



UNIVERSITI MALAYSIA TERENGGANU

UMT

**CSM 3103
FRONT-END DEVELOPMENT
LAB 4**

NAMA: MUHAMMAD HISYAMUDDIN BIN SAZALI

MATRIX ID: S63651

LECTURER: DR. RABIEI BIN MAMAT

Task 1

- a. Get the code from <http://frend.skimtech.my/Lab/Lab4/Task1.html> , and evaluate and test the code.
 - i. What is the id of button and input field
 - Id button:
 - Input field: Change!
 - ii. What happened when you clicked change button and why?
 - Nothing change
- b. Your mission: when the button is clicked, all occurrences of the word Black to be changed to the text in the input field.

- a. Select the change button

```
var button = $('#button_change');
```

- b. Setting a click listener for button

```
$(button).click(function(){  
    //your next code is here  
});
```

- c. Retrieving and storing the input value

```
//select the input color  
var input_color = $('#input_color');  
  
//select the input value  
var input_value = $(input_color).val();
```

- d. Select all appropriate black text by class selector

```
//select all appropriate black text recognise by class  
var element = $('.door_color');
```

- e. Replace the text with the input value

```
//changed the selected text color to input value color  
$(element).html(input_value);
```

- f. Test and evaluate your code. Comment on the new behaviour of your code
- g. Basically, all those id and value in the code can be access directly without using any variables. **Rewrite the code by directly using the jQuery selector**
- h. **Rewrite the code: can refer to task 2 if in doubt**
 - **Instead of input field, change it to dropdown which display available color understood by HTML (use select tag)**
 - **Retrieve the value from the select tag**
 - **Change the color of all appropriate text to selected color**

Source Code:

```
D: > Desktop > Lab Dr Rabiei > Lab 4 > Lab4_Task1.html > html > head > script > ready() callback
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Lab 4 : Task 1</title>
5      <meta charset="utf-8">
6      <script
7          src="https://code.jquery.com/jquery-3.1.1.js"
8          integrity="sha256-16cdPddA6VdVInumRGo6IbivbERE8p7CQR3HzTBuELA="
9          crossorigin="anonymous"></script>
10     <link rel="stylesheet" href=
11         "https://cdnjs.cloudflare.com/ajax/libs/mini.css/2.0.2/mini-default.css">
12     <style>
13         body { margin: 20px; }
14         #color_change { border: 1px solid; }
15         .cow_color { font-weight: bold; }
16     </style>
17
18     <script>
19     $(document).ready(function() {
20         $('#button_change').click(function() {
21             $('#door_color').html($('#input_color').val());
22         });
23
24         //select the input color
25         var input_color = $('#input_color');
26
27         //select the input value
28         var input_value = $(input_color).val();
29     });
30     </script>
31 </head>
32
33 <body>
34     <h2> Paint it <span class="door_color">Black</span> by The Rolling Stones(1966)</h2>
35     <p>I see a red door and I want it painted <span class="door_color">Black</span>
36     </p>
37
38     <p>My Wanted Color is :
39         <input id="input_color" value="Purple"></input>
40         <button id="button_change">
41             Change!
42         </button>
43     </p>
44
45 </body>
46 </html>
```

Output:

Paint it Black by The Rolling Stones(1966)

I see a red door and I want it painted Black

My Wanted Color is :

Paint it Purple by The Rolling Stones(1966)

I see a red door and I want it painted Purple

My Wanted Color is : Change!

Task 2

- a. Get the code from <https://frend.skimtech.my/Lab/Lab4/Task2.html> , and evaluate and test the code

- i. What is id's that exist in the code above?

- b. `id="input_color"`

- i. Open the file inside browser, what have you see in the browser?

Paint it Purple by The Rolling Stones(1966)

I see a red door and I want it painted Purple

My Wanted Color is : Change!

