<<"*****TEAM MEMBERS*****\n"<<endl;
cout<<"\t\tARAVIND- (20BCS0150)"<<endl;
cout<<"\t\tELAVARASAN-(20BCS0163)"<<endl;
cout<<"\t\tSANTHOSH-(20BCS0158)"<<endl;
cout<<"\t\tRAGHUL MOHANTHY-(20BCS0165)\n"<<endl;
cout<<"*****TOPIC*****\n"<<endl;
cout<<"\t\tCRIME DETECTION\n"<<endl;
cout<<"~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~"<<endl;
cout<<"DETECTIVE ANALYSIS"<<endl;
cout<<"\tCrime analysis is a law enforcement function that involves systematic analysis for identifying and analyzing patterns and trends in crime and disorder. Information on patterns can help law enforcement agencies deploy resources in a more effective manner, and assist detectives in identifying and apprehending suspects."<<endl;
```

```cpp
cout<<"~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~"<<endl;

cout<<"ABSTRACT"<<endl;
```

```cpp
cout<<"\tData mining can be used to model crime
```
detection problems. Crimes are a social nuisance and costour society dearly in several ways. Any research that can help in solving crimes faster will pay for itself. About 10% of the criminals commit about 50% of the crimes. Here we look at use of clustering algorithm for a data mining approach to help detect the crimes patterns and speed up the process of solving crime. We will look at k-means clustering with some enhancements to aid in the process of identification of crime patterns. We applied these techniques to real crime data from a sheriff's office and validated our results. We also use semi-supervised learning technique here for knowledge discovery from the crime records and to help increase the predictive accuracy. We also developed a weighting scheme for attributes here to deal with limitations of various out of the box clustering tools and techniques. This easy to implement data mining framework works with the geospatial plot of crime and helps to improve the

productivity of the detectives and other law enforcement officers.It can also be applied for counter terrorism for homeland security"<<endl;

cout<<"~~~~~~"<<endl;

cout<<"MAIN PURPOSE OF CRIME DETECTION"<<endl;

cout<<"\t The primary purpose of crime analysis is to support (i.e., assist) the operations of a police department. These functions include criminal investigation, apprehension, and prosecution; patrol activities; crime prevention and reduction strategies; problem solving; and the evaluation and accountability of police efforts.HOW CAN WE SOLVE CRIME SC"<<endl;

cout<<"~~~~~~"<<endl;

cout<<"CRIME TYPES"<<endl;

cout<<"\t\t"<<a<<endl;

cout<<"\t\t"<<b<<endl;

cout<<"\t\t"<<c<<endl;

```cpp
cout<<"\t\t"<<d<<endl;

cout<<"\t\t"<<e<<endl;

cout<<"~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~"<<endl;

cout<<"ENTER THE CRIME TYPE (1,2,3,4,5):";

cin>>z;

if(z==1)
    {
        cout << "you choose the crime  type"<<z<<endl<<"\t"<< a<<endl;

        cout<<"\t\t\tEven if, as our earlier discussion indicated, the news media exaggerate the problem of violent crime, it remains true that violent crime plagues many communities around the country and is the type of crime that most concerns Americans. The news story that began this chapter reminds us that violent crime is all too real for too many people; it traps some people inside their homes and makes others afraid to let their children play outside or even to walk to school."<<endl;
```

```cpp
cout<<"******************************************************************************"<<endl;
 cout<<"\tcm-commit murder"<<endl<<"\tCH=C.H not amouting commit murder "<<endl<<"\tcch-commitCulpableHomicide"<<endl;
  cout<<"------------------------------------------------------------------------------"<<endl;
 cout<<"\t\t\t2014 RECORDS"<<endl;
        cout<<"------------------------------------------------------------------------------"<<endl;
        cout << left << setw(14) << "state" << left << setw(13) << "murder" << left << setw(13)<< "Cm" << left << setw(15) << "CH"  << left << setw(14) << " cch"<< left << setw(13) << "Rape"<<endl;
        cout<<"------------------------------------------------------------------------------"<<endl;
    for (int i = 0; i <= 28; i++)
    {
        cout << left<< setw(14) << record[i].sta<<left<< setw(13) << record[i].mur<<left<<  setw(13) << record[i].acm<< left<<setw(15) <<
```

