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What is “Authentication”?

In many websites, certain “areas” (pages) should only be accessible by authenticated (= logged in) users

- Personal profile on a social network site
- Your shopping cart and order history in an online shop
- The administration area of your own blog website

User **Sign Up** *(create account with email + password)* → User **Login** *(enter email + password)* → User **Authentication** *(grant access to protected pages)*

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Understanding Password Hashing

To render security-relevant data (e.g. a password) useless in case of a data breach, you should hash it

Hashing = converting a string (e.g. the password) to a **non-decodable**, different string

Securely hashed values can’t be reverted, decoded or transformed back into the original value

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We Need To Track The User Auth Status

To the web server (backend code), every incoming request is similar

Just by looking at a default request, the server-side code can't find out whether a user should be granted access or not

An "entry ticket" must be saved on the server and handed out to the visitor

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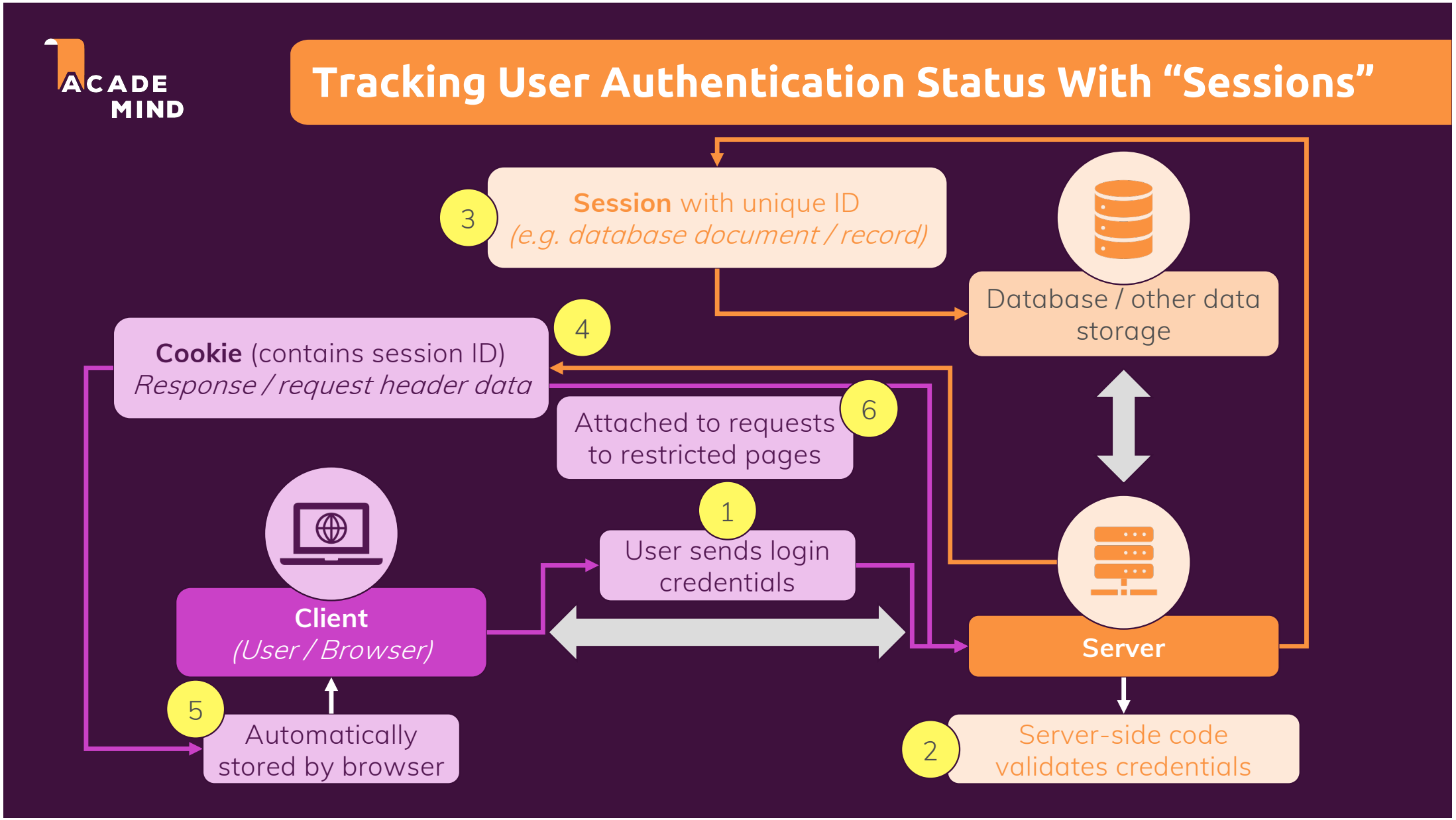
Tracking User Authentication Status With "Sessions"



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A Closer Look At Sessions & Cookies

Sessions & Cookies are NOT exclusively used for authentication!