- ii. Click any button, what happened? Why ?
Black into purple

- c. Your mission:

- i. Click on Toggle Colors button: Toggles the color between white and cardinal
 - ii. Click on Toggle Rounded Borders: Toggles the appearance of a border on the boxes
 - iii. Click add a new box: adds one new box to the container

- d. Implements the following to accomplished your mission

- i. Add outlined class to each <div>. Refer to <div> for box2 as an example.
Save and open the file in browser

- i. What changes have you see?

- ii. Add a click function to button_toggle_color, and implementing change color process

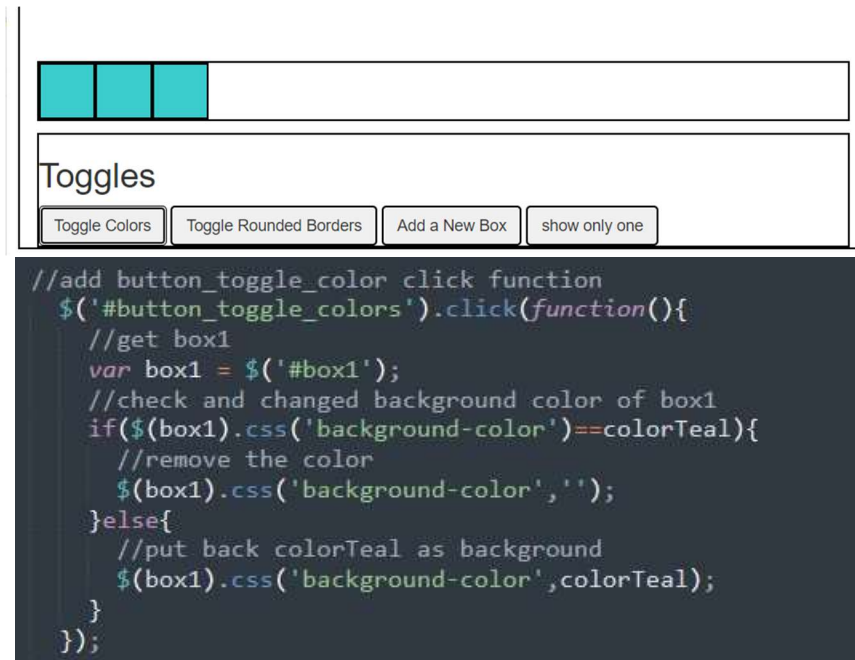
Toggles

Toggle Colors

Toggle Rounded Borders

Add a New Box

show only one



```
//add button_toggle_color click function
$('#button_toggle_colors').click(function(){
  //get box1
  var box1 = $('#box1');
  //check and changed background color of box1
  if($(box1).css('background-color')==colorTeal){
    //remove the color
    $(box1).css('background-color','');
  }else{
    //put back colorTeal as background
    $(box1).css('background-color',colorTeal);
  }
});
```

- iii. Create an event listener for button_toggle_roundedges
- iv. Inside the function add the following code

```
$(".box").each(function(){
  if ($(this).hasClass('round-edge')){
    $(this).removeClass('round-edge');
  }else{
    $(this).addClass('round-edge');
  }
});
```

- v. Based on code in iv, can you modify a code in ii, so it change all box background and returned all to vanilla as well!
- vi. Create an event listener for button_add_box.
- vii. Inside the function put the following code

- i. Create new element using javascript

```
var new_box = document.createElement('div');
```

- ii. Get current number of element with class .box

```
var existingBoxes = $(".box").length;
```

- iii. With the current number of box create new id for new box

```
var nextBoxId = existingBoxes+1;
$(new_box).attr("id","box"+nextBoxId);
```

- iv. Add two classes (box and outlined) to new_box

```
$(new_box).addClass("box");  
$(new_box).addClass("outlined");
```

- v. Finally, attached new box into box container

```
$("#boxes").append(new_box);
```

- viii. Test and evaluate your code
- ix. Modify the code above so that when button clicked, it only show one element which selected randomly .

