



**UNIVERSITI MALAYSIA TERENGGANU**

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**CSM3103 FRONT-END PROGRAMMING (K1)**

**BACHELOR OF COMPUTER SCIENCE (MOBILE COMPUTING) WITH HONORS**

**LAB 5 - JAVA SCRIPT**

**SEMESTER 4 2023/2024**

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**Prepared for:**

**DR. RABIEIL B MAMAT**

**Prepared by:**

**NUR ARINA BINTI ABDUL MALEK (S65361)**

## Lab 5

### Task 1

- a. Get the code from <https://frend.odaje.biz/lab5/task1.html>, and evaluate and test the code.
  - i. What is the id of button and input field  
= id of button is “button\_change” while id of input field is “input\_color”
  - ii. What happened when you clicked change button and why?  
= no, because there is no java script to make it makes changes in color.
- 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 inpiut value color  
$(element).html(input_value);
```

- f. Test and evaluate your code. Comment on the new behaviour of your code

```

1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4  <meta charset="UTF-8">
5  <title>Lab 5 : Task 1</title>
6  <script src="https://code.jquery.com/jquery-3.1.1.min.js"></script>
7  <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/min.cs
8  <style>
9  |   body { margin: 20px; }
10 |   .door_color { font-weight: bold; }
11 </style>
12 <script>
13 $(document).ready(function() {
14 |   $('#button_change').click(function(){
15 |   |   var input_color = $('#input_color').val();
16 |   |   $('#.door_color').css('color', input_color);
17 |   |   });
18 |   });
19 </script>
20 </head>
21 <body>
22 |   <h2>Paint it <span class="door_color">Black</span> by The Rolling Stones
23 |   <p>I see a red door and I want it painted <span class="door_color">Black
24 |   <p>My Wanted Color is:
25 |   |   <input id="input_color" value="Purple">
26 |   |   <button id="button_change">Change!</button>
27 |   </p>
28 </body>
29 </html>
30

```

## Paint it **Black** by The Rolling Stones(1966)

I see a red door and I want it painted **Black**

My Wanted Color is:

- 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
  - i. **Instead of input field, change it to dropdown which display available color understood by HTML (use select tag)**
  - ii. **Retrieve the value from the select tag**

### iii.

### Change the color of all appropriate text to selected color

#### Task 2

- a. Get the code from <https://frend.odaje.biz/lab5/task2.html>, and evaluate and test the code
  - i. What id's that exist in the code above?  
= boxes and toggles
  - ii. Open the file inside browser, what have you see in the browser?  
= 3 boxes and toggles
  - iii. Click any button, what happened? Why  
= nothing happen
- b. 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
- c. 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

```
//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 .



## Toggles

Toggle Colors

Toggle Borders

Add a New Box

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4   <meta charset="UTF-8">
5   <title>Lab 4: Task 2</title>
6
7   <!-- Include Bootstrap CSS -->
8   <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootst
9
10  <!-- Internal Styles -->
11  <style>
12    #boxes { margin-top: 50px; float: left; width: 100%; }
13    #toggles { float: left; width: 100%; margin-top: 10px; }
14    .box { width: 50px; height: 50px; float: left; }
15    .outlined { border: 2px solid black; }
16    .round-edge { border-radius: 15px; }
17    .cardinal { background-color: #008080; } /* Cardinal color */
18  </style>
19
20  <!-- Include jQuery Library -->
21  <script src="https://code.jquery.com/jquery-3.5.1.min.js"></script>
22
23  <!-- JavaScript Code -->
24  <script>
25    $(document).ready(function(){
26      // Toggle Colors Button
27      $('#button_toggle_colors').click(function(){
28        $('.box').each(function(){
29          if ($(this).hasClass('cardinal')) {
30            $(this).removeClass('cardinal');
31          } else {
32            $(this).addClass('cardinal');
33          }
34        });
35      });
36    });
```

```

37 // Toggle Borders Button
38 ✓ $( '#button_toggle_roundedges' ).click(function(){
39 |     $(".box").toggleClass("outlined");
40 | });
41
42 // Add a New Box Button
43 ✓ $( '#button_add_box' ).click(function(){
44 |     var new_box = document.createElement('div');
45 |     var existingBoxes = $(".box").length;
46 |     var nextBoxId = existingBoxes + 1;
47 |     $(new_box).attr("id", "box" + nextBoxId);
48 |     $(new_box).addClass("box outlined");
49 |     $("#boxes").append(new_box);
50 | });
51 | });
52 </script>
53 </head>
54 ✓ <body>
55 ✓ <div class="container">
56 ✓ <div id="boxes">
57 |     <div id="box1" class="box outlined"></div>
58 |     <div id="box2" class="box outlined"></div>
59 |     <div id="box3" class="box outlined"></div>
60 | </div>
61 ✓ <div id="toggles">
62 |     <h2>Toggles</h2>
63 |     <button class="btn" id="button_toggle_colors">Toggle Colors</b>
64 |     <button class="btn" id="button_toggle_roundedges">Toggle Border
65 |     <button class="btn" id="button_add_box">Add a New Box</button>
66 | </div>
67 </div>

```



### Task 3

- a. Get the code <https://frend.odaje.biz/lab5/task3.html>, and evaluate and test the code:

- i. Determine the id's of each element  
= name\_input  
= date\_input  
= year\_input  
= color\_input
- 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?

- 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 <li> in (ii) above

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

e. Adding a Tooltip

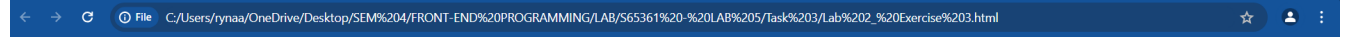
- i. Add the following code inside document ready function

