

Tishreen University
Faculty of Informatics Engineering
Fifth Year

Internet applications

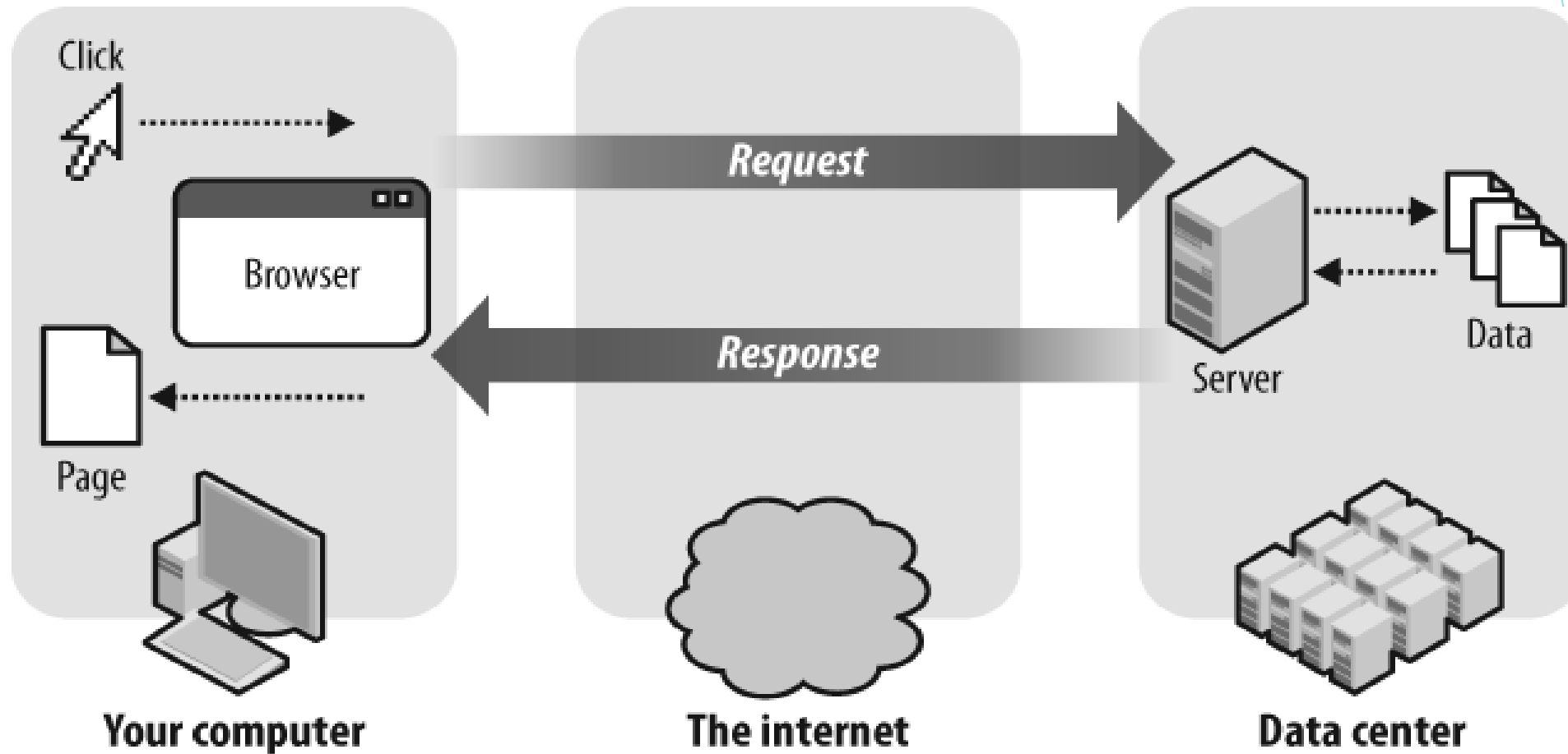
Session 1

What is internet application ?

- ▶ Internet application is any application that use the networks to provide services to the user such as (chat apps - searching apps - ... etc.)
- ▶ There are two types of internet applications:
 - ▶ Client - Server application : the client connects to the server to request data from it for example (Facebook - WhatsApp - Gmail -.... etc.) .
 - ▶ Peer to peer applications: clients connected to each other without servers between them like torrent apps .

Our main target in this class is client - server applications

How Client - server applications work ?



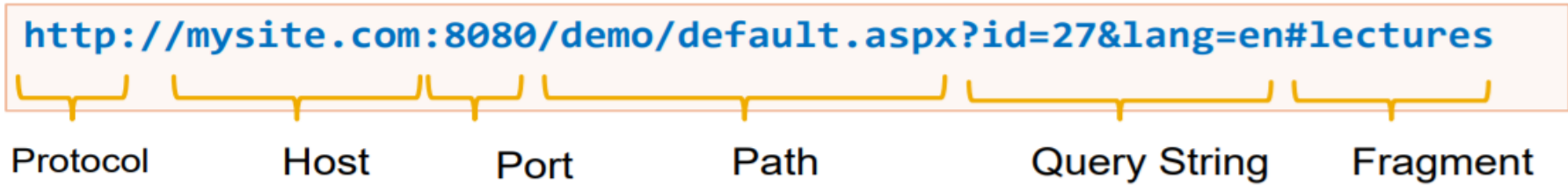
Types of clients

- ▶ In the internet application the client can be :
 - ▶ Web browser
 - ▶ Mobile application
 - ▶ Another server requests some resources from the server
- ▶ The requests of the (web browser and Mobile application) are mainly sent with the HTTP (Hyper Text Transfer Protocol) and the Responses of the servers are also provided by the HTTP
- ▶ Every request must have a response from the server and the response is a resource located on the server
- ▶ The resource can be (file - web page - some records from database ...etc)
- ▶ The main resources in our applications will be web pages