Source Code:

```
D: > Desktop > Lab Dr Rabiei > Lab 4 > Lab4_Task2.html > html > head > link
1  <!DOCTYPE html>
2  <html>
3  <head>
4    <title>Lab 4: Task 2</title>
5    <meta charset="utf-8">
6    <link rel="stylesheet" href=
7      "https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">
8    <style>
9      #boxes { margin-top: 50px; float: left; width: 100%; }
10     #toggles { float: left; width: 100%; margin-top: 10px; }
11     #info { float: left; margin-top: 5px; }
12     .box { width: 50px; height: 50px; float: left; }
13     .outlined { border: 2px solid black; }
14     .round-edge { border-radius: 15px; }
15     .teal { background-color: teal; }
16   </style>
17   <script
18     src="https://code.jquery.com/jquery-3.1.1.js"
19     integrity="sha256-16cdPddA6VdVInumRGo6IbivbERE8p7CQR3HzTBuELA="
20     crossorigin="anonymous"></script>
21
22   <script>
23
24     var colorTeal = "rgb(57, 204, 204)";
25
26     $(document).ready(function(){
27
28       // add button_toggle_color click function
29       $('#button_toggle_colors').click(function(){
30
31         $('.box').each(function(){
32           if($(this).css('background-color')==colorTeal){
33             $(this).css('background-color','');
34           }else{
35             $(this).css('background-color',colorTeal);
36           }
37         });
38       });
39
40       // add button_toggle_roundedges click function
41       $('#button_toggle_roundedges').click(function(){
42         $('.box').each(function(){
43           if($(this).hasClass('round-edge')){
44             $(this).removeClass('round-edge');
45           }else{
46             $(this).addClass('round-edge');
47           }
48         });
49       });
50
51       $('#button_add_box').click(function(){
52         // create new element
53         var new_box = document.createElement('div');
54         // get the length of the current boxes
55         var existingBoxes = $('.box').length;
56         // assign the id of the new box with the current number of boxes
57         var nextBoxId = existingBoxes+1;
58         $(new_box).attr("id","box"+nextBoxId);
59         // add the two classes used in all boxes
60         $(new_box).addClass("box");
61         $(new_box).addClass("outlined");
62
63         // attaching the new box to the container
64         $('#boxes').append(new_box);
65       });
66
67       $('#button_show_box').click(function(){
68         var boxLength = $('.box').length;
69         var random = Math.floor(Math.random() * boxLength) + 1;
```

```

70     for(var i = 1; i <= boxLength; i++){
71         if(i == random){
72             $("#box"+i).show(1000);
73         }else{
74             $("#box"+i).hide(1000);
75         }
76     }
77 });
78
79 </script>
80 </head>
81 <body>
82     <div class="container outlined">
83
84         <div id="boxes" class="outlined">
85
86             <div id="box1" class="box outlined"></div>
87             <div id="box2" class="box outlined"></div>
88             <div id="box3" class="box outlined"></div>
89         </div>
90
91         <div id="toggles" class="outlined">
92             <h2>Toggles</h2>
93             <button class="btn outlined" id="button_toggle_colors">
94                 >Toggle Colors</button>
95             <button class="btn outlined" id="button_toggle_roundedges">
96                 >Toggle Rounded Borders</button>
97             <button class="btn outlined" id="button_add_box">
98                 >Add a New Box</button>
99             <button class="btn outlined" id="button_show_box">
100                 >Show Only One</button>
101         </div>
102     </div>
103 </body>
104 </html>

```

Output:



Toggles Colors:



Toggle Rounded Borders:

Toggles

Toggle Colors

Toggle Rounded Borders

Add a New Box

show only one

Add a New Box:

Toggles

Toggle Colors

Toggle Rounded Borders

Add a New Box

show only one

Show only one:

Toggles

Toggle Colors

Toggle Rounded Borders

Add a New Box

Show Only One

Task 3

- a. Get the code from <https://friend.skimtech.my/Lab/Lab4/Task2.html> , and evaluate and test the code:

- i. Determine the id's of each element
- ii. Recognise any input element that associated with the form iii.

