



Topic:

Introduction to basic concepts of jQuery

Objectives:

Students are expected to be able to:

1. Understand the basic concepts of jQuery
2. Implementing jQuery

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Introduction

Introduction to jQuery

jQuery was released in 2006 by John Resig. jQuery is a JavaScript library or a collection of "ready-made" JavaScript code/functions. In line with jQuery's slogan, which is "*write less, do more*", jQuery is used to make it easier to compile JavaScript code on HTML files. jQuery's syntax is designed in such a way that it makes it easier for programmers to navigate documents, select DOM elements, apply animations, apply *events*, and build AJAX applications. The advantages of using jQuery include:

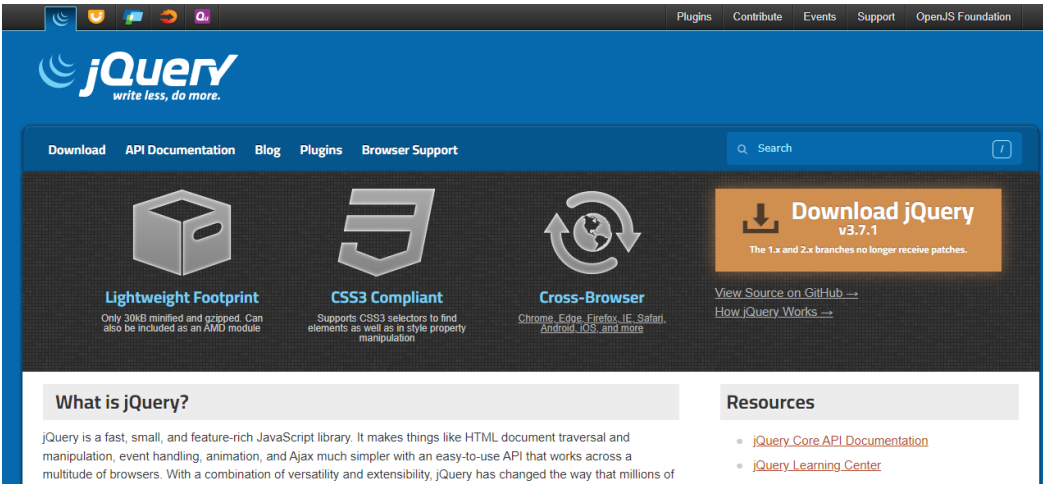

- Comprehensive documentation and tutorials
The functions provided are well documented along with examples of their use, read on the site <http://jquery.com> this makes it easier to learn jquery.
- Short and Clear
jQuery prioritizes writing concise and clear code through the sharing of features such as chain-able functions and short function names.
- Addresses cross-browser compatibility issues
JavaScript engines in various browsers are different from each other, so scripts that run in one browser can fail in another. jQuery addresses any of these inconsistencies between browsers and provides an interface that works consistently across all browsers.
- Extensible
jQuery makes framework development very simple. Various new events, elements, and methods can be easily added and reused as plugins.

Practical Section 1. Preparing to Use JQuery

There are 2 ways to input jQuery files into HTML: download and access jQuery locally or use a CDN (*Content Delivery Network*).

- download and access jQuery locally
In order to use jQuery, users must download the jQuery file and then associate it with the `<script>` tag. Then follow these steps:

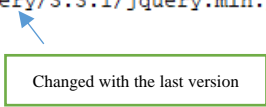
Step	Description
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1	Create a new directory " praktik_jquery " in the directory dasarWeb that you created in the previous meeting.
2	<p>Open the official jQuery website on http://jquery.com/ . then it will appear the main page of jQuery, click the "Download jQuery" button.</p> 
3	<p>Click link "Download the uncompressed, development version of jQuery 3.7.1. Then right click and choose "Save as ..".</p> 
4	Save jquery-3.5.1.js files in the " basicWeb/praktik_jquery " directory.
5	<p>To connect the jQuery file with HTML, add a <script tag> by changing the address of the jquery-3.7.1.js to the version we have downloaded i.e. jquery-3.7.1.js. Create a new file and then type in the code like the following example:</p> <pre> 1 <!DOCTYPE HTML> 2 <html> 3 <head> 4 <title>Praktikum jQuery</title> 5 <script src="jquery-3.3.1.js"></script> 6 </head> 7 <body> 8 </body> 9 </html> </pre> <p>The above HTML code must be stored in 1 directory with the jquery-3.7.1.js file</p>

- input jQuery files using CDN (*Content Delivery Network*). CDN is a global repository that can be accessed by anyone. Using a CDN does not require downloading jQuery files, but in order for jQuery to run, it must always be connected to the internet. There are many CDN options, such as Google CDN and Microsoft CDN, how to use them is as follows:

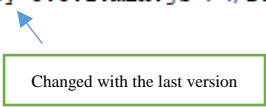
1. Google CDN

```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
5   </head>
6   <body>
7   </body>
8 </html>
```



2. Microsoft CDN

```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <script src="https://ajax.aspnetcdn.com/ajax/jquery/jquery-3.3.1.min.js"></script>
5   </head>
6   <body>
7   </body>
8 </html>
```



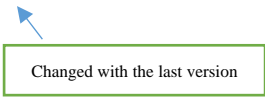
In this practicum, you are advised to use jQuery by downloading/accessing jQuery locally. This aims to avoid the possibility of problems in the internet connection.

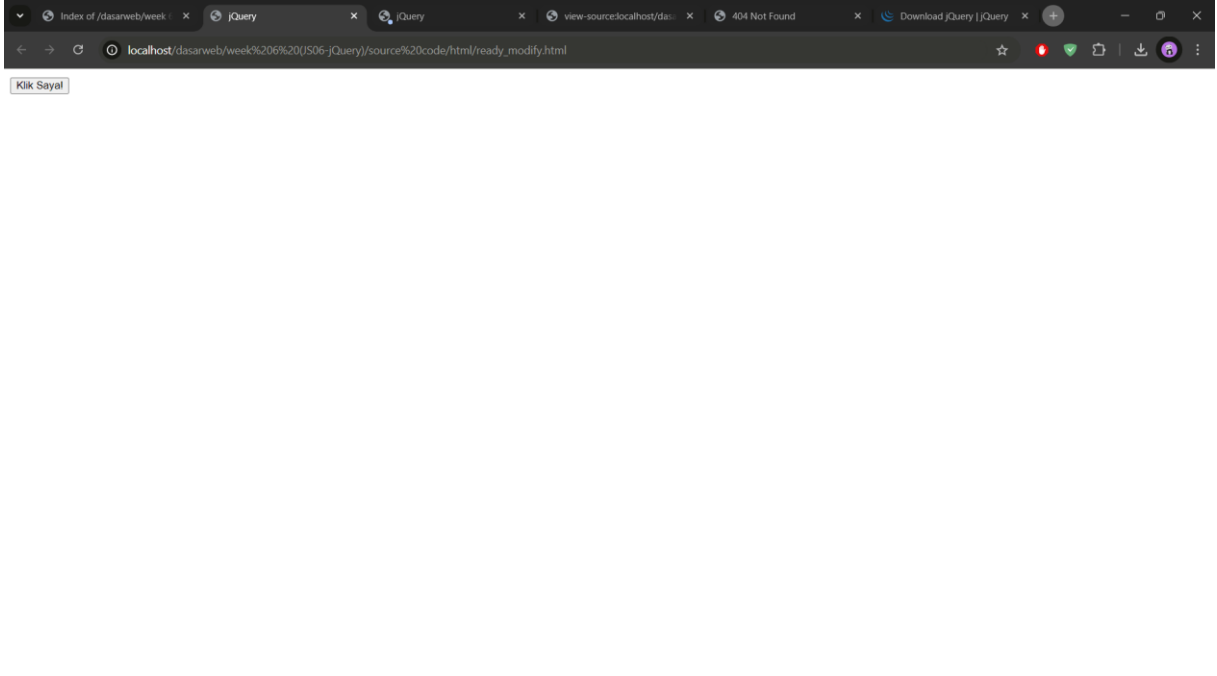
Practical Section 2. Document Ready Function

Once you understand how to use jQuery. Before executing the next code, jQuery will make sure that all the desired elements or elements are already displayed on the web page, the function to be used is the document **ready()** function. Here is the basic syntax of the document **ready()** function:

```
$(document).ready(function() {
  jQuery code line
});
```

To understand the function of document **ready()** perform the following practicum steps:

Step	Description
1	<p>Create a new HTML file named ready.html in the dasarWeb/praktik_jquery directory, type the following program code:</p> <pre>1 <!DOCTYPE html> 2 <html> 3 <head> 4 <script type="text/javascript" src="jquery-3.3.1.js"></script> 5 <script> 6 \$(document).ready(function() { 7 \$("#button1").click(function() { 8 alert("Ini Praktikum Minggu ke-4"); 9 }); 10 }); 11 </script> 12 </head> 13 <body> 14 <input type="button" id="button1" value="Klik Saya!"/> 15 </body> 16 </html></pre> 

2	Save the file, then open a browser and run it by typing localhost/dasarWeb/praktik_jquery/ready.html
3	After the program is run, click the "Click Me!" button, then observe the display on the browser.
4	<p>Next, modify the file by removing the program code on lines 6 and 10, so that the program code looks like this:</p> <pre> 1 <!DOCTYPE html> 2 <html> 3 <head> 4 <script type="text/javascript" src="jquery-3.3.1.js"></script> 5 <script> 6 7 \$("#button1").click(function(){ 8 alert("Ini Praktikum Minggu ke-4"); 9 }); 10 11 </script> 12 </head> 13 <body> 14 <input type="button" id="button1" value="Klik Saya!"/> 15 </body> 16 </html> </pre> <p>Changed with the last version</p>
5	Save the file. Then open a browser and run the program code by typing localhost/dasarWeb/praktik_jquery/ready.html
6	After the program is run, click the "Click Me!" button, then observe the display on the browser.
7	<p>From your observations, what do you understand from the document <code>ready()</code> function? Record the results of your observations and explanations of your understanding below (Question No. 1)</p>  <p>The screenshot shows a web browser window with multiple tabs. The active tab is titled 'jQuery' and shows a local file 'ready_modify.html'. The browser address bar displays 'localhost/dasarweb/week%206%20US06-jQuery/source%20code/html/ready_modify.html'. The page content consists of a single button with the text 'Klik Saya!'.</p> <hr/> <p>- <code>\$(document).ready()</code> this method makes sure the function passed inside it will only run after the entire HTML document is fully loaded.</p>

It was previously explained that jQuery makes it easy for us to simplify JavaScript code. In other words, jQuery allows for much shorter writing of JavaScript program code. For example, if there is an HTML element like the following:

```
<button id="button"> Click Me! </button>
```

in JavaScript to find HTML elements use the `getElementById()` method, so that to access the `<button>` element that has `id="button"` is:

```
var x = document.getElementById("button");
```

with jQuery selector the program code writing becomes shorter, to look for HTML elements with `id="button"` is:

```
var x = $("#button");
```

The jQuery selector functions to select/retrieve HTML elements to be manipulated. Here are some ways the selector selects/retrieves HTML elements:

- **selector tag**
Use the Tag Selector by directly mentioning the name of the element tag, such as paragraph `<p>`, image ``, header `<h1>`, and so on.
- **id**
Using the id selector is to include a hashtag sign (`#`) before the element's name
- **class**
Using a selector class is to include a period (`.`) before the name of the element.

