



Mindtree

Welcome to possible

Session Handling

Objectives

- Define Stateless and stateful web apps
- Define Session tracking techniques
- HttpSession
- Adding, removing, reading from session
- Session expiry

HTTP Protocol

- HTTP Protocol is a stateless protocol which means that each page request is considered independent of any other request.
 - A web server does not understand if a page request comes from someone who has already requested a page or if the person is visiting the page for the first time.
 - It treats each request in the same way.
- In some scenarios, e.g. ecommerce and banking web applications this is inconvenient and we need some way to tie every page request together as a session of a single visitor.

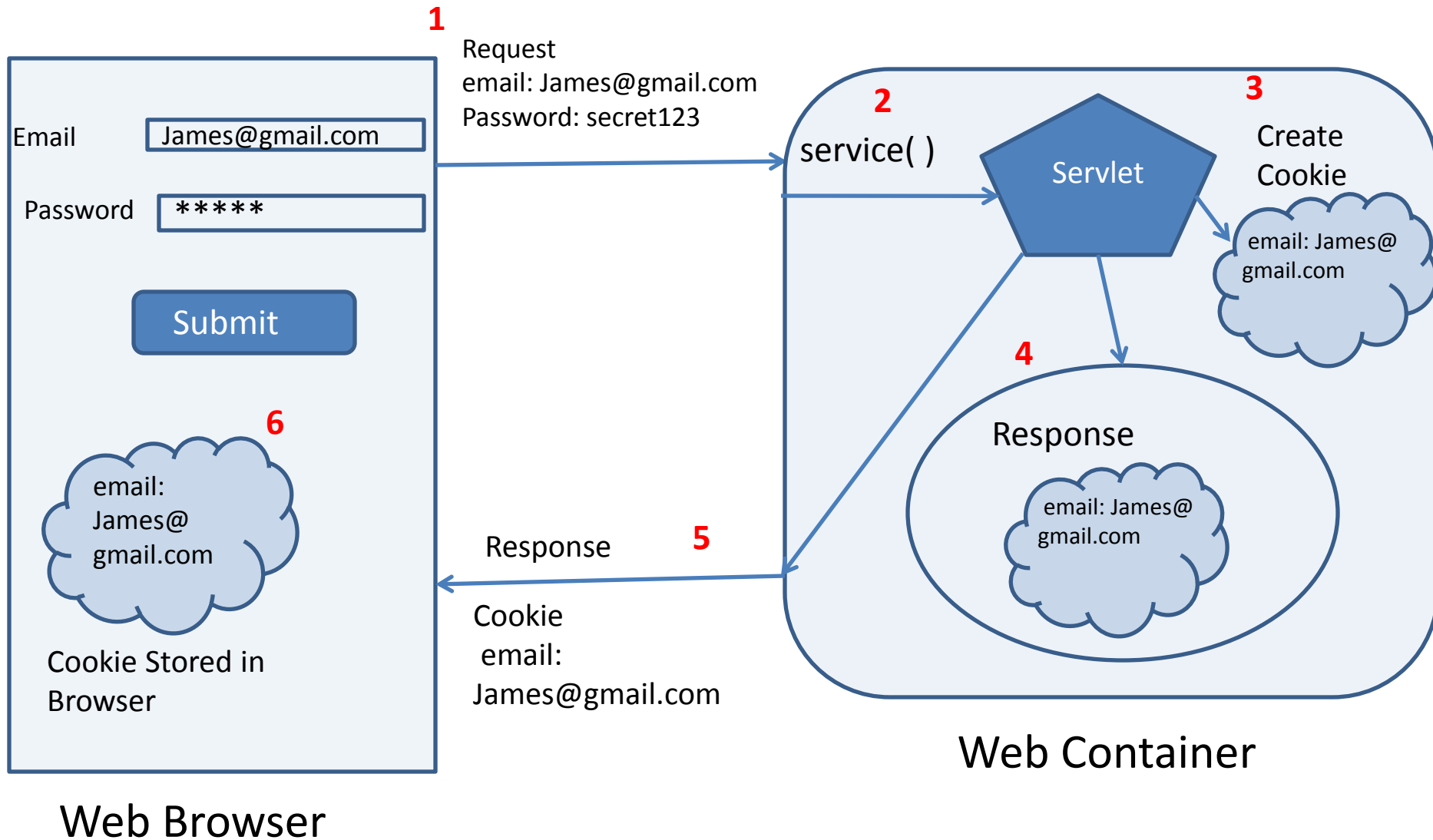
Session Tracking

- Session tracking is a mechanism which helps the servers to maintain the conversational state of a client.
- Different mechanisms that can be used for session tracking:
 - Hidden Fields
 - URL Rewriting
 - Cookies
 - HttpSession API.