Your Task are:

1. Add DatePicker
2. Use selectable interaction
3. Use Sortable widget
4. Use the tooltip

- b. Inserting the datepicker into a form

- i. In the document ready function add this code

```
$('#date').datepicker();
```

- i. Can you set the date to limit the selectable date range to only include dates from the previous two weeks to the next two weeks.

- c. Using selectable for enrolment type

- i. Comment radiobutton input
- ii. Add the following code

```
<ol id="selectable">
  <li class="ui-widget-content" title="taking 6.813">Undergraduate</li>
  <li class="ui-widget-content" title="taking 6.831">Graduate</li>
</ol>
```

- iii. Add some css in style section

```

#selectable .ui-selecting {
    background: #FECA40; }

#selectable .ui-selected {
    background: #F39814; color: white; }

#selectable li:before { content: "\2713 "; color: transparent; }

#selectable li.ui-selecting:before { content: "\2713 "; color: black; }

#selectable li.ui-selected:before { content: "\2713 "; color: white; }

#selectable { list-style-type: none; margin: 0; padding: 0;
    width: 150px; cursor: pointer; }

#selectable li {
    margin: 3px; padding: 0.4em;
    font-size: 1.0em; height: 16px; }

```

- iv. And control the behaviour using jQuery selector

```
$("#selectable").selectable();
```

- v. How can we retrieve the value of the selected item?
Apply the “value” property for getting the selected items value

- d. Using sortable for the color input

- i. Comment all input element that related to color selections
- ii. Replace with the following code

```

<ul id="sortable">
    <li class="ui-state-default">#ff0000</li>
    <li class="ui-state-default">#0000ff</li>
    <li class="ui-state-default">#ff00b3</li>
    <li class="ui-state-default">#ded447</li>
    <li class="ui-state-default">#125e18</li>
</ul>

```

- iii. Adding a control to sort the list and disable the selection

```

$("#sortable").sortable();
$("#sortable").disableSelection();

```

- iv. Check your output, now you can drag any color to a new position
- v. Add the following style to your code

```
#sortable {
  list-style-type: none;
  margin: 0;
  padding: 0;
  width: 150px;
}
#sortable li {
  margin: 0 3px 3px 3px;
  padding: 0.4em;
  padding-left: 1.5em;
  font-size: 1.0em;
  height: 12px;
}
```

- vi. What do you think this CSS did? You can reverse the step to see the changes after and before the use of CSS
- vii. Add the following span with class before color code in the in (ii) above

```
<span class="ui-icon ui-icon-arrowthick-2-n-s"></span>
```

e. Adding a Tooltip

- i. Add the following code inside document ready function

```
$(document).tooltip({
  items: '[title], [class]',
  position: { my: "left center", at: "right center" },
  content: function() {
    var element = $(this);
    if (element.is('[title]')){
      return element.attr('title');
    }
    if (element.is('[class]')){
      console.log('class', element);
      if (element.hasClass('ui-state-default')) {
        var text = element.text();
        return '<div class="color_swatch" style="background: ' +
          text + '"></div>'
      }
    }
  }
});
```