```cpp
        record[i].ch<<left<< setw(14) << record[i].acch<<
left<<setw(13) << record[i].rape <<endl;


}
}
else if(z==2)
    {
        cout << "you choose the crime  type"
<<z<<endl<<"\t"<< b<<endl;

        cout<<"\t\t\tAs noted earlier, the major property
```
crimes are burglary, larceny, motor vehicle theft, and arson. These crimes are quite common in the United States and other nations and, as Table 8.1 "Number of Crimes: Uniform Crime Reports (UCR) and National Crime Victimization Survey (NCVS), 2010" indicated, millions occur annually in this country. Many Americans have installed burglar alarms and other security measures in their homes and similar devices in their cars and SUVs. While property crime by definition does not involve physical harm, it still makes us concerned, in part because it touches so many of us. Although property crime has in fact declined along with violent crime since the early 1990s, it still is considered a major component of the

crime problem, because it is so common and produces losses of billions of dollars annually"<<endl;

```
        cout<<"----------------------------------------------------------------------------------"<<endl;
 cout<<"\t\tValue of Property Stolen & Recovered and Percentage Recovery During 2004-2014"<<endl;
        cout<<"----------------------------------------------------------------------------------"<<endl;
        cout << left << setw(10) << "year" << left << setw(20) << "propertity stolen" << left << setw(20)<< "property recover" << left << setw(25) << "property recover percentage"  <<endl;
cout<<"----------------------------------------------------------------------------------"<<endl;
    for (int i = 0; i <= 10; i++)
    {

cout << left<< setw(10) << precor[i].y<<left<< setw(20) << precor[i].ps<<left<<  setw(20) << precor[i].pr<< left<<setw(30) << precor[i].per <<endl;
```

```cpp
    }

      }
else if(z==3)

      {
cout << "you choose the crime  type" <<z<<endl<<"\t"<< c<<endl;

cout<<"\t\t\tIf you were asked to picture a criminal in your mind, what image would you be likely to think of first: a scruffy young male with a scowl or sneer on his face, or a handsome, middle-aged man dressed in a three-piece business suit? No doubt the former image would come to mind first, if only because violent crime and property crime dominate newspaper headlines and television newscasts and because many of us have been victims of violent or property crime. Yet white-collar crime is arguably much more harmful than street crime, both in terms of economic loss and of physical injury, illness, and even death. What exactly is white-collar crime? The most famous definition comes from Edwin Sutherland (1949, p. 9), a sociologist who coined the term in the 1940s and defined it as "a crime committed by a person of respectability and high social status in the course of his occupation."
```

Sutherland examined the behavior of the seventy largest US corporations and found that they had violated the law hundreds of times among them. Several had engaged in crimes during either World War I or II; they provided defective weapons and spoiled food to US troops and even sold weapons to Germany and other nations the United States was fighting."<<endl;

cout<<"--"<<endl;

cout<<"There are many types of white-collar crimes, but the following are the most common:"<<endl;

cout<<"--"<<endl;

cout<<"\t\t\t• Corporate Fraud"<<endl;

cout<<"\t\t\t• Embezzlement"<<endl;

cout<<"\t\t\t• Ponzi Schemes"<<endl;

cout<<"\t\t\t• Extortion"<<endl;

cout<<"\t\t\t• Bankruptcy Fraud"<<endl;

cout<<"--"<<endl;

```cpp
cout<<"Legislation against white collar crime in India"<<endl;
cout<<"------------------------------------------------------------------------------"<<endl;
cout<<"There are several provisions that exists for identifying white collar crimes in India. Government in order to ensure that the criminal committing white collar crime must be punished, brought out the various legislations-"<<endl;
cout<<"------------------------------------------------------------------------------"<<endl;
cout<<"The Companies Act, 1960"<<endl;
cout<<"The Income Tax Act, 1961"<<endl;
cout<<"Indian Penal Code, 1860"<<endl;
cout<<"The Commodities Act, 1955"<<endl;
cout<<"The Prevention of Corruption Act, 1988"<<endl;
cout<<"The Negotiable Instrument Act, 1881"<<endl;
cout<<"The Prevention of Money laundering Act, 2002"<<endl;
cout<<"The Information Technology Act, 2005"<<endl;
```