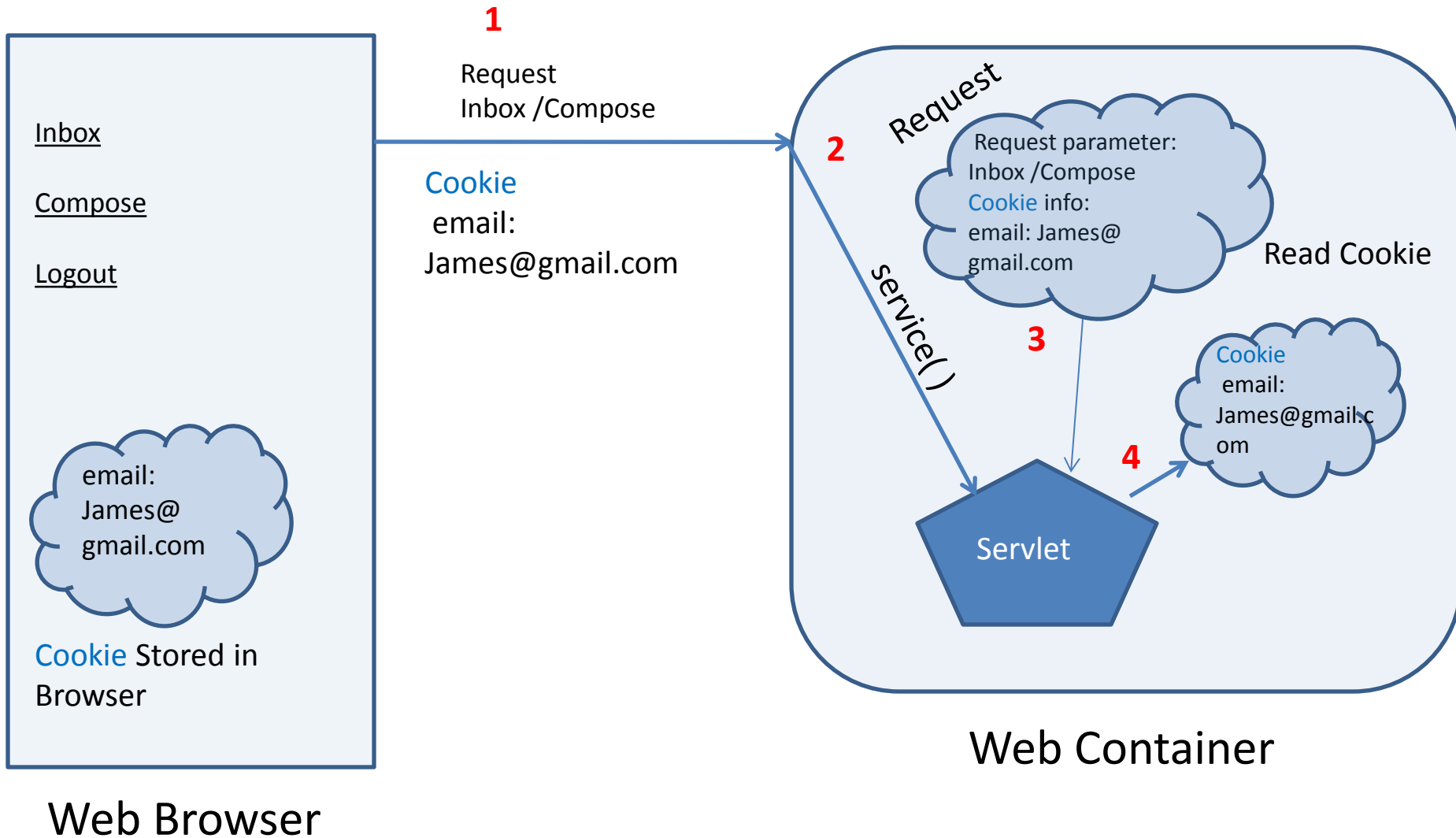
Cookie

- **Cookies** can be used for session tracking.
- A *cookie* is a bit of information sent by a web server to a browser that can later be read back from that browser.
- Browser receives a cookie and it saves the cookie.
- Browser sends the cookie back to the server each time it accesses a page on that server

How cookies work?



How cookies work?



Cookie and Servlet API

- Creating a Cookie using constructor:
 - `public Cookie(String name, String value)`
 - This creates a new cookie with an initial name and value
- Sending a cookie to the client:
 - `public void addCookie(Cookie cookie)` method of `HttpServletResponse`
- Retrieving all cookies sent by the web browser:
 - `public Cookie[] getCookies()` method of `HttpServletRequest`.

HttpSession API

- HttpSession interface is used by the Web Container to create a session between the HTTP server and an HTTP client.
- A Servlet uses its request object's getSession() method to retrieve the current HttpSession object:



This method returns the current session associated with the user making the request.

If the user has no current valid session, this method creates one if **create** is true or returns null if **create** is false.

HttpSession API

- void **setAttribute**(String name, Object value)
 - Binds an object to this session, using the name specified.
- void **removeAttribute**(String name)

Removes the object bound with the specified name from this session.
- Object **getAttribute**(String name)

Returns the object bound with the specified name in this session, or null if no object is bound under the name.
- void **setMaxInactiveInterval**(int interval)

Specifies the time, in seconds, between client requests before the servlet container will invalidate this session