- ii. Add the following css

```
.color_swatch{ height:50px; width: 50px; }
```

Source Code:

```
D: > Desktop > Lab Dr Rabiei > Lab 4 > Lab4_Task3.html > html
1  <!DOCTYPE html>
2  <html>
3    <head>
4      <title>Lab 4: Task 3</title>
5      <meta charset="utf-8" />
6      <script
7        src="https://code.jquery.com/jquery-3.1.1.js"
8        integrity="sha256-16cdPddA6VdVInumRGo6IbivbERE8p7CQR3HzTBuELA="
9        crossorigin="anonymous"
10     ></script>
11     <script
12       src="https://code.jquery.com/ui/1.12.1/jquery-ui.js"
13       integrity="sha256-T0Vest3yCU7pafRw9r+settMBX6JkKN06dqBnpQ8d30="
14       crossorigin="anonymous"
15     ></script>
16     <link
17       rel="stylesheet"
18       href="https://cdnjs.cloudflare.com/ajax/libs/normalize/5.0.0/normalize.css"
19     />
20     <link
21       rel="stylesheet"
22       href="https://code.jquery.com/ui/1.12.1/themes/ui-lightness/jquery-ui.css"
23     />
24
25     <style>
26       body {
27         margin: 20px;
28       }
29       #name_input {
30         float: left;
31         margin-bottom: 20px;
32         margin-right: 20px;
33       }
34
35       #date_input {
36         float: left;
37         margin-bottom: 20px;
38       }
39       #year_input {
40         clear: both;
41       }
42       .rank_color {
43         width: 20px;
44         margin-top: 2px;
45       }
46
47       /* Step 2: Your CSS code goes here */
48       #selectable .ui-selecting {
49         background: #fec440;
50       }
51       #selectable .ui-selected {
52         background: #f39814;
53         color: white;
54       }
55       /* i see no use of this rn */
56       #selectable li:before {
57         content: "\2713 ";
58         color: transparent;
59       }
60       #selectable li.ui-selecting:before {
61         content: "\2713 ";
62         color: black;
63       }
64       #selectable li.ui-selected:before {
65         content: "\2713 ";
66         color: white;
67       }
```

```

67     #selectable {
68         list-style-type: none;
69         margin: 0;
70         padding: 0;
71         width: 150px;
72         cursor: pointer;
73     }
74     #selectable li {
75         margin: 3px;
76         padding: 0.4em;
77         font-size: 1em;
78         height: 16px;
79     }
80     /* Step 3: Your CSS code goes here */
81     #sortable {
82         list-style-type: none;
83         margin: 0;
84         padding: 0;
85         width: 150px;
86     }
87     #sortable li {
88         margin: 0 3px 3px 3px;
89         padding: 0.4em;
90         padding-left: 1.5em;
91         font-size: 1em;
92         height: 12px;
93     }
94     /* Step 4: Your CSS code goes here */
95     .color_swatch {
96         height: 50px;
97         width: 50px;
98     }
99 </style>
100

```

```

101 <script>
102     $(document).ready(function () {
103         /* Step 1: Your code goes here */
104         $("#date").datepicker({
105             minDate: "-2w", // Two weeks ago
106             maxDate: "+2w", // Two weeks from now
107         });
108         /* Step 2: Your js code goes here */
109         $("#selectable").selectable();
110         /* Step 3: Your js code goes here */
111         $("#sortable").sortable();
112         $("#sortable").disableSelection();
113         /* Step 4: Your js code goes here */
114         $(document).tooltip({
115             items: "[title], [class]",
116             position: { my: "left center", at: "right center" },
117             content: function () {
118                 var element = $(this);
119                 if (element.is("[title]")) {
120                     return element.attr("title");
121                 }
122                 if (element.is("[class]")) {
123                     console.log("class", element);
124                     if (element.hasClass("ui-state-default")) {
125                         var text = element.text();
126                         return (
127                             '<div class= "color_swatch" style="background:' +
128                             text +
129                             '><div>'
130                         );
131                     }
132                 }
133             },
134         });
135     });
136

