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import javax.crypto.KeyAgreement;
import javax.crypto.interfaces.DHPublicKey;
import javax.crypto.spec.DHParameterSpec;
import java.security.*;

public class DHKeyExchange {
    public static void main(String[] args) throws Exception {
        KeyPairGenerator kpg = KeyPairGenerator.getInstance("DH");
        kpg.initialize(512);
        KeyPair kpA = kpg.generateKeyPair();

        DHParameterSpec dhSpec = ((DHPublicKey) kpA.getPublic()).getParams();
        KeyPairGenerator kpgB = KeyPairGenerator.getInstance("DH");
        kpgB.initialize(dhSpec);
        KeyPair kpB = kpgB.generateKeyPair();

        KeyAgreement kaA = KeyAgreement.getInstance("DH");
        kaA.init(kpA.getPrivate());
        kaA.doPhase(kpB.getPublic(), true);

        KeyAgreement kaB = KeyAgreement.getInstance("DH");
        kaB.init(kpB.getPrivate());
        kaB.doPhase(kpA.getPublic(), true);

        byte[] sharedKeyA = kaA.generateSecret();
        byte[] sharedKeyB = kaB.generateSecret();

        System.out.println("Keys match: " + java.util.Arrays.equals(sharedKeyA,
sharedKeyB));
    }
}
```