```cpp
cout<<"The Imports and Exports (control) Act, 1950"<<endl;

cout<<"The Special Court (Trial of offences relation to Transactions in Securities) Act, 1992"<<endl;

cout<<"The Central Vigilance Commission Act, 2003"<<endl;

}
else if(z == 4)
    {
        cout << "you choose the crime  type" <<z<<endl<<"\t"<< d<<endl;

        cout<<"\t\t\tOrganized crime refers to criminal
```
activity by groups or organizations whose major purpose for existing is to commit such crime. When we hear the term "organized crime," we almost automatically think of the so-called Mafia, vividly portrayed in the Godfather movies and other films, that comprises several highly organized and hierarchical Italian American "families." Although Italian Americans have certainly been involved in organized crime in the United States, so have Irish Americans, Jews, African Americans, and other ethnicities over the years. The emphasis on Italian

domination of organized crime overlooks these other involvements and diverts attention from the actual roots of organized crime."<<endl;

cout<<"---"<<endl;

cout<<"Mumbai underworld"<<endl;

cout<<"---"<<endl;

cout<<"The Mumbai underworld, also known as the Bombay underworld, refers to the organised crime network in the city of Mumbai, in the state of Maharashtra in India. Mumbai is the largest city of India and its financial capital. Over a period of time, the Mumbai underworld has been dominated by several different groups and mobsters."<<endl;

cout<<"---"<<endl;

cout<<"Activities"<<endl;

cout<<"---"<<endl;

cout<<"India is a major transit point for heroin from the Golden Triangle and Golden Crescent en route to Europe. India is also the world's largest

legal grower of opium; experts estimate that 5–10% of the legal opium is converted into illegal heroin, and 8–10% is consumed in high quantities as concentrated liquid. The pharmaceutical industry is also responsible for much illegal production of mandrax, much of which is smuggled into South Africa. Diamond smuggling via South Africa is also a major criminal activity, and diamonds are sometimes used to disguise shipments of heroin. Finally, there is much money laundering in the country, mostly through the use of the traditional hawala system, although India criminalised money laundering in 2003.[28] [29]"<<endl;

cout<<"--"<<endl;

cout<<"Popular culture"<<endl;

cout<<"--"<<endl;

cout<<"In the cinema of India, particularly Bollywood, crime films and gangster films inspired by organised crime in India have been produced since 1940. Indian cinema has several genres of such crime films"<<endl;

```cpp
cout<<"--------------------------------------------------------------------------"<<endl;
cout<<"decoit films"<<endl;
cout<<"--------------------------------------------------------------------------"<<endl;
cout<<"Main article: Dacoit film\n\n"<<endl;
    cout<<"\t\t\tThe dacoit film was a genre of Indian cinema that began with Mehboob Khan's Aurat (1940) and gained popularity with its remake Mother India (1957) as well as Dilip Kumar's Gunga Jumna (1961). A subgenre is the Dacoit Western, popularized by Sholay (1975). These films are usually set in rural India, and often inspired by real dacoits."<<endl;
    cout<<"Examples of the genre:"<<endl;
    cout<<"\t\t\tMother India (1957)"<<endl;
    cout<<"\t\t\tGunga Jumna (1961)"<<endl;
    cout<<"\t\t\tSholay (1975)"<<endl;
    cout<<"\t\t\tBandit Queen (1994)"<<endl;
    cout<<"--------------------------------------------------------------------------"<<endl;
    cout<<"Mumbai underworld films"<<endl;
```

```cpp
cout<<"-----------------------------------------------------------------------------"<<endl;
cout<<"\t\t\tExamples of the Mumbai underworld film genre:"<<endl;
cout<<"\t\t\tZanjeer (1973)"<<endl;
cout<<"\t\t\tDeewaar (1975)"<<endl;
cout<<"\t\t\tDon franchise (1978–2012)"<<endl;
cout<<"\t\t\tNayakan (1986)"<<endl;
cout<<"\t\t\tSalaam Bombay! (1988)"<<endl;
cout<<"\t\t\tParinda (1989)"<<endl;
cout<<"\t\t\tBaashha (1995)"<<endl;
cout<<"\t\t\tSatya (1998)"<<endl;
cout<<"-----------------------------------------------------------------------------"<<endl;
cout<<"Mafia Raj films"<<endl;
cout<<"-----------------------------------------------------------------------------"<<endl;
cout<<"Gangs of Wasseypur (film series)"<<endl;
cout<<"Amaran (1992)"<<endl;
cout<<""<<endl;
cout<<""<<endl;
```