```

```

135     // retrieve selectable
136     $("#selectable").selectable({
137         selected: function (event, ui) {
138             // Retrieve the selected elements
139             var selectedItems = $(ui.selected);
140
141             // Iterate over the selected elements
142             selectedItems.each(function () {
143                 var selectedValue = $(this).text();
144                 console.log(selectedValue);
145             });
146         },
147     });
148 });
149 </script>
150 </head>
151 <body>
152     <h2>jQuery UI-Survey</h2>
153     <h3>General Information</h3>
154     <div id="name_input">
155         <label for="name">Name:</label>
156         <input type="text" id="name" />
157     </div>
158     <div id="date_input">
159         <label for="date">Date:</label>
160         <input type="text" id="date" />
161     </div>
162     <div id="year_input">
163         <h3>Are you enrolled as an undergraduate or a graduate?</h3>
164
165         <!-- Step 2: Your HTML here -->
166         <ol id="selectable">
167             <li class="ui-widget-content" title="taking 6.813">Undergraduate</li>
168             <li class="ui-widget-content" title="taking 6.831">Graduate</li>
169         </ol>
170     </div>
171
172     <div id="color_input">
173         <h3>Rank the colors from your most favorite to your least favorite:</h3>
174
175         <!-- Step 3: Your HTML here -->
176         <ul id="sortable">
177             <li class="ui-state-default"><span class="ui-icon ui-icon-arrowthick-2-n-s"></span> #ff0000</li>
178             <li class="ui-state-default"><span class="ui-icon ui-icon-arrowthick-2-n-s"></span> #0000ff</li>
179             <li class="ui-state-default"><span class="ui-icon ui-icon-arrowthick-2-n-s"></span> #ff00b3</li>
180             <li class="ui-state-default"><span class="ui-icon ui-icon-arrowthick-2-n-s"></span> #ded447</li>
181             <li class="ui-state-default"><span class="ui-icon ui-icon-arrowthick-2-n-s"></span> #125e18</li>
182         </ul>
183     </div>
184 </body>
185 </html>

```


Output:

jQuery UI-Survey

General Information

Name: Date:

Are you enrolled as an undergraduate or a graduate?

Rank the colors from your most favorite to your least favorite:

⤴ #ff0000

⤴ #0000ff

⤴ #ff00b3

⤴ #ded447

⤴ #125e18

jQuery UI-Survey

General Information

Name: Date:

Are you enrolled as an undergraduate or a graduate?

✓

Rank the colors from your most favorite to your least favorite:

⤴ #0000ff

⤴ #ff0000

⤴ #ff00b3

⤴ #ded447

⤴ #125e18

Task 4

- a. Get the code from <http://frend.skimtech.my/Lab/Lab4/Task4.html> , and evaluate and test the code.
- b. Getting the context of the canvas

- a. Add the following code:

```
var canvas = document.getElementById("myCanvas");  
var ctx = canvas.getContext('2d');
```

- c. Drawing a triangle to canvas

- a. Setup the fillStyle, strokeStyle and lineWidth.

```
ctx.fillStyle = '#f00';  
ctx.strokeStyle = '#000';  
ctx.lineWidth = 3;
```

- b. Describe the purpose of each method in (a)
- c. Put these codes into an appropriate function:

```
ctx.beginPath();  
ctx.moveTo(60, 240);  
ctx.lineTo(240, 240);  
ctx.lineTo(150, 60);  
ctx.closePath();  
ctx.fill();  
ctx.stroke();
```

- d. Test you code and evaluate the output
- e. Rearrange the position of coordinate and test your code.
- f. What is the use of moveTo methods above?
 - Begin a new sub-path at the point specified by the given (x,y) coordinates.
- d. a new rotate triangle function

- a. Set the new position of the new triangle at the middle of previous triangle

```
ctx.translate(canvas.width / 2, canvas.height / 2);  
ctx.rotate(Math.PI / 4);  
ctx.beginPath();
```

- b. Start drawing a new triangle using a new coordinate

```
ctx.moveTo(-90, 90);  
ctx.lineTo(90, 90);  
ctx.lineTo(0, -90);  
  
ctx.closePath();  
ctx.fill();  
ctx.stroke();
```

- c. Test and evaluate your result.

e. Clear the canvas

a. Put this code to clear the canvas

```
ctx.clearRect(0, 0, canvas.width, canvas.height);
```

b. Can you write more better clear canvas , to clear all canvas

- Using the clearRect() method
- Setting canvas.width and canvas.height properties
- Using fillStyle property.