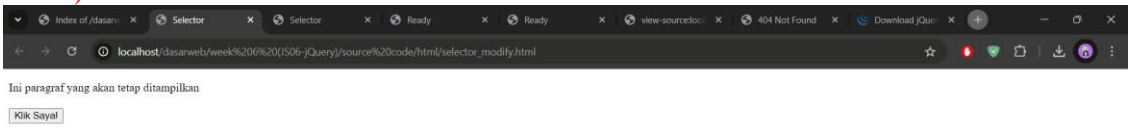
The jQuery selector syntax is usually created to select HTML elements and perform actions on the selected elements. Here is the basic syntax of the jQuery selector:

```
$(selector).action()
```

- **dollar sign (\$)**, to define jQuery
- **(selector)**, to indicate the selected element
- **action()**, is the jQuery action that will be performed on the selected element

To understand the use of `tag`, `id`, and `class` selectors follow the steps of the practicum below:

Step	Description
1	Create a new HTML file named selector.html in the dasarWeb/praktik_jquery directory, type the following program code into the file.

	<pre> 1 <!DOCTYPE html> 2 <html> 3 <head> 4 <script src="jquery-3.3.1.js"></script> 5 <script> 6 \$(document).ready(function() { 7 \$("button").click(function() { 8 \$("h2").hide(); 9 \$(".subjudul").hide(); 10 \$("#paragraf").hide(); 11 \$("#paragraf.dua").hide(); 12 \$("div p.paragraf").hide(); 13 }); 14 }); 15 </script> 16 </head> 17 <body> 18 <h2> Ini adalah Judul Bab</h2> 19 <h3 class="subjudul"> Ini adalah Sub Judul Bab</h3> 20 <p id="paragraf"> Ini adalah paragraf pertama </p> 21 <p id="paragraf" class="dua"> Ini adalah paragraf kedua </p> 22 <div> 23 <p class="paragraf"> 24 Ini adalah paragraf ketiga 25 </p> 26 </div> 27 <p> Ini paragraf yang akan tetap ditampilkan</p> 28 <button> Klik Saya! </button> 29 </body> 30 </html> </pre> <p>Changed with the last version</p>
2	Save the file, then open a browser and run the program code by typing localhost/dasarWeb/praktik_jquery/selector.html
3	After the program is run, click the "Click Me!" button, then observe the display on the browser.
4	<p>Record and explain your observations after running the program code above. (Question No. 2)</p>  <p>- Click the "Klik Saya!" button and the selected elements (h2, h3.subtitle, p#paragraf, p#paragraf.dua, and <div>p.paragraf) will disappear from the page.</p>

5	<p>In the program code in step number 1, there are some jQuery selector writings. Write down and explain what jQuery Selector is in your code. (Question No. 3)</p> <pre> 1 <script> 2 \$(document).ready(function () { 3 \$('#button1').click(function () { 4 \$('h2').hide(); 5 \$('.subjudel').hide(); 6 \$('#paragraf').hide(); 7 \$('#paragraf.2').hide(); 8 \$('div p.paragraf').hide(); 9 }); 10 }); 11 </script> </pre>
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Practical Section 4. Events

An *event* is something that the user can do to an HTML element. Examples of *events* are *click*, *double click*, *mouseover* (the mouse cursor is on top of the element), *mouseout* (the mouse cursor is out of the top of the element), and so on. The basic syntax of jQuery events is as follows:

```

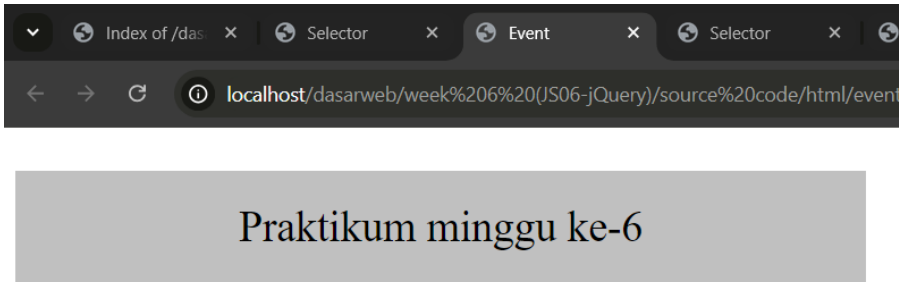
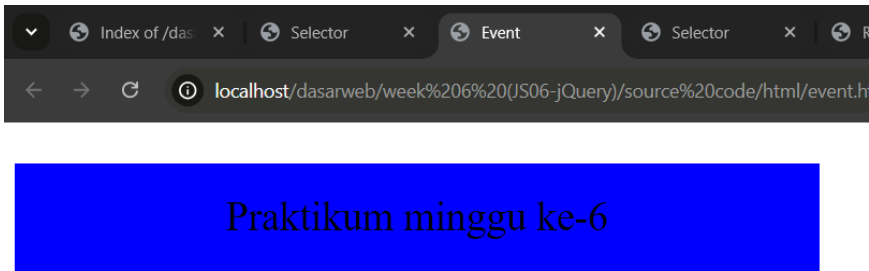
$("jquery_selector").jquery_event(function() {
... event out ... });


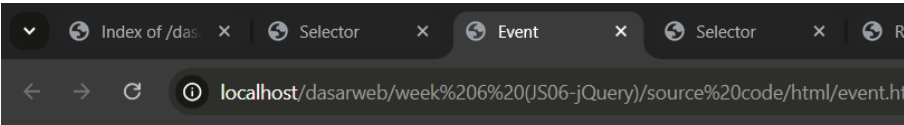

```

- dollar sign (\$), to define jQuery
- ("jquery_selector"), to indicate the selected element
- jquery_event(function()), is an event that will be performed on the selected element

To understand the use of jQuery events follow these steps:

Step	Description
1	<p>Create a new HTML file named event.html in the dasarWeb/praktik_jquery directory, then type the following program code:</p> <pre> 1 <!DOCTYPE html> 2 <html> 3 <head> 4 <style> 5 #paragraf { </pre>

	<pre> 6 width:600px; 7 height:80px; 8 background-color:pink; 9 line-height:80px; 10 text-align:center; 11 font-size:30px; 12 } 13 </style> 14 <script src="jquery-3.3.1.js"></script> 15 <script> 16 \$(document).ready(function() { 17 18 \$("#paragraf").click(function() { 19 \$("#paragraf").css("color", "white"); 20 }); 21 22 \$("#paragraf").mouseover(function() { 23 \$("#paragraf").css("background-color", "silver"); 24 }); 25 26 \$("#paragraf").mouseout(function() { 27 \$("#paragraf").css("background-color", "blue"); 28 }); 29 30 \$("#paragraf").dblclick(function() { 31 \$("#paragraf").css("border", "solid 3px black"); 32 }); 33 }); 34 </script> 35 </head> 36 <body> 37 <p id="paragraf">Praktikum Minggu ke-4 JQuery</p> 38 </body> 39 </html> </pre> <p>Changed with the last version</p>
2	<p>Save the file, then open a browser and run the program code by typing localhost/dasarWeb/praktik_jquery/event.html</p>
3	<p>Once the program is running, do the following:</p> <ul style="list-style-type: none"> - Place the mouse cursor over the element - Move the mouse cursor out the element - one-click on the element - Double-click on the element <p>Then observe the changes that occur</p>
4	<p>Record and describe the changes that occurred based on your observations (Question No. 4)</p>  

- Click Event: Changes the text color to white when a paragraph is clicked.
- Mouseover Event: Changes the background color to silver when the mouse is over the paragraph.
- Mouseout Event: Changes the background color to blue when the mouse exits the paragraph.
- Double-click Event: Adds a black border with a thickness of 3px when the paragraph is double-clicked.

Practical Section 5. Hide and Show Effect

JQuery provides "ready-to-use" functions that can be used to give a variety of interesting visual effects to elements. The basic syntax of jQuery effects is:

```
$("jquery_selector").jquery_effect({parameter}, {value})
```

- dollar sign (\$), to define jQuery
 - ("jquery_selector"), to indicate the selected element
 - jquery_effect({parameter}, {value}), is the effect that will be applied to the element.
- Effects can have certain parameters and values to set the effect to be given.