```cpp
cout<<"----------------------------------------------------------------------------------"<<endl;
cout<<"Andhra Pradesh factionalism films"<<endl;
cout<<"----------------------------------------------------------------------------------"<<endl;
cout<<"Samarasimha Reddy (1999)"<<endl;
cout<<"Indra (2002 film) (2002)"<<endl;
cout<<"Rakta Charitra (2010)"<<endl;
cout<<"Aravinda Sametha Veera Raghava (2018)"<<endl;


}
else if(z==5)
    {
        cout << "you choose the crime  type" <<z<<endl<<"\t"<< e<<endl;
        cout<<"\t\t\tConsensual crime (also called victimless crime) refers to behaviors in whichpeople engage voluntarily and willingly even though these behaviors violate the law.Illegal drug use, discussed in "Alcohol and Other Drugs", is a major form of consensual crime; other forms include prostitution,
```

gambling, and pornography.People who use illegal drugs, who hire themselves out as prostitutes or employ the services of a prostitute, who gamble illegally, and who use pornography are all doing so because they want to. These behaviors are not entirely victimless, as illegal drug users, for example, may harm themselves and others, and that is why the term consensual crime is often preferred over victimless crime. As just discussed,organized crime provides some of the illegal products and services that compose consensual crime, but these products and services certainly come from sources other than organized crime."<<endl;

```
    cout<<"-------------------------------------------------------------------------------------"<<endl;
  cout<<" FY 2017 Total ERO Administrative Arrests Criminal Convictions"<<endl;
    cout<<"-----------------------------------------------------------------------------"<<endl;
   cout << left << setw(50) << "Criminal Category" << left << setw(50) << "Criminal Convictions"   <<endl;
cout<<"-----------------------------------------------------------------------------"<<endl;
    for (int i = 0; i <= 12; i++)
```

```cpp
    {

cout << left<< setw(50) << re[i].ccat<<left<<
setw(50) << re[i].ccon<<endl;


}


    }
else{

    cout<<"please give correct option(numbers
only"<<endl;


    }
    cout<<"----------------------------------------------------------
------------------------"<<endl;

cout<<"~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
~~~~~~"<<endl;
    cout<<"----------------------------------------------------------
------------------------"<<endl;
    cout<<"9 Types of criminal investigations"<<endl;
```

```cpp
cout<<"----------------------------------------------------------------------------------"<<endl;
cout<<"\t\t\tHomiside"<<endl;
cout<<"\t\t\tcyber crimes"<<endl;
cout<<"\t\t\tForensic investigations"<<endl;
cout<<"\t\t\tFraud"<<endl;
cout<<" \t\t\tFamily and sexual violence"<<endl;
cout<<"\t\t\tCrimes against property"<<endl;
cout<<" \t\t\tCold cases"<<endl;
cout<<"\t\t\tNarcotics"<<endl;
cout<<"\t\t\tGang violence"<<endl;


cout<<"~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~"<<endl;
cout<<"conclusion"<<endl;
cout<<"\t\t\tTo conclude, I strongly believe that
once a criminal, not always a criminal. If one has
regret about his past and has changed himself, one
should be treated like a normal human being.
Furthermore, they could help teenagers from crime
```

while telling them about their sacrifices of time, health and family."<<endl;

}

```
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
*******FUNDAMENTALS OF DATA ANALYTICS********

            COURSE CODE: CSC3005
            SLOT: E1+TE1

*****TEAM MEMBERS*****

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*****TOPIC*****

            CRIME DETECTION

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
DETECTIVE ANALYSIS
        Crime analysis is a law enforcement function that involves systematic analysis for identifying and analyzing patterns
and trends in crime and disorder. Information on patterns can help law enforcement agencies deploy resources in a more effecti
ve manner, and assist detectives in identifying and apprehending suspects.
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
ABSTRACT
        Data mining can be used to model crime detection problems. Crimes are a social nuisance and costour society dearly in
several ways. Any research that can help in solving crimes faster will pay for itself. About 10% of the criminals commit about
 50% of the crimes. Here we look at use of clustering algorithm for a data mining approach to help detect the crimes patterns
and speed up the process of solving crime. We will look at k-means clustering with some enhancements to aid in the process of
identification of crime patterns. We applied these techniques to real crime data from a sheriff's office and validated our res
ults. We also use semi-supervised learning technique here for knowledge discovery from the crime records and to help increase
the predictive accuracy. We also developed a weighting scheme for attributes here to deal with limitations of various out of t
he box clustering tools and techniques. This easy to implement data mining framework works with the geospatial plot of crime a
nd helps to improve the productivity of the detectives and other law enforcement officers.It can also be applied for counter t
errorism for homeland security
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
MAIN PURPOSE OF CRIME DETECTION
```