Source Code:

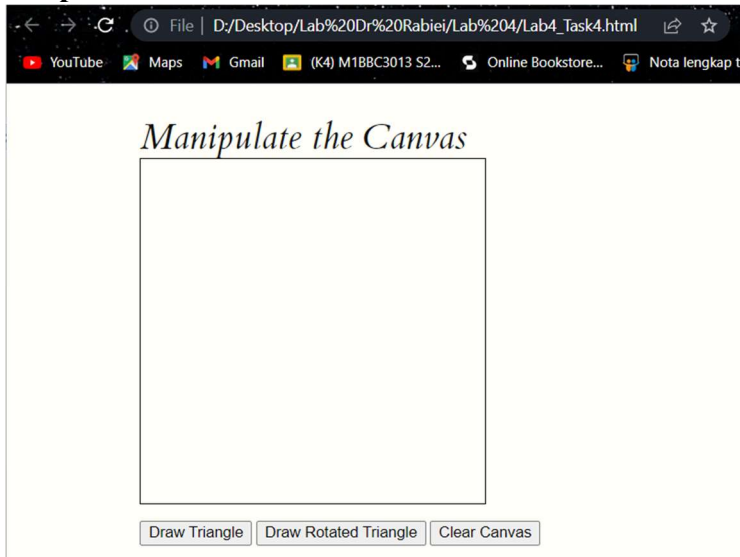
```
D: > Desktop > Lab Dr Rabiei > Lab 4 > Lab4_Task4.html > html
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <title>Lab 4 : Task 4</title>
5  <meta charset="utf-8" />
6  <script
7  src="https://code.jquery.com/jquery-3.1.1.js"
8  integrity="sha256-16cdPddA6VdVInumRGo6IbivbERE8p7CQR3HzTBuELA="
9  crossorigin="anonymous"
10 ></script>
11 <link
12 rel="stylesheet"
13 href="https://cdnjs.cloudflare.com/ajax/libs/tufte-css/1.1/tufte.css"
14 />
15 <style>
16 body {
17   margin: 20px;
18 }
19 #container {
20   display: block;
21 }
22 #draw_buttons {
23   float: left;
24   width: 100%;
25   margin-top: 10px;
26 }
27 </style>
28
29 <script>
30 $(document).ready(function () {
31   /* Step 1: Your code goes here */
32   var canvas = document.getElementById("myCanvas");
33   var ctx = canvas.getContext("2d");
34   ctx.fillStyle = "#f00";
35   ctx.strokeStyle = "#000";
```

```

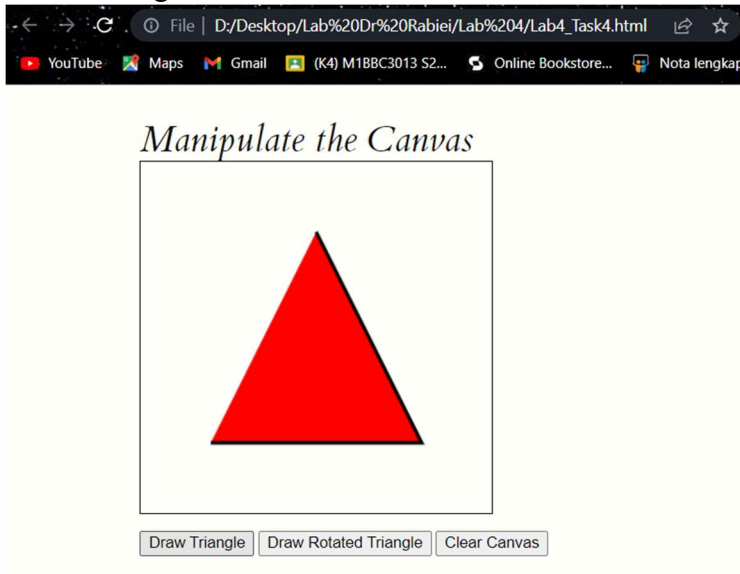
36     ctxt.lineWidth = 3;
37     $("#button_draw_triangle").click(function () {
38         /* Your code goes here for Step 2 */
39         ctxt.fillStyle = "#f00";
40         ctxt.strokeStyle = "#000";
41         ctxt.lineWidth = 3;
42         ctxt.beginPath();
43         ctxt.moveTo(60, 240);
44         ctxt.lineTo(240, 240);
45         ctxt.lineTo(150, 60);
46         ctxt.fill();
47         ctxt.stroke();
48     });
49
50     $("#button_draw_rotated_triangle").click(function () {
51         /* Your code goes here for Step 3 */
52         ctxt.fillStyle = "#f00";
53         ctxt.strokeStyle = "#000";
54         ctxt.lineWidth = 3;
55         ctxt.translate(canvas.width / 2, canvas.height / 2);
56         ctxt.rotate(Math.PI / 4);
57         ctxt.beginPath();
58         ctxt.moveTo(-90, 90);
59         ctxt.lineTo(90, 90);
60         ctxt.lineTo(0, -90);
61
62         ctxt.closePath();
63         ctxt.fill();
64         ctxt.stroke();
65     });
66
67     // $("#button_clear_canvas").click(function () {
68     //     /* Your code goes here for Step 4 */
69     //     ctxt.clearRect(0,0, canvas.width, canvas.height);
70     // });
71     /* Clear the entire canvas */
72     $("#button_clear_canvas").click(function () {
73         canvas.width = canvas.width;
74         canvas.height = canvas.height;
75     });
76 });
77 </script>
78 </head>
79
80 <body>
81     <h2>Manipulate the Canvas</h2>
82     <canvas
83         id="myCanvas"
84         width="300"
85         height="300"
86         style="border: 1px solid □ #000000"
87     ></canvas>
88
89     <div id="draw_buttons">
90         <button id="button_draw_triangle">Draw Triangle</button>
91         <button id="button_draw_rotated_triangle">Draw Rotated Triangle</button>
92         <button id="button_clear_canvas">Clear Canvas</button>
93     </div>
94 </body>
95 </html>

