Development Process

Step-By-Step

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THAT'S IT … no need to change Java source code :-)

Spring Security Password Storage

- In Spring Security 5, passwords are stored using a specific format

```
{id}encodedPassword
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username	password	enabled
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mary	{bcrypt}$2a$04$eFytJDGtjbThXa80FyOOBuFdK2IwjyWefYkMpiBEFlpBwDH.5PM0K	1
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Password column must be at least 68 chars wide

{bcrypt} - 8 chars
***encodedPassword* - 60 chars**

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Modify DDL for Password Field

```
CREATE TABLE `users` (
  `username` varchar(50) NOT NULL,
  `password`     char(68) NOT NULL,
  `enabled` tinyint(1) NOT NULL,

  PRIMARY KEY (`username`)

) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

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Step 1: Develop SQL Script to setup database tables

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INSERT INTO `users`
VALUES
('john','{bcrypt}$2a$04$eFytJDGtjbThXa80FyOOBuFdK2IwjyWefYkMpiBEFlpBwDH.5PM0K',1),
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Step 1: Develop SQL Script to setup database tables

The encrypted password: fun123

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Let's Spring Security know the passwords are stored as encrypted passwords: bcrypt

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Step 2: Point to New Database Schema

File: src/main/resources/persistence-mysql.properties

```
#
# JDBC connection properties
#
jdbc.driver=com.mysql.jdbc.Driver
jdbc.url=jdbc:mysql://localhost:3306/spring_security_demo_bcrypt?useSSL=false
jdbc.user=springstudent
jdbc.password=springstudent

#
# Connection pool properties
#
connection.pool.initialPoolSize=5
connection.pool.minPoolSize=5
connection.pool.maxPoolSize=20
connection.pool.maxIdleTime=3000
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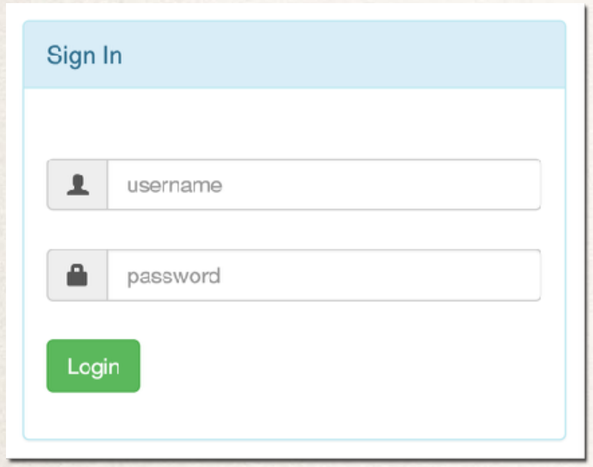
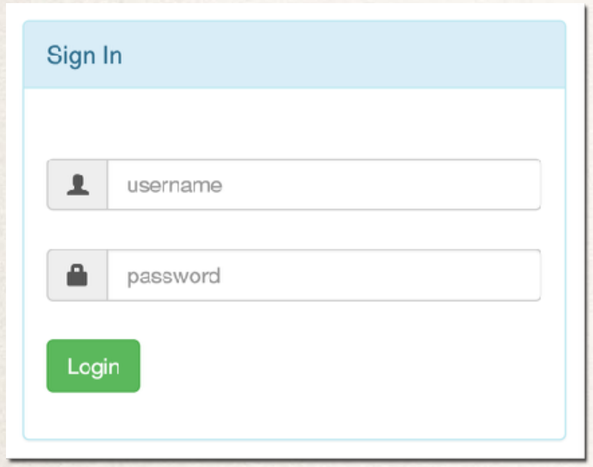
Spring Security Login Process

Spring Security Login Process



Spring Security Login Process



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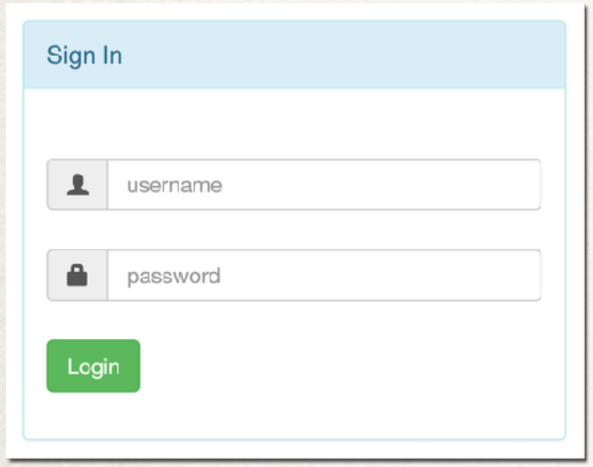

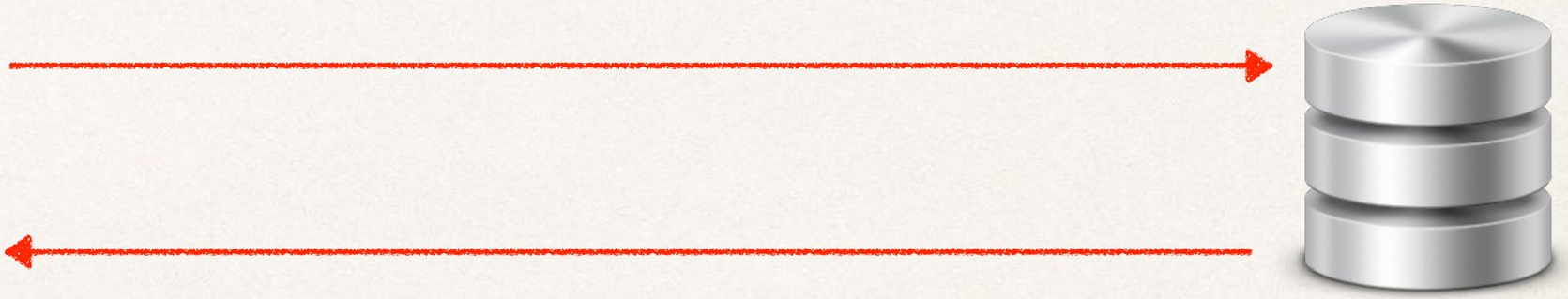