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~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
MAIN PURPOSE OF CRIME DETECTION
        The primary purpose of crime analysis is to support (i.e., assist) the operations of a police department. These funct
ions include criminal investigation, apprehension, and prosecution; patrol activities; crime prevention and reduction strategi
es; problem solving; and the evaluation and accountability of police efforts.HOW CAN WE SOLVE CRIME SC
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
CRIME TYPES
                1. violent crime
                2. property crime
                3. white-collar crime
                4. organized crime
                5. consensual or victimless crime
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
ENTER THE CRIME TYPE (1,2,3,4,5):1
you choose the crime  type1
        1. violent crime
                   Even if, as our earlier discussion indicated, the news media exaggerate the problem of violent crime,
it remains true that violent crime plagues many communities around the country and is the type of crime that most concerns Ame
ricans. The news story that began this chapter reminds us that violent crime is all too real for too many people; it traps som
e people inside their homes and makes others afraid to let their children play outside or even to walk to school.
****************************************************************************
        cm-commit murder
        CH=C.H not amouting commit murder
        cch-commitCulpableHomicide
--------------------------------------------------------------------------
                    2014 RECORDS
--------------------------------------------------------------------------
state           murder          Cm              CH              cch             Rape
--------------------------------------------------------------------------
Andhra          1175            1540            52              1               961
Arunachala      86              48              4               0               83
Assam           1451            1142            57              14              1980
Bihar           3403            4379            201             463             1127
Chhattisgarh    998             716             29              0               1436
Goa             34              42              6               0               95
Gujarat         1124            756             57              3               841
```

```
Haryana         1106            783             65              9               1174
Himachal        130             63              9               0               283
Kashmir         156             484             18              2               331
Jharkhand       1658            907             59              5               1050
Karnataka       1636            2225            99              85              1324
Kerala          367             676             84              1433            1347
Madhya Pradesh2274              2439            141             72              5076
Maharashtra     2670            2613            171             11              3438
Manipur         96              227             5               0               75
Meghalaya       159             115             12              0               118
Mizoram         42              22              6               1               120
Nagaland        58              56              3               0               30
Odisha          1450            2345            32              1               1978
Punjab          767             864             98              46              981
Rajasthan       1637            1794            81              182             3759
Sikkim          12              14              2               0               47
TamilNadu       1805            2922            50              0               455
Telangana       1308            1062            123             1               979
Tripura         140             79              3               0               239
UttarPradesh    5150            5223            1412            506             3467
Uttarakhand     218             171             38              14              270
WestBengal      2217            7248            342             512             1466
-----------------------------------------------------------------------------
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
-----------------------------------------------------------------------------
```

```
ENTER THE CRIME TYPE (1,2,3,4,5):2
you choose the crime  type2
        2. property crime
                   As noted earlier, the major property crimes are burglary, larceny, motor vehicle theft, and arson. The
se crimes are quite common in the United States and other nations and, as Table 8.1 "Number of Crimes: Uniform Crime Reports (
UCR) and National Crime Victimization Survey (NCVS), 2010" indicated, millions occur annually in this country. Many Americans
have installed burglar alarms and other security measures in their homes and similar devices in their cars and SUVs. While pro
perty crime by definition does not involve physical harm, it still makes us concerned, in part because it touches so many of u
s. Although property crime has in fact declined along with violent crime since the early 1990s, it still is considered a major
 component of the crime problem, because it is so common and produces losses of billions of dollars annually
--------------------------------------------------------------------------------
              Value of Property Stolen & Recovered and Percentage Recovery During 2004-2014
--------------------------------------------------------------------------------
year       propertity stolen   property recover    property recover percentage
--------------------------------------------------------------------------------
2004       236170              46947               19
2005       240900              57600               23
2006       240395              60723               25
2007       268078              69655               26
2008       385296              76815               19
2009       449501              87611               19
2010       626636              180963              28
2011       658525              122538              18
2012       2107194             141793              6
2013       1321931             176270              13
2014       751482              157552              21
--------------------------------------------------------------------------------