```

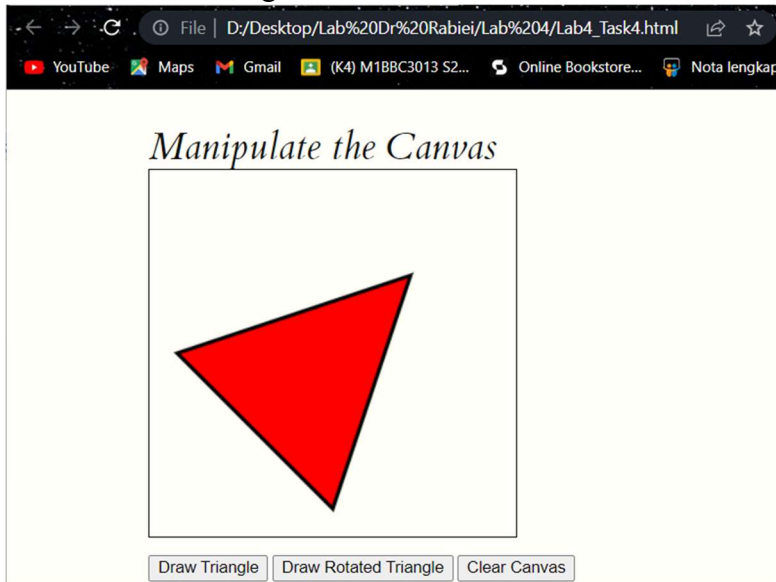
Output:



Draw Triangle:



Draw Rotated Triangle:



Github link:

<https://github.com/FathiahIzzati/Fathiah-CSM3103>