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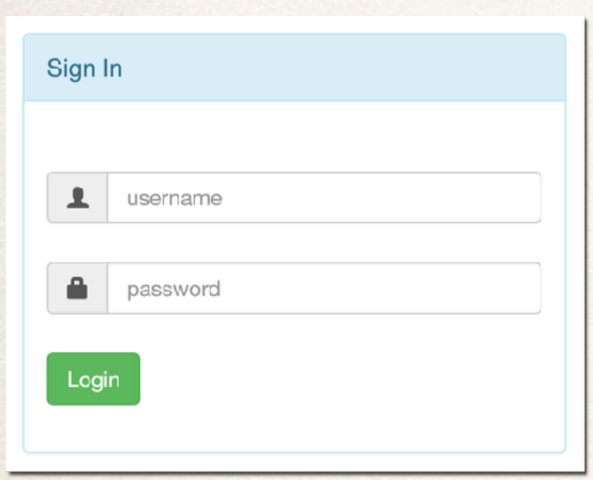

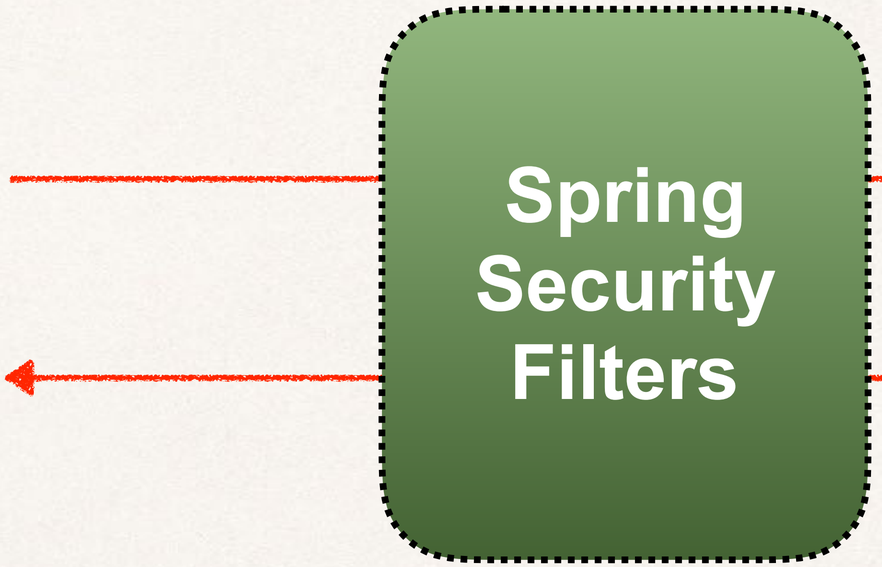

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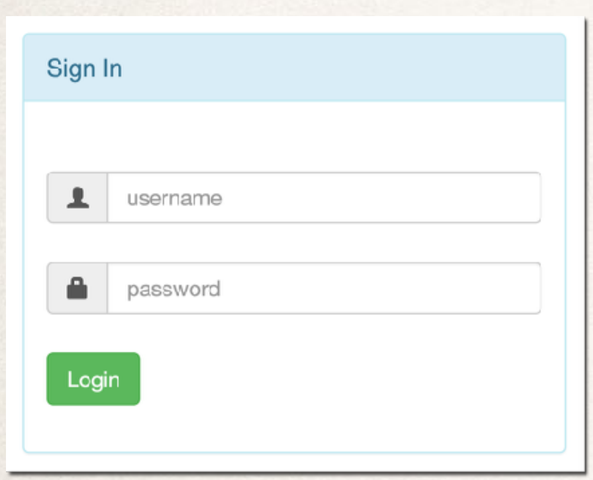

User enters plaintext password

Spring Security Filters

username	password	enabled
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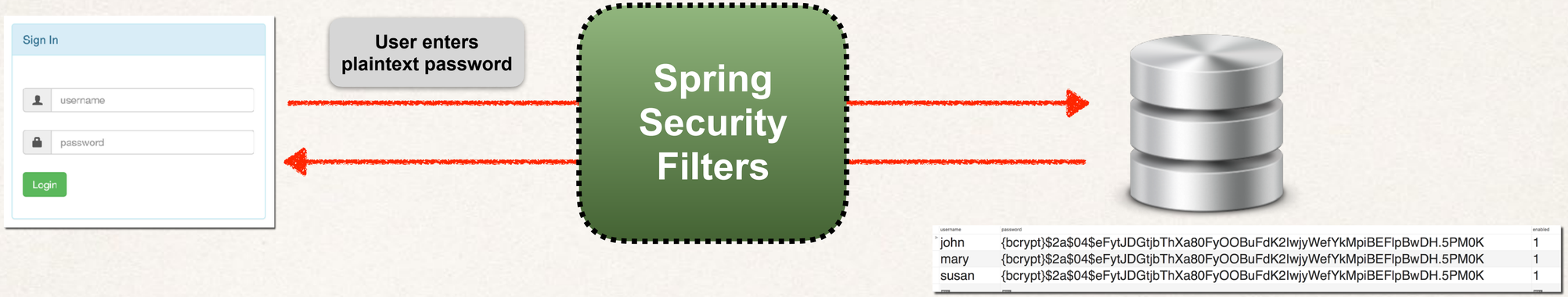

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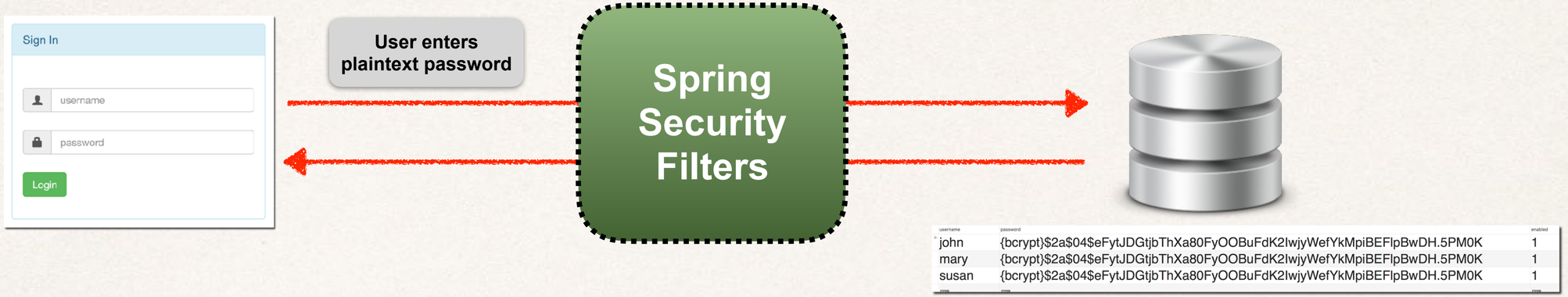

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1. Retrieve password from db for the user

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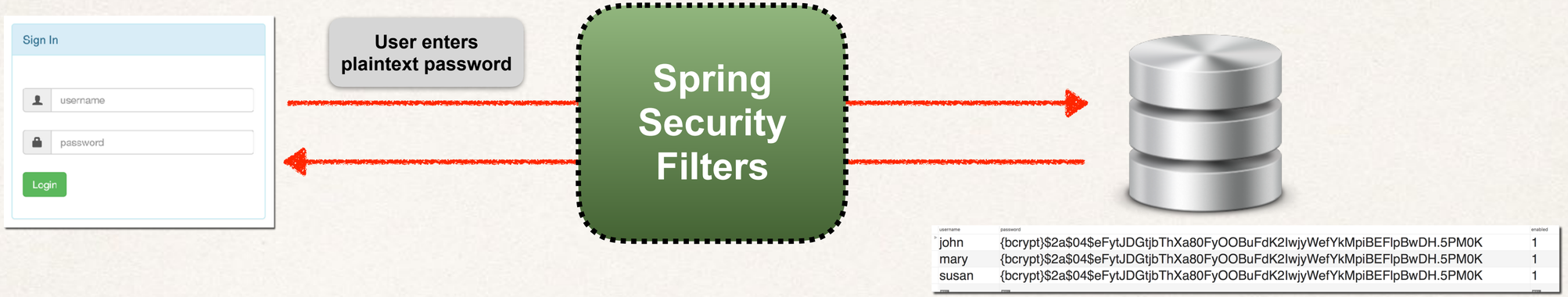

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2. Read the encoding algorithm id (bcrypt etc)