There are various effects that jQuery provides, including `hide()` to hide elements and `show()` to show elements. There are also `fadeIn()`, `fadeOut()`, and `fadeTo()` effects that are used to show or fade elements slowly, making the transitions look smoother. To understand jQuery Effect, follow these steps:

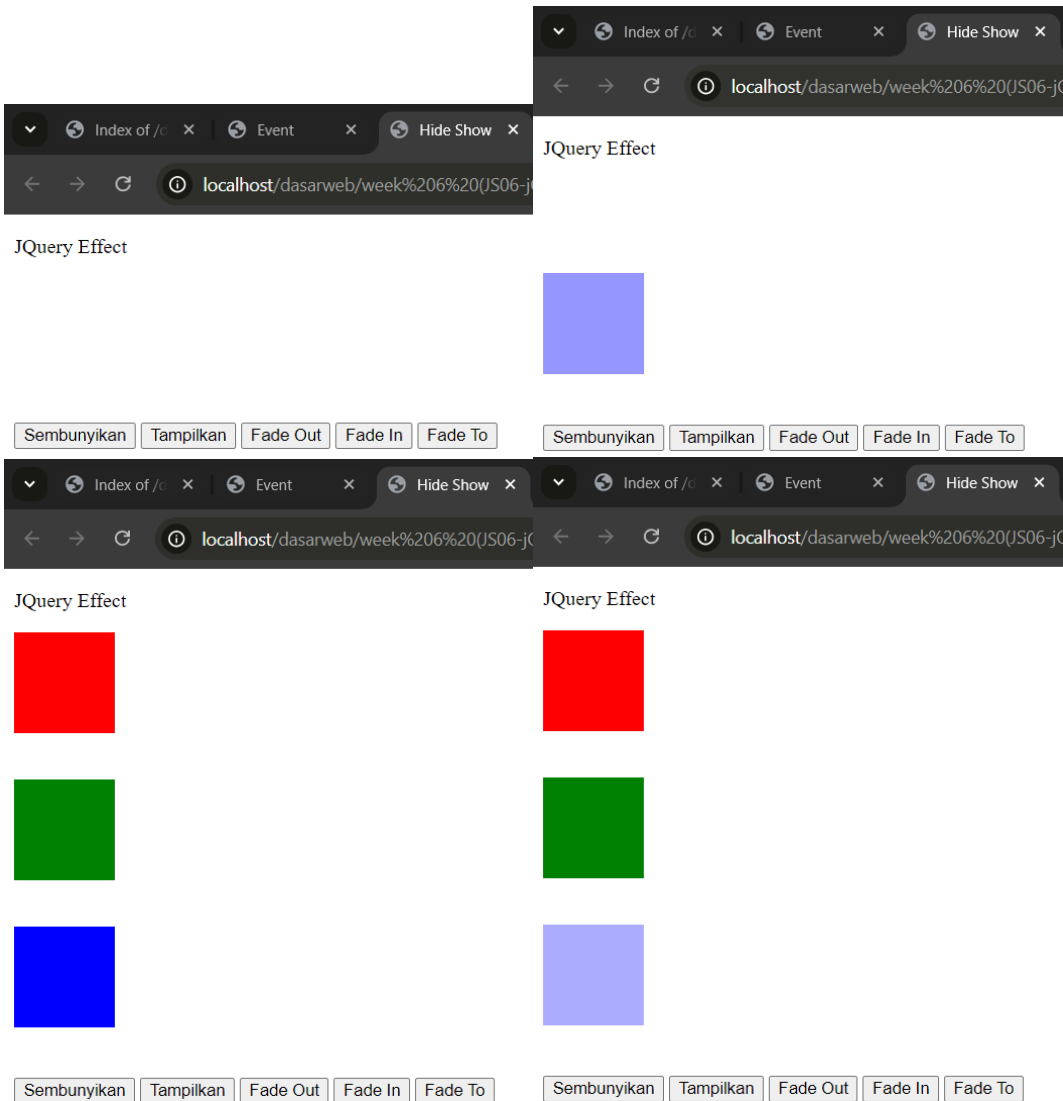
Step	Description
1	Create a new HTML file named hideshow.html in the dasarWeb/praktik_jquery directory, then type the following program code:

	<pre> 1 <!DOCTYPE html> 2 <html> 3 <head> 4 <link rel="stylesheet" type="text/css" href="style.css"/> 5 <script src="jquery-3.3.1.js"></script> 6 <script> 7 \$(document).ready(function() { 8 \$(".tombol1").click(function() { 9 \$(".div").hide(); 10 }); 11 \$(".tombol2").click(function() { 12 \$(".div").show(); 13 }); 14 \$(".tombol3").click(function() { 15 \$("#div1").fadeOut(); 16 \$("#div2").fadeOut("slow"); 17 \$("#div3").fadeOut(3000); 18 }); 19 \$(".tombol4").click(function() { 20 \$("#div1").fadeIn(); 21 \$("#div2").fadeIn("slow"); 22 \$("#div3").fadeIn(3000); 23 }); 24 \$(".tombol5").click(function() { 25 \$("#div1").fadeTo("slow", 0.15); 26 \$("#div2").fadeTo("slow", 0.4); 27 \$("#div3").fadeTo("slow", 0.7); 28 }); 29 }); 30 </script> 31 </head> 32 <body> 33 <p>jQuery Effect</p> 34 <div id="div1" class="kotak"></div>

 35 <div id="div2" class="kotak"></div>

 36 <div id="div3" class="kotak"></div>

 37 <button class="tombol1">Sembunyikan</button> 38 <button class="tombol2">Tampilkan</button> 39 <button class="tombol3">Fade Out</button> 40 <button class="tombol4">Fade In</button> 41 <button class="tombol5">Fade To</button> 42 </body> 43 </html> </pre> <p>Changed with the last version</p>
2	<p>In the same directory, create a new file named style.css then type the following program code:</p> <pre> 1 .kotak{ 2 width:80px; 3 height:80px; 4 } 5 6 #div1{ 7 background-color:red; 8 } 9 10 #div2{ 11 background-color:green; 12 } 13 14 #div3{ 15 background-color:blue; 16 } </pre>
3	<p>Save the file, then open a browser and run the program code by typing localhost/dasarWeb/praktik_jquery/hideshow.html</p>

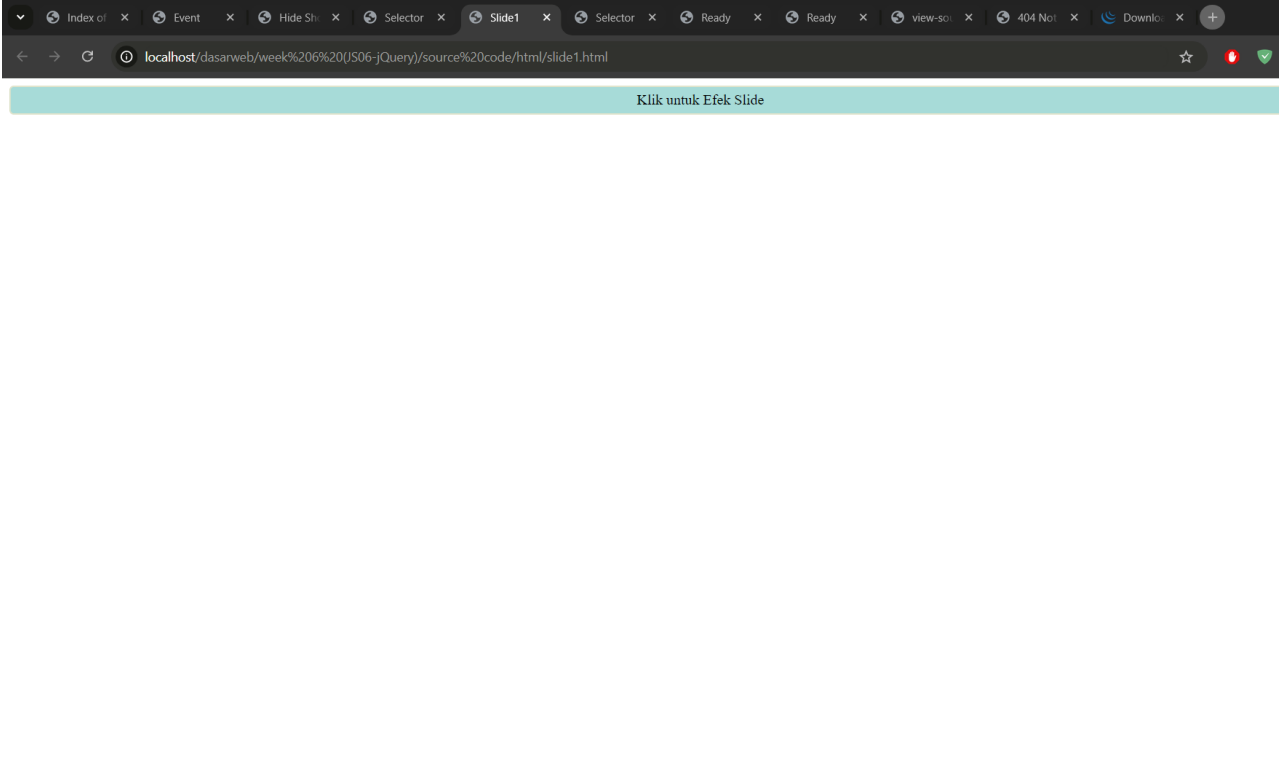
4	After the program clicks the buttons in order, then observe the changes that occur.
5	<p>Record and describe the changes that occurred based on your observations (Question No. 5)</p>  <ul style="list-style-type: none"> - Hide all <div> elements when this button is clicked using .hide(). - Reveal all hidden <div> elements when this button is clicked using .show(). - #div1 disappears at standard speed. #div2 disappears more slowly at “slow” speed. #div3 disappears for 3 seconds (3000 milliseconds). - #div1 appears at standard speed. #div2 appears slower at “slow” speed. #div3 appears for 3 seconds. - #div1 changes to opacity 0.15. #div2 changes to opacity 0.4. #div3 changes to opacity 0.7.