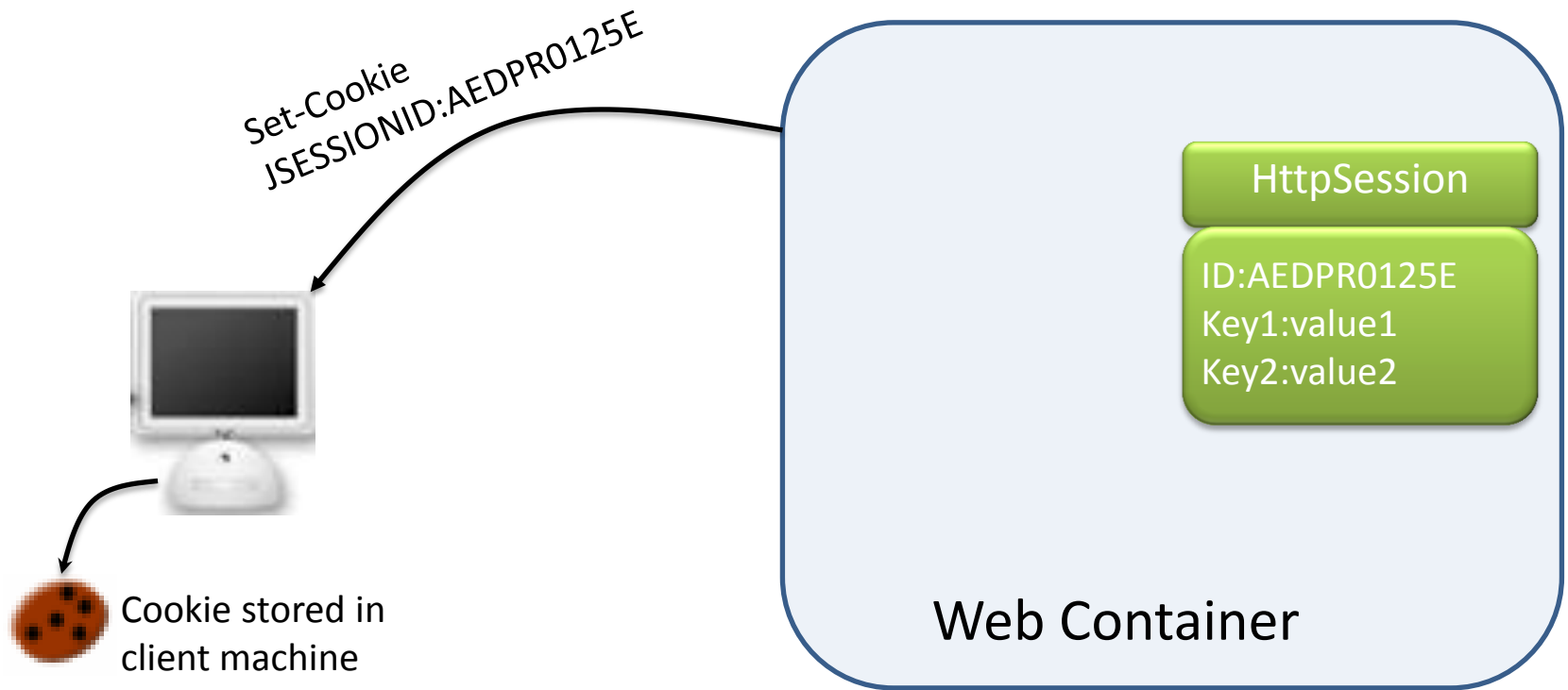
<<interface>>
HttpSession

+setAttribute(name: String, value: Object): void
+removeAttribute(name: String): void
+getAttribute(name: String): Object
+setMaxInactiveInterval(interval: int): void
+invalidate(): void

- void **invalidate**()

Invalidates this session then unbinds any objects bound to it.

HttpSession API



Every Session created for Client's will have an unique Session ID.
The Session ID will be sent to the client in the form of Cookie or URL-Rewriting.
Client browser stores cookies and for every new request cookie information will be sent to the server through request headers.