- Unauthenticated users can also be assigned sessions
- The data stored in a session (e.g. “isAuthenticated: true”) matters
- Cookies are also used for user tracking etc.
- Cookies can be combined with sessions – but don’t have to

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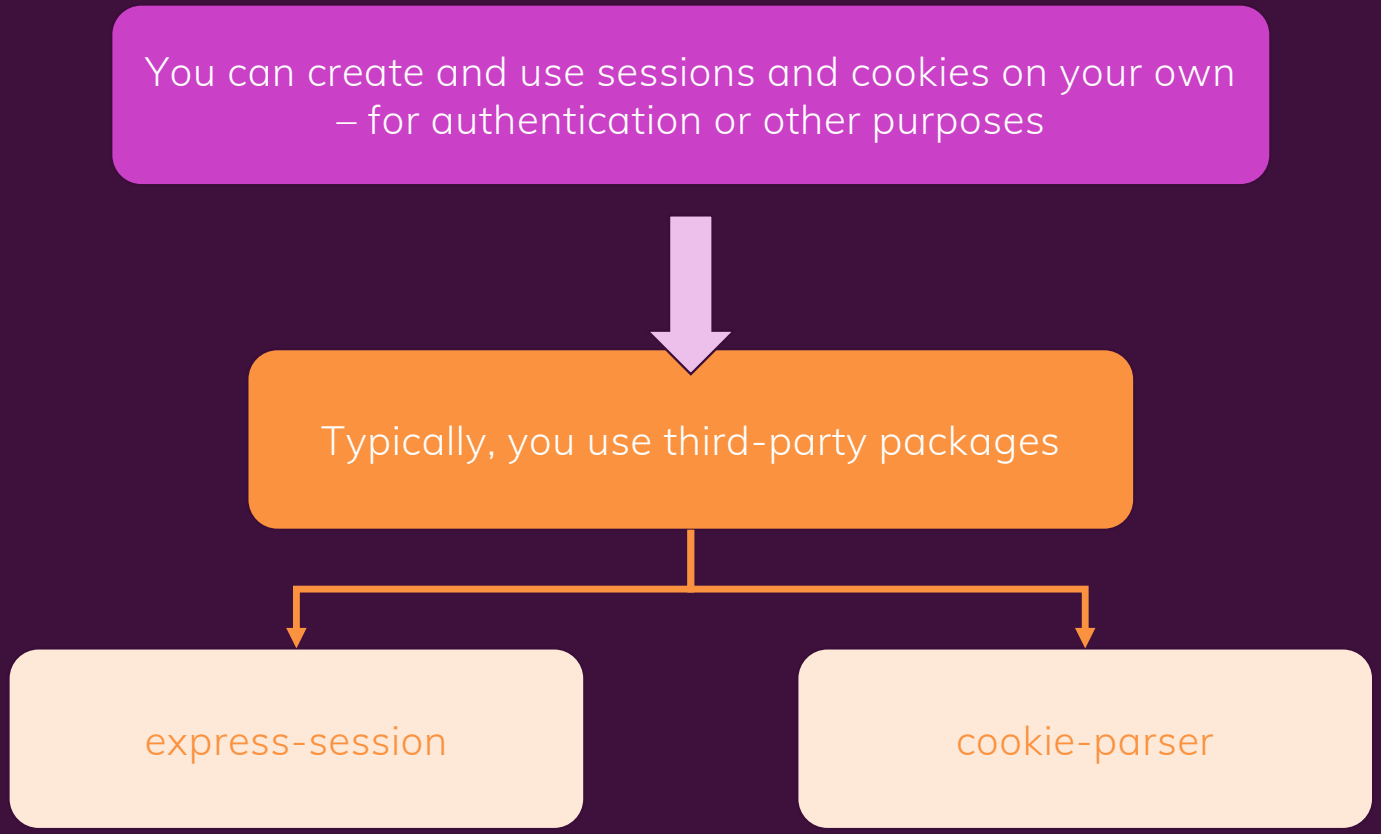
Working With Sessions & Cookies



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Authentication vs Authorization

Authentication	Authorization
Signup + login with credentials	Even authenticated users may not be allowed to access everything on a website
Authenticated (= logged in) user may then access restricted resources	E.g. not all authenticated users may access your online shop order history