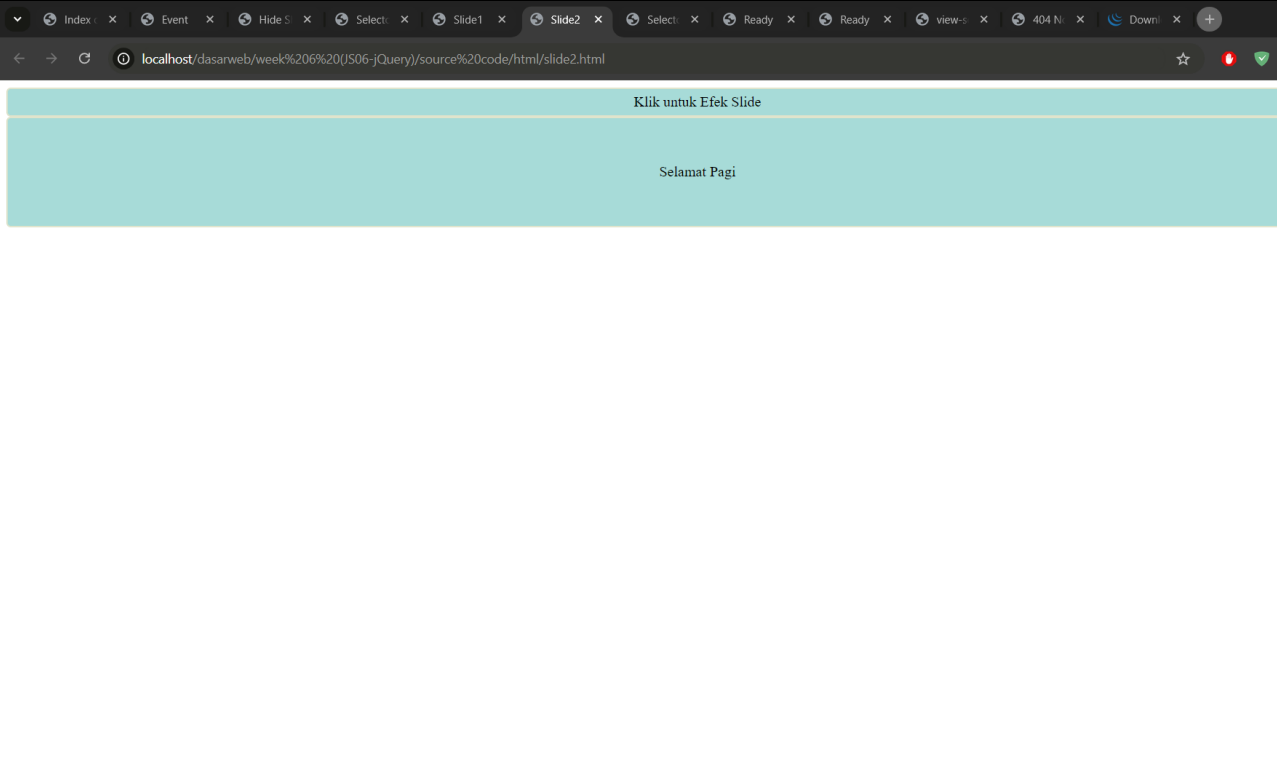
Practical Section 6. Slide Effect

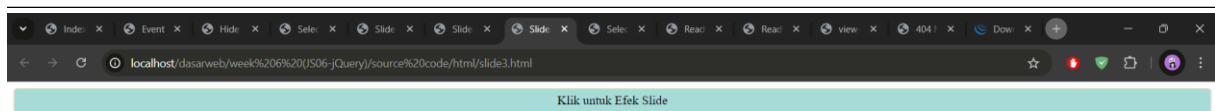
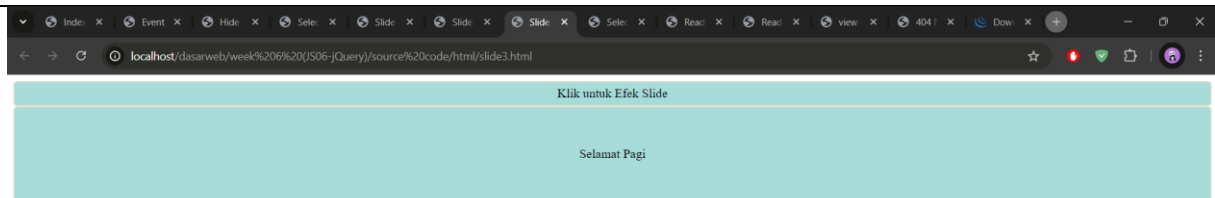
The slide effect that jQuery provides is used to remove or display elements as if they were opening/closing something. The basic syntax used is the same as the syntax for adding `hide()` or `show()` effects, but uses a different jQuery effect function.

There are 3 types of slide effects, namely `slideUp`, `slideDown`, and `slideToggle`. To understand the effect of slides, follow these practicum steps:

Step	Description
1	<p>Create a new HTML file named <code>slide1.html</code> in the <code>dasarWeb/praktik_jquery</code> directory, then type the following program code:</p> <pre> 1 <!DOCTYPE html> 2 <html> 3 <head> 4 <link rel="stylesheet" type="text/css" href="styleSlide.css"/> 5 <script src="jquery-3.3.1.js"></script> 6 <script> 7 \$(document).ready(function(){ 8 9 \$("#flip").click(function(){ 10 \$("#kotak2").slideUp("slow"); 11 }); 12 </script> 13 </head> 14 <body> 15 <div id="flip">Klik untuk Efek Slide</div> 16 <div id="kotak2">Selamat Pagi</div> 17 </body> 18 </html> </pre>
2	<p>In the same directory, create a new file named <code>styleSlide.css</code> and type the following program code:</p> <pre> 1 #kotak2, #flip { 2 padding:5px; 3 text-align:center; 4 background-color:#a7dbd8; 5 border: solid 2px #e0e4cc; 6 border-radius: 5px; 7 } 8 9 #kotak2 { 10 padding: 50px; 11 } </pre>
3	<p>Save the file, then open a browser and run the program code by typing <code>localhost/dasarWeb/praktik_jquery/slide1.html</code></p>
4	<p>Once the program is running, click on the "Click for Slide Effect" panel, then observe the changes that occur</p>
5	<p>Record and explain the changes that occurred based on your observations (Question No. 6)</p>

	
	<ul style="list-style-type: none"> - <code>\$("#flip").click()</code>: When the #flip div is clicked, the jQuery function is executed. - <code>\$("#box2").slideUp("slow")</code>: The slideUp() method shrinks the #box2 element vertically until it disappears, with a duration of "slow".
6	<p>Create a new HTML file file named slide2.html, copy the program code in step 1 and modify it by changing a few lines of program code, so that the program code looks like this:</p> <pre> 1 <!DOCTYPE html> 2 <html> 3 <head> 4 <link rel="stylesheet" type="text/css" href="styleSlide.css"/> 5 <script src="jquery-3.3.1.js"></script> 6 <script> 7 \$(document).ready(function() { 8 \$("#flip").click(function() { 9 \$("#kotak2").slideDown("slow"); 10 }); 11 }); 12 </script> 13 </head> 14 <body> 15 <div id="flip">Klik untuk Efek Slide</div> 16 <div id="kotak2" style="display:none;">Selamat Pagi</div> 17 </body> 18 </html> </pre> <p>Changed with the last version</p>
7	<p>Save the file, then open a browser and run the program code by typing localhost/dasarWeb/praktik_jquery/slide2.html</p>
8	<p>Once the program is running, click on the "Click for Slide Effect" panel, then observe the changes that occur.</p>
9	<p>Record and describe the changes that occur based on your observations (Question No. 7)</p>

	
	<ul style="list-style-type: none"> - <code>\$("#flip").click()</code>: When the #flip div is clicked, the jQuery function is executed. - <code>\$("#box2").slideDown("slow")</code>: The slideDown() method displays the #box2 element vertically, with a duration of "slow".
10	<p>Create a new HTML file named slide3.html, copy the program code in step 1 and modify it by changing a few lines of program code, so that the program code looks like this:</p> <pre> 1 <!DOCTYPE html> 2 <html> 3 <head> 4 <link rel="stylesheet" type="text/css" href="styleSlide.css"/> 5 <script src="jquery-3.3.1.js"></script> 6 <script> 7 \$(document).ready(function() { 8 \$("#flip").click(function() { 9 \$("#kotak2").slideToggle("slow"); 10 }); 11 }); 12 </script> 13 </head> 14 <body> 15 <div id="flip">Klik untuk Efek Slide</div> 16 <div id="kotak2">Selamat Pagi</div> 17 </body> 18 </html> </pre> <p>Changed with the last version</p>
11	<p>Save the file, then open a browser and run the program code by typing localhost/dasarWeb/praktik_jquery/slide3.html</p>
12	<p>Once the program is running, click on the "Click for Slide Effect" panel, then observe the changes that occur.</p>
13	<p>Record and describe the changes that occurred based on your observations (Question No. 8)</p>



- `$("#flip").click()`: When the #flip div is clicked, the jQuery function is executed.
- `$("#box2").slideToggle("slow");`: The `slideToggle()` method is used to display the #box2 element with a slide effect if hidden, or hide it if shown, with a duration of "slow".

Practical Section 7. Animation

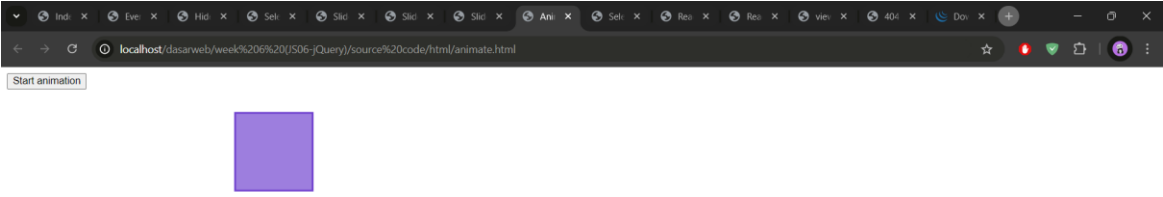
Animation effects are used to move an element. The `animate()` method can be used to create animation effects. The jQuery `animate()` syntax is as follows:

```
$("jquery_selector").animate({parameter},{value})
```

- dollar sign (\$), to define jQuery
- `("jquery_selector")`, to indicate the selected element
- Method `animate({parameter},{value})`, has parameters and values. Parameters define the properties of the element to be animated, e.g. "top", "left". Value defines the value of a parameter, for example "fast", "slow", or it can be in milliseconds (5000 = 5 seconds).

