Part4

```
import java.io.Console;
import java.io.IOException;
import java.security.*;
import java.io.ByteArrayOutputStream;
import javax.xml.bind.DatatypeConverter;

import java.util.*;

import javax.crypto.*;
import javax.crypto.spec.*;
import java.security.spec.*;

public class Lab4Class {
   public static void main(String[] args) {

        Console console = System.console();

        if( console == null ) {
         System.out.print("Console unavailable");
         return;
        }

        String password = console.readLine("Enter password:");

        try {
                SecureRandom salt = new SecureRandom();
                int salt_len = 32;
```

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                byte salt_bytes[] = new byte[salt_len];
                salt.nextBytes(salt_bytes);

                ByteArrayOutputStream data_to_hash = new ByteArrayOutputStream();
                data_to_hash.write(salt_bytes,0,salt_len);
                data_to_hash.write(password.getBytes());

                SecretKeyFactory skf = null;
                skf = SecretKeyFactory.getInstance("PBKDF2WithHmacSHA512");

                int keyLength = 256;
                PBEKeySpec spec = new PBEKeySpec(password.toCharArray(), salt_bytes, 1000,
keyLength);
                SecretKey key = skf.generateSecret(spec);
                byte[] digest = key.getEncoded();

                String hash_pwd = DatatypeConverter.printHexBinary(digest).toUpperCase();

                String salt_str = DatatypeConverter.printHexBinary(salt_bytes).toUpperCase();

                console.printf("Storing into db hash:" + hash_pwd);
                console.printf("\n");
                console.printf("Storing into db salt:" + salt_str);
                console.printf("\n");

        } catch (NoSuchAlgorithmException | InvalidKeySpecException e) {
                System.out.print("MD5 not supported for some reason");
                return;
        } catch (IOException e) {
```

```
                System.out.print("Could not prepare data for hashing");
                return;

            }

    }

}
```