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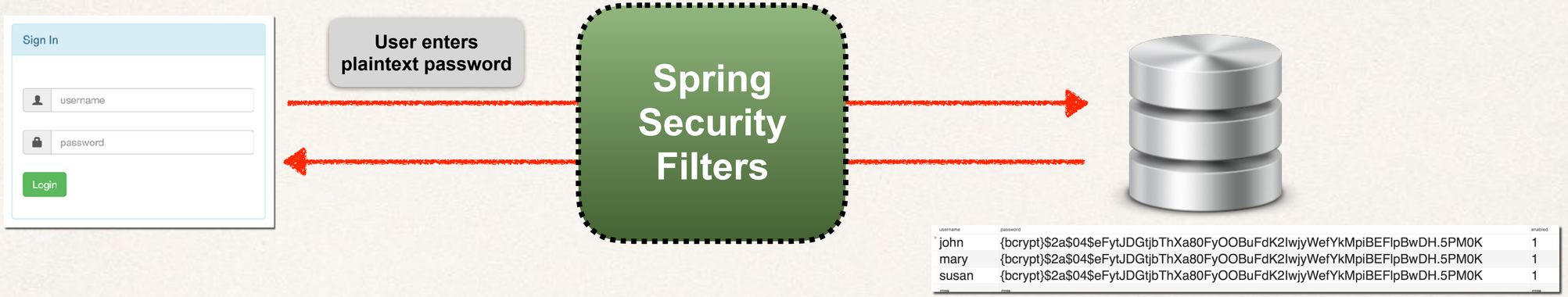

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3. For case of bcrypt, encrypt plaintext password from login form (using salt from db password)

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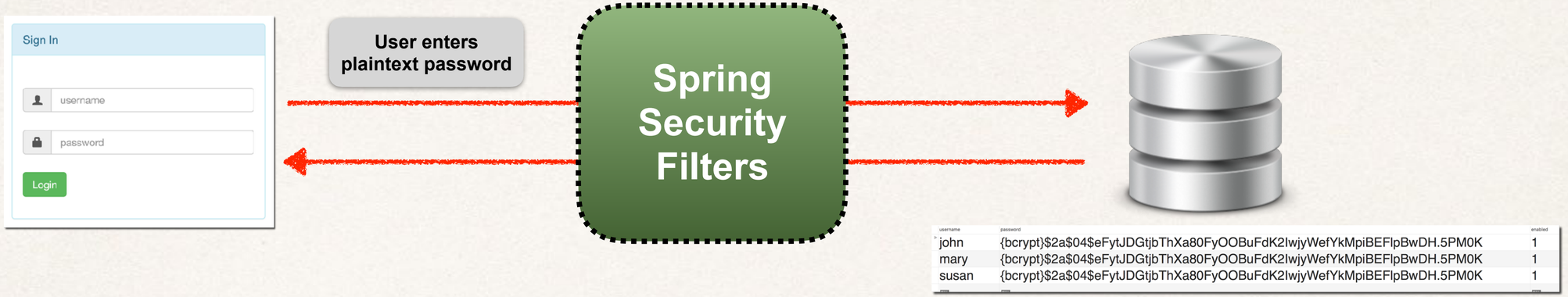

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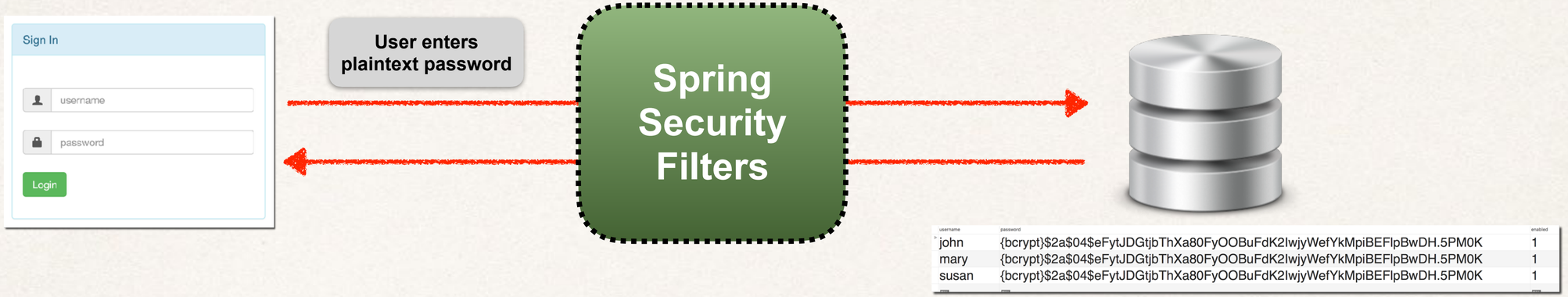

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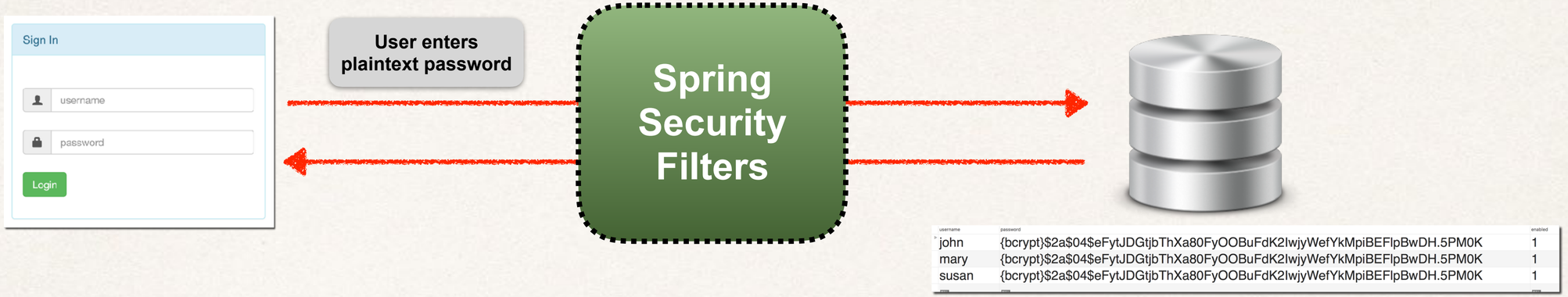

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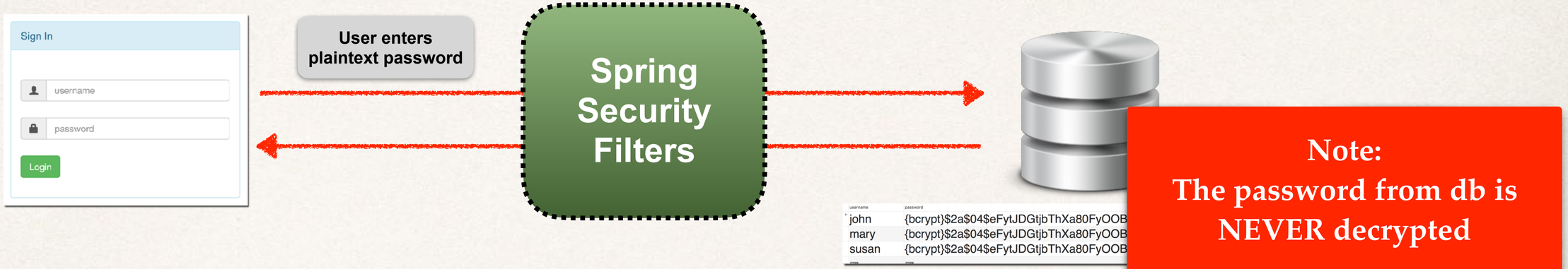

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Note:
The password from db is NEVER decrypted

Because bcrypt is a one-way encryption algorithm