Method `animate()`

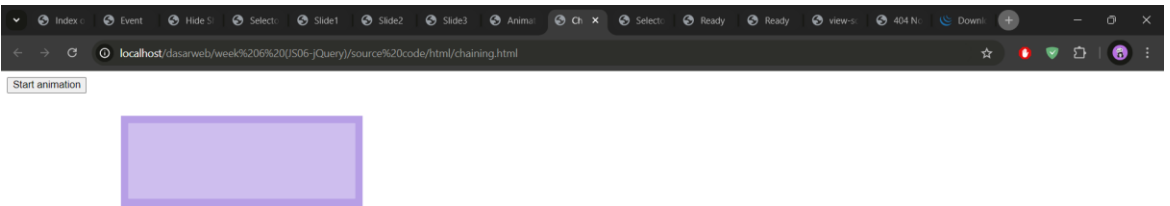
To understand the use of the `animate()` method in jQuery, follow these steps:

Step	Description
1	<p>Create a new HTML file named <code>animate.html</code> in the <code>dasarWeb/praktik_jquery</code> directory, then type the following program code:</p> <pre> 1 <!DOCTYPE html> 2 <html> 3 <head> 4 <link rel="stylesheet" type="text/css" href="styleAnimate.css"/> 5 <script src="jquery-3.3.1.js"></script> 6 <script> 7 \$(document).ready(function() { 8 \$("button").click(function() { 9 \$("div").animate({left: 300}); 10 }); 11 }); 12 </script> 13 </head> 14 <body> 15 <button type="button">Start Animation</button> 16 <div class="box"></div> 17 </body> 18 </html> </pre> <p>Changed with the last version</p>
2	<p>In the same directory, create a new file named <code>styleAnimate.css</code> and then type the following program code:</p> <pre> 1 .box{ 2 width: 100px; 3 height: 100px; 4 background: #9d7ede; 5 margin-top: 30px; 6 border-style: solid; 7 border-color: #6f40ce; 8 position: relative; 9 } </pre>
3	<p>Save the file, then open a browser and run the program code by typing <code>localhost/dasarWeb/praktik_jquery/animate.html</code></p>
4	<p>Once the program is running, click the "Start Animation" button, then observe the changes that occur.</p>
5	<p>Record and describe the changes that occurred based on your observations (Question No. 9)</p> 

	<ul style="list-style-type: none"> - <code>\$("#flip").click(function () { ... });</code>: This captures the click event on the element with the flip ID. However, currently the flip ID does not exist in HTML. - <code>\$("#box2").animate({ left: 300 });</code>: This function will animate the element with ID box2 to move 300 pixels to the right. However, since there is no element with ID box2, this won't work either.
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Method Chaining

Chaining inside jQuery makes it possible to assign multiple animation methods into a single element using a single *statement*. Follow these steps to understand method chaining:

Step	Description
1	<p>Create a new HTML file named <code>chaining.html</code> in the <code>dasarWeb/praktik_jquery</code> directory, and then type the following HTML code:</p> <pre> 1 <!DOCTYPE html> 2 <html> 3 <head> 4 <link rel="stylesheet" type="text/css" href="styleAnimate.css"/> 5 <script src="jquery-3.3.1.js"></script> 6 <script> 7 \$(document).ready(function() { 8 \$("button").click(function() { 9 \$(".box") 10 .animate({width: "300px"}) 11 .animate({height: "300px"}) 12 .animate({marginLeft: "150px"}) 13 .animate({borderWidth: "10px"}) 14 .animate({opacity: 0.5}); 15 }); 16 }); 17 </script> 18 </head> 19 <body> 20 <button type="button">Start Animation</button> 21 <div class="box"></div> 22 </body> 23 </html> </pre> <p>Changed with the last version</p>
2	<p>Save the file, then open a browser and run the program code by typing <code>localhost/dasarWeb/praktik_jquery/chaining.html</code></p>
3	<p>Once the program is running, click the "Start Animation" button, then observe the changes that occur.</p>
4	<p>Record and explain the changes that occur based on your observations (Question No. 10)</p> 

	<ul style="list-style-type: none"> - When click the “Start animation” button, the box will increase the width to 300 pixels, then increase the height to 300 pixels, then shift 150 pixels to the left, then change the border width to 10 pixels, and finally change the opacity to 0.5 (half transparent).
--	---

Practical Section 8. JQuery DOM Manipulation

JQuery provides methods for efficiently manipulating the DOM (*Document Object Model*). Here are some of the methods used to manipulate the DOM:

- `text()`, sets or returns the text of the selected element
- `html()`, set or *return* the content of the selected element while retaining the HTML tags present in the element
- `val()`, set or *return* the value of the form

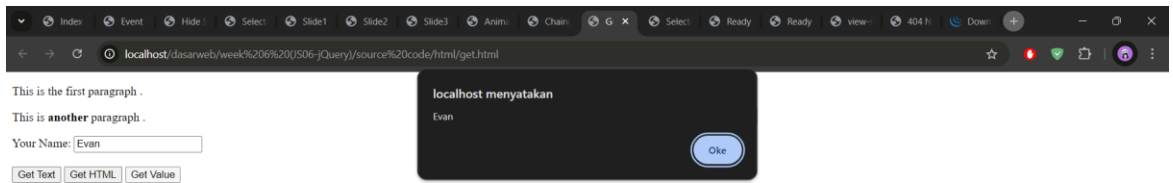
Fetching (GET) Content from HTML Elements

Practicum steps:

Step	Description
1	<p>Create a new HTML named <code>get.html</code> in the <code>dasarWeb/praktik_jquery</code> directory, then type the following program code:</p> <pre> 1 <!DOCTYPE html> 2 <html> 3 <head> 4 <script src="jquery-3.3.1.js"></script> 5 <script> 6 \$(document).ready(function() { 7 \$("#btn1").click(function() { 8 alert(\$("#test1").text()) 9 }); 10 \$("#btn2").click(function() { 11 alert(\$("#test2").html()) 12 }); 13 \$("#btn3").click(function() { 14 alert(\$("#test3").val()) 15 }); 16 }); 17 </script> 18 </head> 19 <body> 20 <p id="test1">This is the first paragraph.</p> 21 <p id="test2">This is another paragraph.</p> 22 23 <p>Your Name: <input type="text" id="test3"></p> 24 25 <button id="btn1">Get Text</button> 26 <button id="btn2">Get HTML</button> 27 <button id="btn3">Get Value</button> 28 </body> 29 </html> </pre> <p>Changed with the last version</p>
2	<p>Save the file, then open a browser and run the program code by typing <code>localhost/dasarWeb/praktik_jquery/get.html</code></p>
3	<p>Once the program is running, click the buttons in order, then observe the changes.</p>

4

Record your observations and explain the differences between the get text(), html(), and val() methods (Question No. 11)

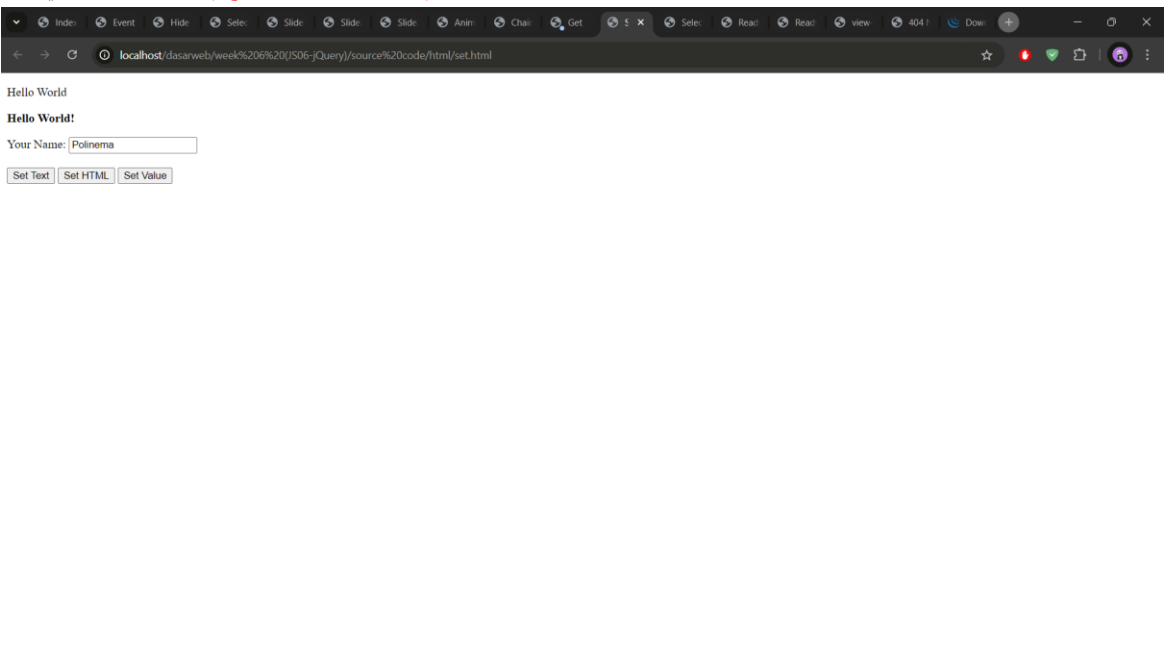


- Get Text: When the “Get Text” button is clicked, the text of the first paragraph (id test1) will be displayed in the alert.
- Get HTML: When the “Get HTML” button is clicked, the HTML of the second paragraph (test2 id) will be displayed in the alert.
- Get Value: When the “Get Value” button is clicked, the value of the text input (test3 id) will be displayed in the alert.

