

## Lab - Symmetric Key Encryption

### Q1. (notes)

Write a Java program (notes) to

- encrypt some text with AES (TwoFish, Serpent)
- then decrypt it

### Q2. (notes)

Write a Java class Employee with fields name, address telNo.

Write a Java program to

- instantiate an Employee object
- create a SealedObject containing the Employee object, encrypted with some Cipher
- //
- Extract the object from the SealedObject using another cipher (initialized for decryption)
- Print out the contents of the Employee object.

### Q3a.

Write a Java program to

- instantiate an Employee object
- create a SealedObject containing an Employee object, encrypted with some Cipher
- save the SealedObject to a file (“data/sealedObject.dat”)
- save the Cipher key to a file (“data/secretKey”)

You can use

```
private static void writeToFile(String filename, Object object)
    throws Exception {
    FileOutputStream fout = new FileOutputStream(new File(filename));
    ObjectOutputStream oout = new ObjectOutputStream(fout);
    oout.writeObject(object);
    oout.close();
}
```

}

### Q3b.

Write a second Java program to

- read the key from file
- read the SealedObject from file
- extract the Employee object from the SealedObject.
- print out the text stored in the Employee object.

```
static Object readFromFile(String filename) throws Exception {  
    FileInputStream fin = new FileInputStream(filename);  
    ObjectInputStream oin = new ObjectInputStream(fin);  
    Object object = oin.readObject();  
    oin.close();  
    return object;  
}
```