import java.security.\*;

import java .security.spec.\*;

import java.math.BigInteger;

public class ECCKeyGeneration

{

public static void main(String args[])throws Exception

{

KeyPairGenerator kpg;

kpg=KeyPairGenerator.getInstance("EC","SunEC");

ECGenParameterSpec ecsp;

ecsp=new ECGenParameterSpec("secp192r1");

kpg.initialize(ecsp);

KeyPair kp=kpg.genKeyPair();

PrivateKey pk=kp.getPrivate();

PublicKey pubk=kp.getPublic();

System.out.println(pk.toString());

System.out.println(pubk.toString());

Signature ecdsa;

ecdsa = Signature.getInstance("SHA1withECDSA","SunEC");

ecdsa.initSign(pk);

String text = "In teaching others we teach ourselves";

System.out.println("Text: " + text);

byte[] baText = text.getBytes("UTF-8");

ecdsa.update(baText);

byte[] baSignature = ecdsa.sign();

System.out.println("Signature: 0x" + (new BigInteger(1, baSignature).toString(16)).toUpperCase());

Signature signature;

signature = Signature.getInstance("SHA1withECDSA","SunEC");

signature.initVerify(pubk);

signature.update(baText);

boolean result = signature.verify(baSignature);

System.out.println("Valid: " + result);

}

}