Modifying (SET) Content from HTML Elements

Practicum steps:

Step	Description
1	<p>Create a new HTML file named set.html in the dasarWeb/praktik_jquery directory, then type the following program code:</p> <pre> 1 <!DOCTYPE html> 2 <html> 3 <head> 4 <script src="jquery-3.3.1.js"></script> 5 <script> 6 \$(document).ready(function() { 7 \$("#btn1").click(function() { 8 \$("#test1").text("Hello World"); 9 }); 10 \$("#btn2").click(function() { 11 \$("#test2").html("Hello World!"); 12 }); 13 \$("#btn3").click(function() { 14 \$("#test3").val("Polinema"); </pre> <p>Changed with the last version</p>

	<pre> 15 }); 16 }); 17 </script> 18 </head> 19 <body> 20 <p id="test1">This is the first paragraph.</p> 21 <p id="test2">This is another paragraph.</p> 22 23 <p>Your Name: <input type="text" id="test3"></p> 24 25 <button id="btn1">Set Text</button> 26 <button id="btn2">Set HTML</button> 27 <button id="btn3">Set Value</button> 28 </body> 29 </html> </pre>
2	Save the file, then open a browser and run the program code by typing localhost/dasarWeb/praktik_jquery/set.html
3	Once the program is running, click the buttons in order, then observe the program code as it runs.
4	<p>Record your observations and explain the differences between the set text(), html(), and val() methods (Question No. 12)</p>  <ul style="list-style-type: none"> - Set Text: When the “Set Text” button is clicked, the text in the paragraph with id=“test1” will be changed to “Hello World”. - - Set HTML: When the “Set HTML” button is clicked, the HTML content of the paragraph with id=“test2” will be changed. In this case, the new text will be “Hello World!”, which means “Hello World!” will be displayed in bold. - Set Value: When the “Set Value” button is clicked, the value in the text input with id=“test3” will be changed to “Polinema”.

Adding and Removing Content from HTML Elements

jQuery provides methods for adding and removing HTML elements. Some of the methods that can be used are `append()` and `remove()`. Here are the practicum steps to understand these methods:

Step	Description
------	-------------

1	<p>Create a file named <code>styleTable.css</code> in the <code>dasarWeb/praktik_jquery</code> directory, then type the following code:</p> <pre> 1 form{ 2 margin: 20px 0; 3 } 4 5 form input, button{ 6 padding: 5px; 7 } 8 9 table{ 10 width: 100%; 11 margin-bottom: 20px; 12 border-collapse: collapse; 13 } 14 15 table, th, td{ 16 border: 1px solid #cdcdcd; 17 } 18 19 table th, table td{ 20 padding: 10px; 21 text-align: left; 22 }</pre>
2	<p>Create a new HTML file named <code>addremove.html</code> in the <code>dasarWeb/praktik_jquery</code> directory, then type the following program code:</p> <pre> 1 <!DOCTYPE html> 2 <html> 3 <head> 4 <link rel="stylesheet" type="text/css" href="styleTable.css"/> 5 <script src="jquery-3.3.1.js"></script> 6 <script> 7 \$(document).ready(function() { 8 //menambah baris 9 \$(".add-row").click(function() { 10 var name = \$("#name").val(); 11 var email = \$("#email").val(); 12 var markup = "<tr><td><input type='checkbox' name='record'></td><td>" 13 + name + "</td><td>" + email + "</td></tr>"; 14 \$(".table tbody").append(markup); 15 }); 16 17 //menghapus baris yang di centang 18 \$(".delete-row").click(function() { 19 \$(".table tbody").find('input[name="record"]').each(function() { 20 if(\$(this).is(":checked")){ 21 \$(this).parents("tr").remove(); 22 } 23 }); 24 }); 25 }); 26 </script> 27 </head></pre> <div data-bbox="983 1077 1248 1128" style="border: 1px solid green; padding: 2px; width: fit-content; margin-left: 400px;"> Changed with the last version </div>

```

28     <body>
29         <form>
30             <input type="text" id="name" placeholder="Name">
31             <input type="text" id="email" placeholder="Email Address">
32             <input type="button" class="add-row" value="Add Row">
33         </form>
34         <table>
35             <thead>
36                 <tr>
37                     <th>Select</th>
38                     <th>Name</th>
39                     <th>Email</th>
40                 </tr>
41             </thead>
42             <tbody>
43                 <tr>
44                     <td><input type="checkbox" name="record"></td>
45                     <td>Tony Stark</td>
46                     <td>tonystark@mail.com</td>
47                 </tr>
48             </tbody>
49         </table>
50         <button type="button" class="delete-row">Delete Row</button>
51     </body>
52 </html>

```

3 Save the file, then open a browser and run the program code by typing localhost/dasarWeb/praktik_jquery/addremove.html

4 Once the program is running, do the following:

- Fill out the form with your name and email address
- Click "Add Row"
- Mark the row you added
- Click "delete row"

Then observe the changes

5 Record and explain your observations (Question No. 13)

The first screenshot shows the initial state of the application. At the top, there is a form with two input fields: 'Name' (containing 'Evan') and 'Email' (containing 'dianthafafian@gmail.com'), followed by an 'Add Row' button. Below the form is a table with three columns: 'Select', 'Name', and 'Email'. The table contains one row with a checkbox, 'Tony Stark', and 'tonystark@mail.com'. At the bottom of the table is a 'Delete Row' button.

The second screenshot shows the state after clicking 'Add Row'. The table now has two rows. The first row is 'Tony Stark' with 'tonystark@mail.com'. The second row is 'Evan' with 'dianthafafian@gmail.com'. The 'Delete Row' button remains at the bottom.

The third screenshot shows the state after clicking 'Delete Row'. The table now has only one row: 'Evan' with 'dianthafafian@gmail.com'. The 'Delete Row' button is still present.

	<ul style="list-style-type: none"> - Input Form: There are inputs for Name and Email, Add Row button to add data to the table. - Add Row: Take the values from the Name and Email inputs, create a new row with the checkbox and the data, add the new row to the table. - Delete Row: Search for all checked checkboxes, delete rows associated with checked checkboxes. - Table Structure: The table has columns for Select, Name, and Email. - Use of jQuery: Used to easily manipulate the DOM (Document Object Model), including adding and deleting rows.
--	--

Practical Section 9. JQuery CSS Manipulation

JQuery also has the ability to manipulate CSS. There are several functions, namely:

- `addClass()`, adds one or more classes to the selected element
- `removeClass()`, removes one or more classes into the selected element
- `css()`, set and return the style attribute

Step	Description
1	<p>Create a file named <code>styleCSS.css</code> in the <code>dasarWeb/praktik_jquery</code> directory, then type the following code:</p> <pre> 1 .important { 2 font-weight: bold; 3 font-size: xx-large; 4 } 5 6 .blue { 7 color: blue; 8 }</pre>
2	<p>Create a new HTML file named <code>cssmanipulation.html</code> in the <code>dasarWeb/praktik_jquery</code> directory, then type the following program code:</p> <pre> 1 <!DOCTYPE html> 2 <html> 3 <head> 4 <link rel="stylesheet" type="text/css" href="styleCSS.css"> 5 <script src="jquery-3.3.1.js"></script> 6 <script> 7 \$(document).ready(function() { 8 \$(".btn1").click(function() { 9 \$("h1, h2, p").addClass("blue"); 10 \$("div").addClass("important"); 11 }); 12 \$(".btn2").click(function() { 13 \$("h1, h2, p").removeClass("blue"); 14 }); 15 \$(".btn3").click(function() { 16 \$("h1, h2, p, div").css({"background-color": "yellow", "font-size": "100%"}); 17 }); 18 }); 19 </script> 20 </head> 21 <body> 22 <h1>Heading 1</h1> 23 <h2>Heading 2</h2> 24 <p>This is a paragraph.</p> 25 <p>This is another paragraph.</p> 26 <div>This is some important text!</div>
 27 28 <button class="btn1">Add classes to elements</button> 29 <button class="btn2">Remove classes to elements</button> 30 <button class="btn3">Set classes to elements</button> 31 </body> 32 </html></pre> <p>Changed with the last version</p>
3	<p>Save the file, then open a browser and run the program code by typing <code>localhost/dasarWeb/praktik_jquery/cssmanipulation.html</code></p>
4	<p>Once the program is running, click the buttons in order, then observe the program code as it runs.</p>
5	<p>Record and explain your observations (Question No. 14)</p>


- HTML structure: There are h1, h2, and multiple p (paragraph) elements, a div containing important text, three buttons to perform various actions.
- Adding Classes: Added the CSS class “blue” to the h1, h2, and p elements, added the class “important” to the div element.
- Removing Classes: Removes the “blue” class from the h1, h2, and p elements.
- Setting CSS Styles: Changed the background-color to yellow and font-size to 100% for the h1, h2, p, and div elements.
- Using jQuery: Used to easily manipulate CSS classes and styles on the specified elements.

Practical Section 10. Create a Slide Show

In this practicum, a slideshow is made to display photos. Slideshows are created without using UI plug-ins, but use several jQuery functions including: `appendTo()`, `fadeIn()`, `fadeOut()`, `delay()` using method chaining which allows to pass multiple animation methods into a single element using a single statement.