HttpSession API

Cookie JSESSIONID:AEDPR0125E

Send cookie as
request header

Read stored
cookie

Cookie
JSESSIONID:2LW4QB1

Send cookie as
request header

Read stored
cookie

HttpSession

ID:AEDPR0125E
Key1:value1
Key2:value2

HttpSession

ID:2LW4QB1
Key1:value1

Web Container

Request, Session and ServletContext all in one

Request

ServletContext

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Session vs ServletContext vs Request

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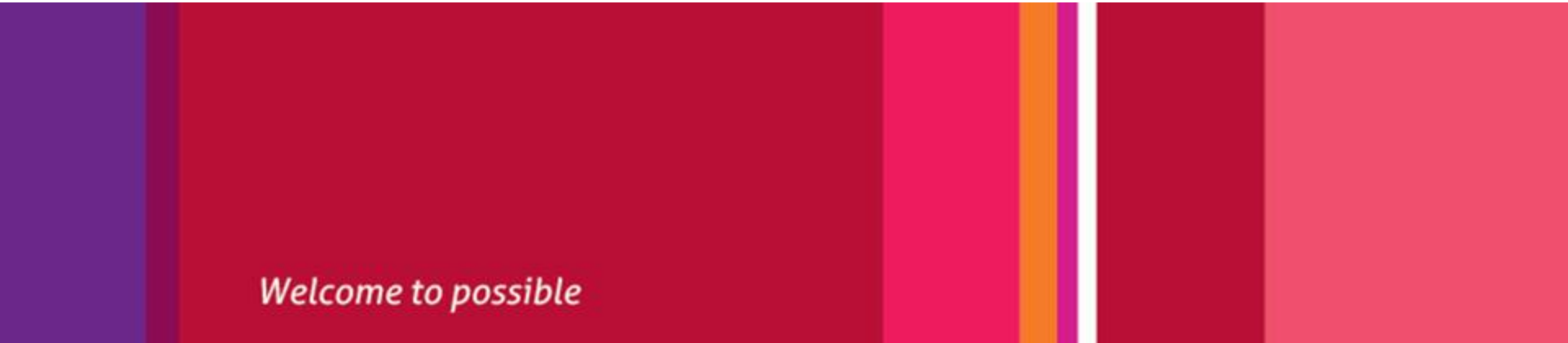
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Session

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