HTTP protocol

- ▶ HTTP is a text-based communication protocol that is used to request resources from the server and send the response back to the client.
- ▶ HTTP protocol has many methods to request from the server each method is used for a specified job :
 - ▶ GET : to retrieve data from the server (like get users from database)
 - ▶ POST: to send data to the server (like add new user to database).
 - ▶ There are other methods : PUT - DELETE - OPTIONS .
- ▶ Every HTTP request must have a URL (Uniform Resource Locator) which locates the related resource on the server

URL parts



- ▶ URL is a formatted string and consisting of:
 - ▶ Protocol for communicating (HTTP - ftp - ws - ... etc.)
 - ▶ Host or IP address (facebook.com - 127.0.0.1)
 - ▶ Port is a number between 0 and 65535 , the default is 80 for http.
 - ▶ Path (/index.php , /demo/default.aspx) where the resource is located
 - ▶ Query string : some data sent with the request
 - ▶ Fragments : locates a section in a web page the resource is a web page

Techniques and languages

- ▶ To develop an internet application we need some different techniques for the client side application and the server side application .
- ▶ In the client side application we have many different techniques that can be used depending on the type of client (web browser or Mobile) .
In web applications we mainly use :
 - ▶ HTML : Hyper Text Markup Language to define what the web page contains
 - ▶ CSS: Cascading StyleSheets to style the web page
 - ▶ Javascript : to make our web page interactive with the user
- ▶ In the server side application we also have a lot of techniques and languages that can be used but in our class we will use the following :
 - ▶ PHP language and Laravel framework based on it
 - ▶ Mysql for database.

HTML

- ▶ HTML is the main language in the web pages , it describes what is the structure of the web page and how the browser should display the content .
- ▶ HTML consists of a series of element , each element represented by tag which tells the browser how to display the content of the tag .
- ▶ The initial release of HTML was in 1993 and the last release is HTML5 which released in 2014 , during these 21 years HTML had many changes many elements disappeared and new elements become the most used now.
- ▶ Each element in HTML represented by tag , many of them are doubled tag elements and the others are single tag elements
- ▶ The doubled tag elements of HTML can be nested so that we can put some elements inside others but we can't do that with single tag elements.
- ▶ HTML file has the extension html or htm

Structure of html file

```
<!DOCTYPE html>
```

```
<!-- this is the comment in html -->
```

```
<html><!-- every html page must start with this tag -->
```

```
  <head> <!-- the element contains some elements which not displayed  
  to the user but they have some elements  
  for loading files and styles and another data -->
```

```
    <title>Session 1</title>
```

```
  </head>
```

```
  <body> <!-- the main part of web page which  
  contains what the user see in the web page -->
```

```
    <h1><!-- opening tag of double tag elemnt -->
```

```
      Welcome to the internet application class
```

```
    </h1><!-- close tag of double tag elemnt -->
```

```
    <img src = "C:\Users\ASUS\Downloads\Internet-Applications.jpg"  
    width=200 height=200 /> <!-- single tag element -->
```

```
  </body>
```

```
</html>
```

Elements structure in HTML

- ▶ every element in html has the following :
 - ▶ Tag name: like p - img - div - uletc.
 - ▶ Attributes : some parameters of the shape (key = “value”) used to pass data to the element , control the behavior of the element or something else , each element has its specified attributes which are not accepted for another element but there are some attributes accepted by all elements :
 - ▶ Id: identifier for the element , it must be unique in the whole web page
 - ▶ Class: an attribute used to classify elements (according to functionality or style)
 - ▶ Style : to add some style for the element
 - ▶ Event attributes : those attributes used to control the element by javascript for example what happened when you click on this button .

None of these attributes are required by default .

Some elements in html

Tag name	description	attributes
<p>	Add paragraphs	No specific attrs
<h1> to <h6>	Different sizes of heading h1 is the largest	No specific attrs
<a>	Add hyper link to external website or another web page	Href - target
	Add image	Src - alt - width - height
 	To add unordered - ordered lists	No specific attrs
	List element	No specific attrs
<form>	To define a form in the web page	Action -method
<input>	Used inside form element to handle user input	Type - name - value - placeholder
<table>	Add table	border
<thead>	To define table columns	No specific attrs
<tbody>	To define table rows	No specific attrs

Tag name	Description	attributes
<tr> <th>	To add row to a table	Colspan, rowspan
<td>	To add column in a row	Colspan, rowspan
<tfoot>	Add footer to the table	No specific attrs
<caption>	Add caption to the table	No specific attrs
<div>	Divide web page into blocks each of them contains some elements	No specific attrs
	Same as div element but the blocks arranged inline	No specific attrs
<title>	Used in head element to define the title of the web page	No specific attrs
<link>	Used in head element to request css files	Href - type
<script>	Used to load JavaScript file or to write javaScript code	src
<meta>	Define some information about the current web page	Charset - name - http-equiv - content

Any Questions ?