Step	Description
1	Create a new folder named img inside dasarWeb/praktik_jquery
2	Put three .jpg formatted images, rename them to "gambar1.jpg, gambar2.jpg, and gambar3.jpg", then place them in the dasarWeb/praktik_jquery/img directory
3	Create a new CSS file named styleSlideShow.css then type the following code:

	<pre> 1 #slider { 2 padding:10px 0 10px; 3 position:relative; 4 width:300px; 5 height:300px; 6 } 7 8 #slider img{ 9 width:300px; 10 height:300px; 11 position:absolute; 12 -webkit-border-radius:5px 5px 5px 5px; 13 border-radius:5px; 14 -moz-border-radius:5px 5px 5px 5px; 15 } 16 17 .slidertitle{ 18 width:280px; 19 margin-top:265px; 20 text-align:center; 21 position:absolute; 22 padding:10px; 23 -webkit-border-radius:0px 0px 5px 5px; 24 border-radius:0px 0px 5px 5px; 25 -moz-border-radius:5px 5px 5px 5px; 26 color:#FFF; 27 background-color:rgba(12, 22, 23, 0.50); 28 } </pre>
4	<p>Create a new HTML file named slideshow.html in the dasarWeb/praktik_jquery directory, then type the following program code:</p> <pre> 1 <!DOCTYPE html> 2 <html> 3 <head> 4 <link rel="stylesheet" type="text/css" href="styleSlideShow.css"> 5 <script src='jquery-3.3.1.js'></script> 6 <script> 7 var i=0; 8 \$(document).ready(function () { 9 \$('.slidertitle, #slider img').hide(); 10 showNextImage(); 11 setInterval('showNextImage()', 3000); 12 }); 13 14 function showNextImage() { 15 i++; 16 \$('#sliderImage' + i).appendTo('#slider').fadeIn(1100).delay(1100).fadeOut(1100); 17 \$('#title' + i).appendTo('#slider').fadeIn(1100).delay(1100).fadeOut(1100); 18 if(i==3){ 19 i=0; 20 } 21 }; 22 </script> 23 </head> 24 <body> 25 <div id="slider"> 26 27 <div class="slidertitle" id="title1">Gambar1</div> 28 29 30 <div class="slidertitle" id="title2">Gambar2</div> 31 32 33 <div class="slidertitle" id="title3">Gambar3</div> 34 </div> 35 </body> 36 </html> </pre> <p>Changed with the last version</p>
5	<p>Save the file, then open a browser and run the program code by typing localhost/dasarWeb/praktik_jquery/slideshow.html</p>
6	<p>Observe the program code as it runs.</p>
7	<p>Record and explain your observations (Question No. 15)</p>



- This HTML code creates a slide show using jQuery by hiding the image and title when the document loads. There are three images and their corresponding titles inside a div element with the ID “slider”. When the page is ready, the `showNextImage()` function is called to display the first image, then set an interval to replace the image every 3 seconds. The function increments the value of the `i` variable to keep track of the displayed image and uses the `fadeIn()` and `fadeOut()` effects for a smooth transition between the image and the title. If the value of `i` reaches 3, it will reset to 0 to start the cycle again. Make sure the IDs and classes used are consistent for jQuery to work properly.

Practical Section 11. JQuery UI Plugin

jQuery UI (*user interface*) is the most popular plugin among jQuery programmers. Because to the point that it is made into one manual with the jQuery manual on the official website. jQuery UI was created by Paul Bakaus who worked with Stefan Petre to create sophisticated effects and components of jQuery's complementary libraries, such as accordion and datepicker.

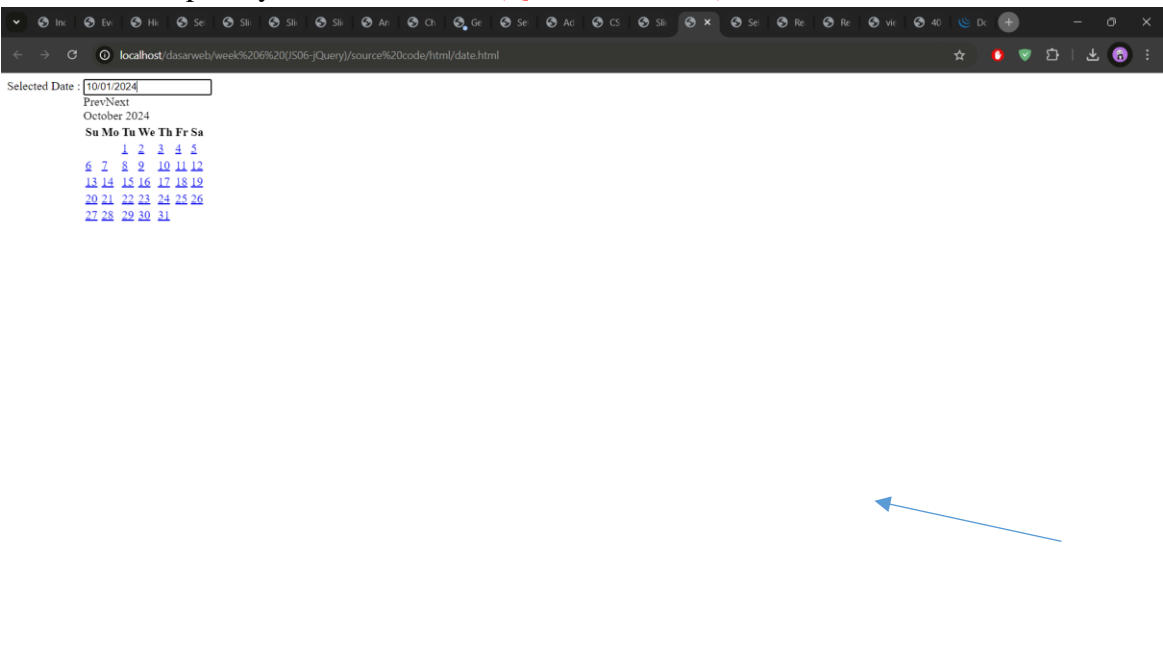
Follow these steps to perform the jQuery UI installation:

Step	Description
1	<p>Download jQuery UI in http://jqueryui.com/download/ choose version (stable)</p> 

2	The downloaded file is still a .zip file. to use it, extract the jQuery file (jquery-ui-1.12.1.zip) in the dasarWeb/praktik_jquery/jquery-ui-1.14.0
3	<p>To connect the jQuery UI Plugin file with HTML, add the <code><script></code> tag with the address jquery-ui-1.14.0/jquery-ui.js. Create a new HTML file and then type in the code like the following example:</p> <pre> 1 <html> 2 <head> 3 <script src="jquery-3.3.1.js"></script> 4 <script src="jquery-ui-1.12.1/jquery-ui.js"></script> 5 <body> 6 </body> 7 </html> </pre> <p>Changed with the last version</p>

Datepicker

Datepicker functions to retrieve dates from the calendar system on the computer, making it easier for us to choose dates, because they are displayed in their entirety with an attractive appearance. To use the datepicker, follow these steps:

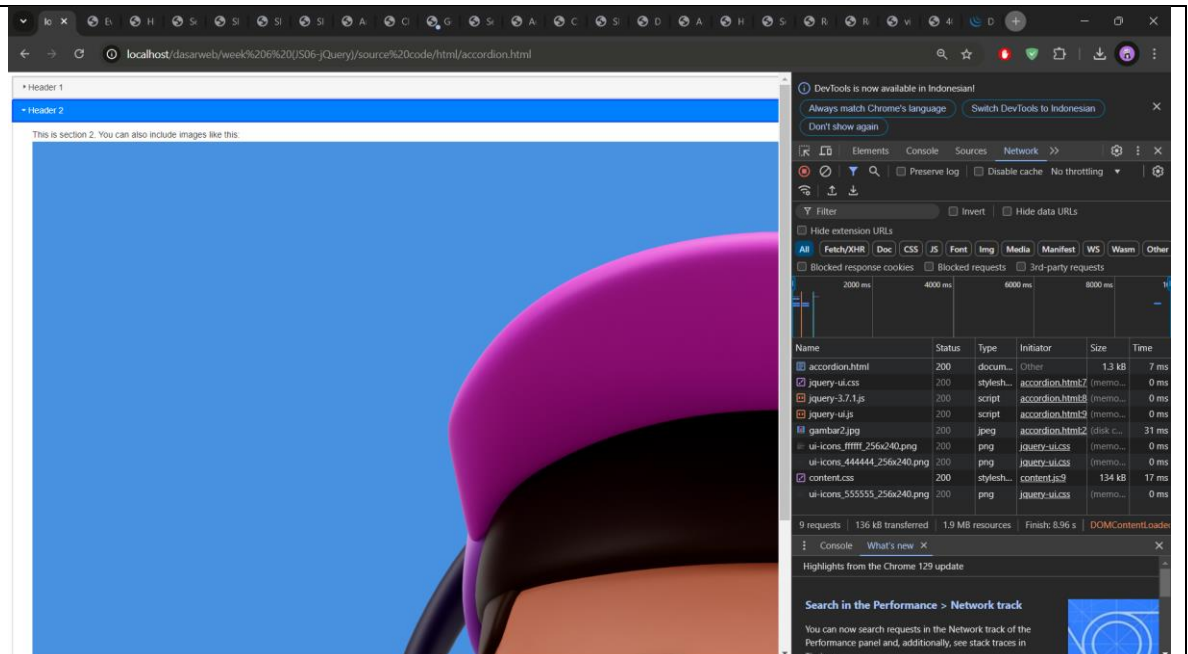
Step	Description
1	<p>Create a new HTML file named <code>date.html</code> in the <code>dasarWeb/praktik_jquery</code> directory, and type the following code:</p> <pre> 1 <!DOCTYPE html> 2 <html> 3 <head> 4 <link rel="stylesheet" href="jquery-ui-1.12.1/jquery-ui.css"> 5 <script src="jquery-3.3.1.js"></script> 6 <script src="jquery-ui-1.12.1/jquery-ui.js"></script> 7 <script> 8 \$(function() { 9 \$("#date_ex").datepicker(); 10 }); 11 </script> 12 </head> 13 <body> 14 <div>Selected Date: <input type="text" id="date_ex"></div> 15 </body> 16 </html> </pre> <p>Changed with the last version</p>
2	Save the file, then open a browser and run the program code by typing <code>localhost/dasarWeb/praktik_jquery/date.html</code>
3	<p>Record and explain your observations (Question No. 15)</p>  <p>- HTML Settings: Uses the <code><input></code> tag to display the selected date.</p>

	<ul style="list-style-type: none"> - Library Inclusions: Loads jquery-ui.js and jquery-3.7.1.js to use jQuery and jQuery UI functionality. - datepicker() function: Initializes a date picker on input with ID date_ex.
--	---

Accordion

Accordion functions to group content in separate panels. Web visitors can open and close the desired panels. Follow these steps:

