

# COOKIE MANIPULATION



- Cookies are used to authenticate users without asking them to enter a password at each page.
- They stored at the client side (in the browser).
- If not implemented properly, they can be modified to **login as any user**.

# CROSS SITE REQUEST FORGERY

CSRF



- Requests are not validated at the server side.
- Server does not check if the user generated the request.
- Requests can be forged and sent to users to **make them do things they don't intend to do** such as changing their password.

# CSRF TOKENS



195.44.2.1

REQUEST

`http://facebook.com/password.php`



RESPONSE

HTML PAGE WITH **UNIQUE TOKEN**



→ Server will only accept form if the unique token is returned.

# MITIGATION

## CSRF VULNERABILITIES

### Dynamic synchronizing tokens

1. Generate an **unpredictable** token that can **not be reused**.
  - Token needs to be a large value.
  - It must be random.
  - It should be unique.
  - Other factors can be included in the token generation algorithm.
2. Embed the token in the HTML page in a hidden form.
3. Verify the token when the form is submitted.

