Lab 5
Implementation of new permissions

Objective: To gain an understanding of the security organization in the Java platform through the implementation of new authorities

Objective: Learn to work with permissions and edit them using the standard java API

Work order:

1. Read the material from the book by Kay Horstmann, Gary Cornell. The Java Library Professional. Volume 2. Advanced programming tools. M .: LLC "I. D. Williams", 2014, given on pages 775-793
2. Implement a class of permission

Work progress:

An example of checking access rights

```
SecurityManager sm = System.getSecurityManager();
if (sm != null) {
   FilePermission filePermission = new FilePermission(fontFile.getPath(), "read");
   sm.checkPermission(filePermission);
}
```

Example of .policy file

```
grant {
            permission java.io.FilePermission "C:\\users\\Cathy\\*", "read";
            permission java.io.FilePermission "/tmp/games", "read, write";
            permission java.net.SocketPermission "*:1024-", "connect,accept";
            permission java.util.PropertyPermission "java.version", "read";
            permission java.lang.RuntimePermission "stopThread";
};
```

Initializing SecurityManager and custom .policy file

java -Djava.security.manager -Djava.security.policy=*policyFileURL* SomeApp

Preferred interval example

```
lineSeparator = (String) java.security.AccessController.doPrivileged(
        new PrivilegedAction() {
           public Object run()   {
              return System.getProperty("line.separator");
           }
        }
   });
```

An example of using MD5 signature

```
String str = “Message to digest”;
MessageDigest md = MessageDigest.getInstance("MD5");
byte[] digest = md.digest(str.getBytes());
```

1. The following listing shows the usage of java.io.FilePermission. getActions() java.io.FilePermission. getActions()

```
package ru.zss;

import java.io.FilePermission;
import java.io.IOException;

public class FilePermissionDemo {
   public static void main(String[] args) throws IOException {

      FilePermission fp = null;

      try{
         fp=new FilePermission("C://test.txt", "read") ;

         String s = fp.getActions() ;
         System.out.print("Action: "+s) ;

      }catch(Exception ex) {
         ex.printStackTrace() ;
      }
   }
}
```

Make sure that the program shown in the listing is working correctly. Check on real file.