Step	Description
1	<p>Create a new HTML file named accordion.html in the dasarWeb/praktik_jquery and type the following code:</p> <pre> 1 <!DOCTYPE html> 2 <html> 3 <head> 4 <link rel="stylesheet" href="jquery-ui-1.12.1/jquery-ui.css"> 5 <script src="jquery-3.3.1.js"></script> 6 <script src="jquery-ui-1.12.1/jquery-ui.js"></script> 7 <script> 8 \$(function() { 9 \$("#jQuery_accordion").accordion(); 10 }); 11 </script> 12 </head> 13 <body> 14 <div id="jQuery_accordion"> 15 <h3>header 1</h3> 16 <p> This is section 1. 17 Place your content here in paragraphs or use div elements etc. </p> 18 <h3>header 2</h3> 19 <p> This is section 2. You can also include images like this: 20
 </p> 21 <h3>header 3</h3> 22 <div> 23 <p>This is section 3. Content can include listing as well. 24 25 item 1 26 Item 2 27 Item 3 28 29 </p> 30 </div> 31 </div> 32 </body> 33 </html> </pre> <p>Changed with the last version</p>
2	<p>Save the file, then open a browser and run the program code by typing localhost/dasarWeb/praktik_jquery/accordion.html</p>
3	<p>Record and explain your observations (Question No. 16)</p>



- HTML structure: Using `<h3>` tags for clickable headers and `<p>` or `<div>` for content to be shown or hidden.
- Library Inclusions: Loads `jquery-ui.js` and `jquery-3.7.1.js` to use jQuery and jQuery UI functionality.
- `Accordion()` function: Initializes the accordion function on the element with the ID `jQuery_accordion`, so that each header can function to open and close related content.
- Diverse Content: Each section in the accordion can contain text, images, and lists, providing flexibility in the presentation of information.

Introduction to AJAX

AJAX stands for *Asynchronous Javascript and Xml*. AJAX is not a programming language, but it is a technique for creating better, faster and more interactive web applications. With AJAX, JavaScript can load data from the server into a web browser without reloading the entire page. What AJAX does is use the JavaScript-based XMLHttpRequest object to send and receive Description to and from a web server.

XMLHttpRequest

XMLHttpRequest is a JavaScript object. Here is the code used to create the XMLHttpRequest object:

```
<script language="javascript" type="text/javascript">
    var xmlhttp = new XMLHttpRequest();
</script>
```

To get and send data from/to a database or file on a server using traditional javascript, you need to create an HTML Form. And the user has to click the "submit" button to send/get Description, wait for a response from the server, then a new page in the form of results will be loaded. Since the server always gives a new page every time the user presses the submit button, a simple web application will run slowly and will be less user-friendly.

With Ajax, javascript will communicate directly with the server through the javascript object that is the XMLHttpRequest. With the XMLHttpRequest object, a web page can make a request to, and get a response from, the web server without reloading the entire page. The user will stay on the same page. Even the user

will not know if there is data sent and received from the server, because javascript performs data transactions behind the scenes. Requests are sent *asynchronously*, which means that JavaScript code (and the user) doesn't wait on the server to respond. So that users can continue to enter data and use the application. The following image shows a comparison of a traditional web application and a web application that uses AJAX.

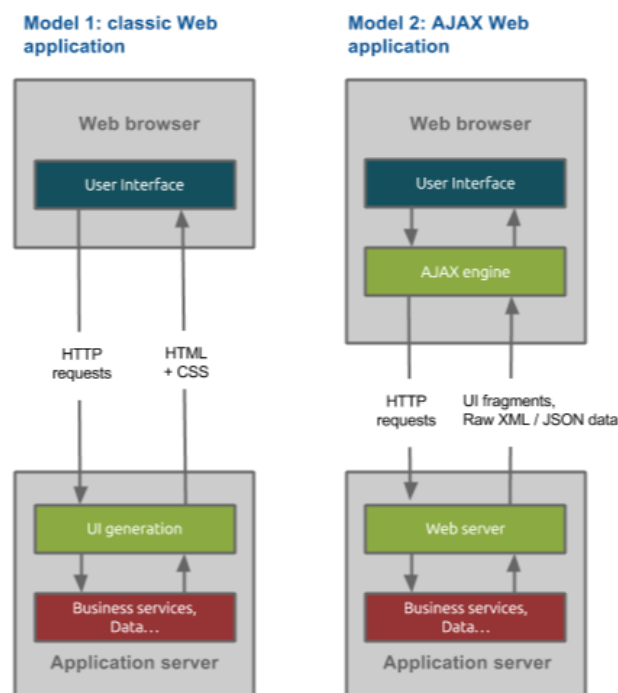


Figure 1. Comparison of traditional and AJAX web applications

Practical Section 12. JQuery AJAX

Different browsers implement AJAX differently. If you adopt the JavaScript way, different code is required for different browsers. For this reason, JQuery provides a solution to simplify the implementation of AJAX so that it can be used across browsers.

JQuery Load()

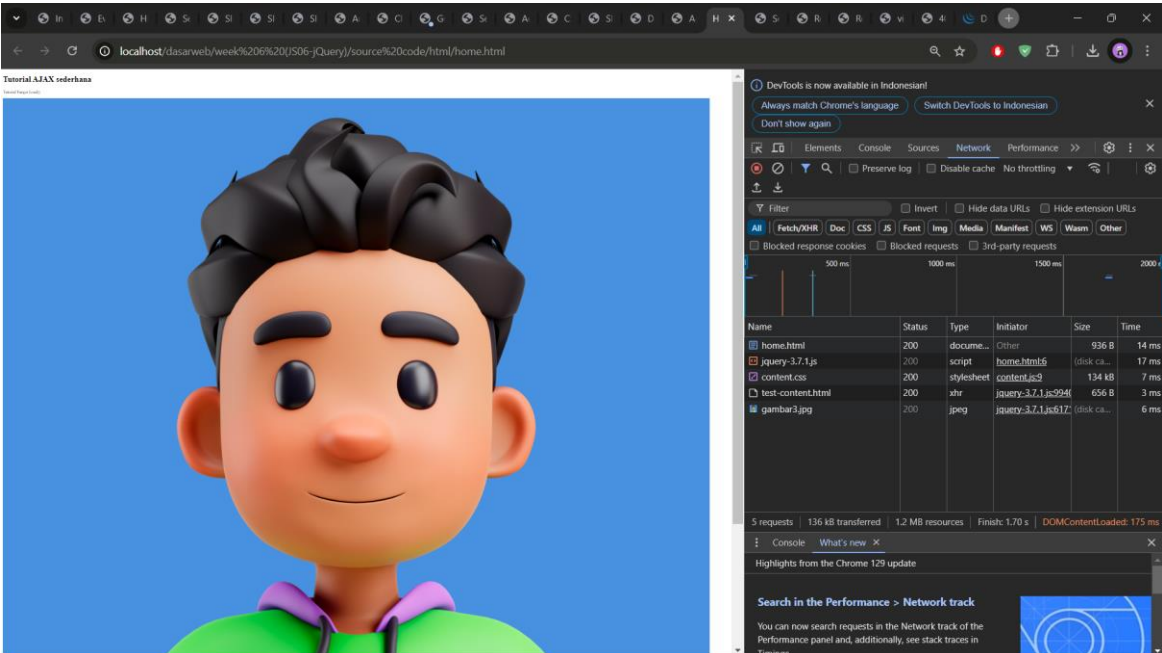
One of the functions of jQuery is `load()`. The `load()` method is used to load data from the server and place the returned HTML to the selected element. The basic syntax of the `load()` method is:

```
$(selector).load(URL, data, complete);
```

- URL, is the address or name of the file on the server to be retrieved
- Data, optional, is a key-value pair that will be sent to the server
- Complete, optional, is a function that is executed when data is retrieved.

To understand the `load()` function, follow these steps:

Step	Description
1	Put a .jpg formatted image, rename it to "gambar.jpg", then place the image in the dasarWeb/praktik_jquery/img
2	Create a new HTML file named <code>test-content.html</code> then type the following code:

	<pre> 1 <!DOCTYPE HTML> 2 <html> 3 <head> 4 </head> 5 <body> 6 <h1>Tutorial AJAX sederhana</h1> 7 <p id="hint">Tutorial Fungsi Load()</p> 8 <p></p> 9 </body> 10 </html> </pre>
4	<p>Create a new HTML file named home.html and then type the following code:</p> <div style="border: 1px solid green; padding: 5px; width: fit-content; margin: 10px auto;"> Changed with the last version </div> <pre> 1 <!DOCTYPE> 2 <html> 3 <head> 4 <script src="jquery-3.3.1.js"></script> 5 <script> 6 \$(document).ready(function(){ 7 \$("button").click(function(){ 8 \$("#box").load("/dasarWeb/praktik_jquery/test-content.html"); 9 }); 10 }; 11 </script> 12 </head> 13 <body> 14 <div id="box"> 15 <h2>Klik tombol dibawah untuk menampilkan konten</h2> 16 </div> 17 <button type="button">Klik Saya!</button> 18 </body> 19 </html> </pre>
5	<p>Save the file, then open a browser and run the program code by typing localhost/dasarWeb/praktik_jquery/home.html</p>
6	<p>Once the program is running, click the "Click Me!" button, then observe the program code run.</p>
7	<p>Record and explain your observations (Question No. 17)</p> <div style="display: flex; align-items: flex-start;">  <div style="margin-left: 20px;"> <ul style="list-style-type: none"> - jQuery Function: Uses <code>\$(document).ready()</code> to ensure that the DOM is fully loaded before running the script. - An event listener is added to the button; when the button is clicked, the <code>\$("#box").load("test-content.html")</code> function is used to load the content from the test-content.html file into the element with the ID box. <p>Use of load(): The jQuery load() method makes it easy to load HTML content dynamically without needing to refresh the page.</p> </div> </div>

Reference:

- 1) Duckett, John. 2014. Javascript & JQuery: Interactive Front-end Web Development. John Wiley & Sons, Inc: Indiana, USA.
- 2) Chaffer, J & Swedberg, K. 2013. Learning jQuery 4th Edition: Better Interaction, Design, and, Web Development with Simple JavaScript Techniques. Birmingham: Packt Publishing Ltd.