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

```
ENTER THE CRIME TYPE (1,2,3,4,5):3
you choose the crime  type3
        3. white-collar crime
                     If you were asked to picture a criminal in your mind, what image would you be likely to think of first
: a scruffy young male with a scowl or sneer on his face, or a handsome, middle-aged man dressed in a three-piece business sui
t? No doubt the former image would come to mind first, if only because violent crime and property crime dominate newspaper hea
dlines and television newscasts and because many of us have been victims of violent or property crime. Yet white-collar crime
is arguably much more harmful than street crime, both in terms of economic loss and of physical injury, illness, and even deat
h. What exactly is white-collar crime? The most famous definition comes from Edwin Sutherland (1949, p. 9), a sociologist who
coined the term in the 1940s and defined it as "a crime committed by a person of respectability and high social status in the
course of his occupation." Sutherland examined the behavior of the seventy largest US corporations and found that they had vio
lated the law hundreds of times among them. Several had engaged in crimes during either World War I or II; they provided defec
tive weapons and spoiled food to US troops and even sold weapons to Germany and other nations the United States was fighting.
--------------------------------------------------------------------------------
There are many types of white-collar crimes, but the following are the most common:
--------------------------------------------------------------------------------

                        • Corporate Fraud
                        • Embezzlement
                        • Ponzi Schemes
                        • Extortion
                        • Bankruptcy Fraud
--------------------------------------------------------------------------------
Legislation against white collar crime in India
--------------------------------------------------------------------------------
There are several provisions that exists for identifying white collar crimes in India. Government in order to ensure that the
criminal committing white collar crime must be punished, brought out the various legislations-
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------
Legislation against white collar crime in India
--------------------------------------------------------------------------

There are several provisions that exists for identifying white collar crimes in India. Government in order to ensure that the
criminal committing white collar crime must be punished, brought out the various legislations-
--------------------------------------------------------------------------
The Companies Act, 1960
The Income Tax Act, 1961
Indian Penal Code, 1860
The Commodities Act, 1955
The Prevention of Corruption Act, 1988
The Negotiable Instrument Act, 1881
The Prevention of Money laundering Act, 2002
The Information Technology Act, 2005
The Imports and Exports (control) Act, 1950
The Special Court (Trial of offences relation to Transactions in Securities) Act, 1992
The Central Vigilance Commission Act, 2003
-------------------------------------------------------------------------
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
-------------------------------------------------------------------------
```

```
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
ENTER THE CRIME TYPE (1,2,3,4,5):4
you choose the crime  type4
        4. organized crime
                        Organized crime refers to criminal activity by groups or organizations whose major purpose for existin
g is to commit such crime. When we hear the term "organized crime," we almost automatically think of the so-called Mafia, vivi
dly portrayed in the Godfather movies and other films, that comprises several highly organized and hierarchical Italian Americ
an "families." Although Italian Americans have certainly been involved in organized crime in the United States, so have Irish
Americans, Jews, African Americans, and other ethnicities over the years. The emphasis on Italian domination of organized crim
e overlooks these other involvements and diverts attention from the actual roots of organized crime.
-------------------------------------------------------------------------
Mumbai underworld
-------------------------------------------------------------------------

The Mumbai underworld, also known as the Bombay underworld, refers to the organised crime network in the city of Mumbai, in th
e state of Maharashtra in India. Mumbai is the largest city of India and its financial capital. Over a period of time, the Mum
bai underworld has been dominated by several different groups and mobsters.
-------------------------------------------------------------------------
Activities
-------------------------------------------------------------------------

India is a major transit point for heroin from the Golden Triangle and Golden Crescent en route to Europe. India is also the w
orld's largest legal grower of opium; experts estimate that 5-10% of the legal opium is converted into illegal heroin, and 8-1
0% is consumed in high quantities as concentrated liquid. The pharmaceutical industry is also responsible for much illegal pro
duction of mandrax, much of which is smuggled into South Africa. Diamond smuggling via South Africa is also a major criminal a
ctivity, and diamonds are sometimes used to disguise shipments of heroin. Finally, there is much money laundering in the count
ry, mostly through the use of the traditional hawala system, although India criminalised money laundering in 2003.[28] [29]