```
$(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; }
```

## My work



### jQuery UI-Survey

#### General Information

Name:  Date:

Are you enrolled as an undergraduate or a graduate?

☒ Undergraduate  
☐ Graduate

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

<input type="text" value="#ff0000"/>
<input type="text" value="#0000ff"/>
<input type="text" value="#ff00b3"/>
<input type="text" value="#ded447"/>
<input type="text" value="#125618"/>

```
File Edit Selection View Go Run Terminal Help
C:\Users\rynaa\OneDrive\Desktop\SEM 4\Front-End Programming\Lab\S65361-LAB 5\Task 3> Lab 2_Exercise 3.html > ...
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <meta charset="UTF-8">
5 <title>Lab 2: Exercise 3</title>
6
7 <script src="https://code.jquery.com/jquery-3.1.1.js" integrity="sha256-16cdPddA6VdVInumRGo6IbivbERE8p7CQR3HzTBuELA=" crossorigin="anonymous"></script>
8 <script src="https://code.jquery.com/ui/1.12.1/jquery-ui.js" integrity="sha256-10Vest3yCU7pafRw9r+settmBX6JkKM06dqBnpQ8d30=" crossorigin="anonymous"></script>
9 <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/normalize/8.0.1/normalize.css">
10 <link rel="stylesheet" href="https://code.jquery.com/ui/1.12.1/themes/base/jquery-ui.css">
11
12 <style>
13   body {
14     margin: 20px;
15   }
16   #name_input {
17     float: left;
18     margin-bottom: 20px;
19     margin-right: 20px;
20   }
21   #date_input {
22     float: left;
23     margin-bottom: 20px;
24   }
25   #year_input {
26     clear: both;
27   }
28   .rank_color {
29     width: 20px;
30     margin-top: 2px;
31   }
32
33   /* Step 2: Your CSS code goes here */
34   #selectable .ui-selecting {
35     background-color: #FECA40;
36
37   #selectable .ui-selected {
38     background-color: #F39814; color: white;
39   }
40
41   #selectable li:before { content: "\2713"; color: transparent; }
42   #selectable li.ui-selecting:before { content: "\2713"; color: black; }
43   #selectable li.ui-selected:before { content: "\2713"; color: white; }
44
45   #selectable {
46     list-style-type: none;
47     margin: 0;
48     padding: 0;
49     width: 150px;
50     cursor: pointer;
51   }
52
53   #selectable li {
54     margin: 3px;
55     padding: 0.4em;
56     font-size: 1.0em;
57     height: 16px;
58   }
59
60   /* Step 3: Your CSS code goes here */
61   #sortable {
62     list-style-type: none;
63     margin: 0;
64     padding: 0;
65     width: 150px;
66   }
67
68
```