-------------------------------------------------------------------------
Popular culture
-------------------------------------------------------------------------
```

```
Popular culture
--------------------------------------------------------------------------------
In the cinema of India, particularly Bollywood, crime films and gangster films inspired by organised crime in India have been
produced since 1940. Indian cinema has several genres of such crime films
--------------------------------------------------------------------------------
decoit films
--------------------------------------------------------------------------------
Main article: Dacoit film


            The dacoit film was a genre of Indian cinema that began with Mehboob Khan's Aurat (1940) and gained po
pularity with its remake Mother India (1957) as well as Dilip Kumar's Gunga Jumna (1961). A subgenre is the Dacoit Western, po
pularized by Sholay (1975). These films are usually set in rural India, and often inspired by real dacoits.
Examples of the genre:
            Mother India (1957)
            Gunga Jumna (1961)
            Sholay (1975)
            Bandit Queen (1994)
--------------------------------------------------------------------------------
Mumbai underworld films
--------------------------------------------------------------------------------
            Examples of the Mumbai underworld film genre:
            Zanjeer (1973)
            Deewaar (1975)
            Don franchise (1978-2012)
            Nayakan (1986)
            Salaam Bombay! (1988)
            Parinda (1989)
```

```
            Parinda (1989)
            Baashha (1995)
            Satya (1998)
--------------------------------------------------------------------------------
Mafia Raj films
--------------------------------------------------------------------------------
Gangs of Wasseypur (film series)
Amaran (1992)



--------------------------------------------------------------------------------
Andhra Pradesh factionalism films
--------------------------------------------------------------------------------
Samarasimha Reddy (1999)
Indra (2002 film) (2002)
Rakta Charitra (2010)
Aravinda Sametha Veera Raghava (2018)
--------------------------------------------------------------------------------
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
--------------------------------------------------------------------------------
```

```
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
ENTER THE CRIME TYPE (1,2,3,4,5):5
you choose the crime  type5
        5. consensual or victimless crime
                    Consensual crime (also called victimless crime) refers to behaviors in whichpeople engage voluntarily
and willingly even though these behaviors violate the law.Illegal drug use, discussed in "Alcohol and Other Drugs", is a major
 form of consensual crime; other forms include prostitution, gambling, and pornography.People who use illegal drugs, who hire
themselves out as prostitutes or employ the services of a prostitute, who gamble illegally, and who use pornography are all do
ing so because they want to. These behaviors are not entirely victimless, as illegal drug users, for example, may harm themsel
ves and others, and that is why the term consensual crime is often preferred over victimless crime. As just discussed,organize
d crime provides some of the illegal products and services that compose consensual crime, but these products and services cert
ainly come from sources other than organized crime.
---------------------------------------------------------------------
 FY 2017 Total ERO Administrative Arrests Criminal Convictions
---------------------------------------------------------------------
Criminal Category                     Criminal Convictions
---------------------------------------------------------------------
Traffic Offenses                              43908
Traffic Offenses — DUI                59985
Dangerous Drugs                       57438
Immigration                           52128
Assault                               31919
Larceny                               15918
Liquor                                2313
Health / Safety                       1548
Homicide                              1531
Commercialized Sexual Offenses        995
Sexual Assault                        3705
```

```
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
---------------------------------------------------------------------
9 Types of criminal investigations
---------------------------------------------------------------------
                    Homiside
                    cyber crimes
                    Forensic investigations
                    Fraud
                    Family and sexual violence
                    Crimes against property
                    Cold cases
                    Narcotics
                    Gang violence
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
conclusion
                    To conclude, I strongly believe that once a criminal, not always a criminal. If one has regret about h
is past and has changed himself, one should be treated like a normal human being. Furthermore, they could help teenagers from
crime while telling them about their sacrifices of time, health and family.


...Program finished with exit code 0
Press ENTER to exit console.
```

Conclusion

To conclude, **I strongly believe that once a criminal, not always a criminal**. If one has regret about his past and has changed himself, one should be treated like a normal

human being. Furthermore, they could help teenagers from crime while telling them about their sacrifices of time, health and family.