```

69 | #sortable li {
70 |     margin: 0 3px 3px 3px;
71 |     padding: 0.4em;
72 |     padding-left: 1.5em;
73 |     font-size: 1.0em;
74 |     height: 12px;
75 | }
76 |
77 | /* Step 4: Your CSS code goes here */
78 | .color_swatch {
79 |     height: 50px;
80 |     width: 50px;
81 | }
82 | </style>
83 |
84 | <script>
85 | $(document).ready(function() {
86 |
87 |     // Step 1: DatePicker with limited date range
88 |     $('#date').datepicker({
89 |         minDate: -14, // 14 days in the past
90 |         maxDate: 14 // 14 days in the future
91 |     });
92 |
93 |     // Step 2: Selectable interaction
94 |     $('#selectable').selectable();
95 |
96 |     // Step 3: Sortable widget
97 |     $('#sortable').sortable();
98 |     $('#sortable').disableSelection();
99 |
100 |     // Step 4: Tooltip
101 |     $(document).tooltip({
102 |         items: '[title], [class]',
103 |         position: { my: "left center", at: "right center" },
104 |         content: function() {
105 |             var element = $(this);
106 |             if (element.is('[title]')) {
107 |                 return element.attr('title');
108 |             }
109 |             if (element.is('[class]')) {
110 |                 if (element.hasClass('ui-state-default')) {
111 |                     var text = element.text();
112 |                     return '<div class="color_swatch" style="background: ' + text + ' "></div>';
113 |                 }
114 |             }
115 |         }
116 |     });
117 |
118 | });
119 | </script>
120 | </head>
121 | <body>
122 | <h2>jQuery UI-Survey</h2>
123 | <h3>General Information</h3>
124 | <div id="name_input">
125 |     <label for="name">Name:</label>
126 |     <input type="text" id="name">
127 | </div>
128 | <div id="date_input">
129 |     <label for="date">Date:</label>
130 |     <input type="text" id="date">
131 | </div>
132 | <div id="year_input">
133 |     <h3>Are you enrolled as an undergraduate or a graduate?</h3>
134 |
135 |     <!-- Comment out this part of the form after Step 2 -->
136 |     <!--
137 |     <input type="radio" name="enroll_year" id="ugrad" value="ugrad">
138 |     <label for="ugrad">Undergraduate (taking 6.813)</label><br>
139 |     <input type="radio" name="enroll_year" id="grad" value="grad">
140 |     <label for="grad">Graduate (taking 6.831)</label>
141 |     -->
142 |
143 |     <!-- Step 2: Your HTML here -->
144 |     <ol id="selectable">
145 |         <li class="ui-widget-content" title="taking 6.813">Undergraduate</li>
146 |         <li class="ui-widget-content" title="taking 6.831">Graduate</li>
147 |     </ol>
148 | </div>
149 |
150 | <div id="color_input">
151 |     <!-- Comment out instruction when you finish step 3 -->
152 |     <!--
153 |     <h3>Rank the colors listed from your most favorite (1) to your least favorite (5). Be sure to only use each ranking once.</h3>
154 |     <input type="text" class="rank_color" id="red">
155 |     <label for="red">#ff0000</label><br>
156 |     <input type="text" class="rank_color" id="blue">
157 |     <label for="blue">#0000ff</label><br>
158 |     <input type="text" class="rank_color" id="hot_pink">
159 |     <label for="hot_pink">#ff00b3</label><br>
160 |     <input type="text" class="rank_color" id="mustard">
161 |     <label for="mustard">#ded447</label><br>
162 |     <input type="text" class="rank_color" id="dark_green">
163 |     <input type="text" class="rank_color" id="hot_pink">
164 |     <label for="hot_pink">#ff00b3</label><br>
165 |     <input type="text" class="rank_color" id="mustard">
166 |     <label for="mustard">#ded447</label><br>
167 |     <input type="text" class="rank_color" id="dark_green">
168 |     <label for="dark_green">#125e18</label><br>
169 |     -->
170 |
171 |     <!-- Step 3: Your HTML here -->
172 |     <h3>Rank the colors from your most favorite to your least favorite:</h3>
173 |     <ol id="sortable">
174 |         <li class="ui-state-default"><span class="ui-icon ui-icon-arrowthick-2-n-s"></span>#ff0000</li>
175 |         <li class="ui-state-default"><span class="ui-icon ui-icon-arrowthick-2-n-s"></span>#0000ff</li>
176 |         <li class="ui-state-default"><span class="ui-icon ui-icon-arrowthick-2-n-s"></span>#ff00b3</li>
177 |         <li class="ui-state-default"><span class="ui-icon ui-icon-arrowthick-2-n-s"></span>#ded447</li>
178 |         <li class="ui-state-default"><span class="ui-icon ui-icon-arrowthick-2-n-s"></span>#125e18</li>

```

#### Task 4

- a. Get the code from <https://frend.odaje.biz/lab5/task3.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');
```

- i. What is the meaning of context in this case?

- 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 your code and evaluate the output
- e. Rearrange the position of coordinate and test your code.
- f. What is the use of moveTo methods above?

- 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.
- d. You can press the rotate many times, and can have different triangle at different location, why it's happened?

- 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

## My work

### General Information

Name:  Date:

Are you enrolled as an undergraduate or a graduate?

☐ Undergraduate

☐ Graduate

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

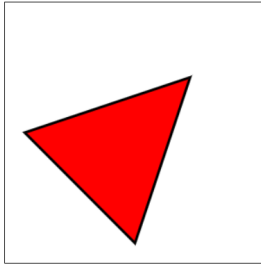
☐ #f00000

☐ #0000ff

☐ #ff00b3

☐ #ded447

☐ #125e18



```
158 <script>
159 $(document).ready(function() {
160     // Drawing on Canvas
161     var canvas = document.getElementById("myCanvas");
162     var ctx = canvas.getContext('2d');
163
164     ctx.fillStyle = '#f00';
165     ctx.strokeStyle = '#000';
166     ctx.lineWidth = 3;
167
168     ctx.beginPath();
169     ctx.moveTo(60, 240);
170     ctx.lineTo(240, 240);
171     ctx.lineTo(150, 60);
172     ctx.closePath();
173     ctx.fill();
174     ctx.stroke();
175
176     ctx.clearRect(0, 0, canvas.width, canvas.height);
177
178     ctx.translate(canvas.width / 2, canvas.height / 2);
179     ctx.rotate(Math.PI / 4);
180     ctx.beginPath();
181     ctx.moveTo(-90, 90);
182     ctx.lineTo(90, 90);
183     ctx.lineTo(0, -90);
184     ctx.closePath();
185     ctx.fill();
186     ctx.stroke();
```