

## 9.9 Plugins

### Introduction to jQuery plugins

jQuery's plugin architecture allows developers to add additional functionality like new selectors and user interface (UI) widgets. The [jQuery Plugin Registry](#) organizes plugins into categories and provides links to download and use the plugins. An [active forum](#) exists for developers seeking help creating or using plugins.

#### PARTICIPATION ACTIVITY

#### 9.9.1: Popular jQuery plugins.



Match the jQuery plugin with the plugin's description.

If unable to drag and drop, refresh the page.

Cycle2	<u>Creating slideshows with various transition effects.</u> Cycle2 requires little-to-no JavaScript coding.	Correct
menu-aim	<u>Producing dropdown menus.</u> menu-aim creates dropdown menus that intelligently differentiate between hovering over a dropdown item or a submenu.	Correct
Tooltipster	<u>Displaying tooltips.</u> Tooltipster displays modern looking tooltips that can be altered with CSS.	Correct
animatedModal.js	<u>Displaying fullscreen modal dialog boxes.</u> animatedModal.js uses CSS3 transitions to animate the dialog boxes.	Correct
	<u>Allows users to select a color.</u>	Correct

**Tiny Colorpicker**

Tiny Colorpicker displays a small widget for selecting colors. Developers can customize the widget's appearance.

**payform****Creating credit card forms and validating inputs.**

payform is helpful for e-commerce websites.

**Correct****Reset**[Feedback?](#)

## Cycle2 plugin

The [Cycle2 plugin](#) is a popular plugin for showing slideshows. Like many plugins, Cycle2 requires little JavaScript coding. The plugin uses special HTML attributes prefixed with "data-cycle" to apply various plugin settings. A [webpage](#) documents how to use Cycle2. Like all jQuery plugins, the plugin library must be downloaded to the browser along with the jQuery library.

**PARTICIPATION  
ACTIVITY****9.9.2: Cycle2 plugin.**

The Cycle2 library is used in the rendered webpage below to cycle through three images. The `<div>` uses "data-cycle" attributes to make the images scroll horizontally in 200 milliseconds with a delay of 2 seconds before the next image is displayed. The JavaScript code uses the `cycle()` method to pause or resume the slideshow when the slideshow is clicked.

Try to make the following modifications:

1. Replace the "scrollHorz" transition with "fadeout", and change the delay between images to 3 seconds.
2. Add Next and Previous buttons that appear below the slideshow.
3. Add the necessary JavaScript so pressing the Next and Previous buttons stops the slide show by calling `cycle("stop")`. Then each button should display the next or previous images by calling `cycle("next")` or `cycle("prev")`.

**HTML****JavaScript**

```
1 let $slideshow = $(".cycle-slideshow");
2
3 $slideshow.click(function() {
4     if ($slideshow.is(".cycle-paused"))
5         $slideshow.cycle("resume");
6     else
7         $slideshow.cycle("pause");
8 });
9
```

[Render webpage](#)[Reset code](#)

### Your webpage



▼ View solution

 Explain

--- START FILE: HTML ---

```
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquer
</script>
<script src="https://malsup.github.io/jquery.cycle2.js">
</script>

<div class="cycle-slideshow"
```

```
data-cycle-fx="fadeout"
data-cycle-speed="200"
data-cycle-timeout="3000">



<div>
  <button id="previous-btn">Previous</button>
  <button id="next-btn">Next</button>
</div>

--- END FILE: HTML ---

--- START FILE: JavaScript ---

let $slideshow = $(".cycle-slideshow");

$slideshow.click(function() {
  if ($slideshow.is(".cycle-paused"))
    $slideshow.cycle("resume");
  else
    $slideshow.cycle("pause");
});

$("#previous-btn").click(function() {
  $slideshow.cycle("stop");
  $slideshow.cycle("prev");
});

$("#next-btn").click(function() {
  $slideshow.cycle("stop");
  $slideshow.cycle("next");
});

--- END FILE: JavaScript ---
```

## jQuery UI plugin

jQuery UI is a popular collection of jQuery plugins that are grouped into four categories:

1. Interactions - support for dragging, dropping, sorting, selecting, and resizing
2. Widgets - buttons, accordions, date pickers, dialog boxes, sliders, etc.
3. Effects - color animation, easing functions, and animation effects
4. Utilities - position elements on the screen, widget factory

Developers can obtain the jQuery UI library from [jqueryui.com](https://jqueryui.com) and place the library on their web server, or developers can use a CDN, such as [Google Hosted Libraries](https://code.jquery.com/jquery-ui/), to download the library to the browser. The library works with an external stylesheet, which defines numerous classes needed by the library. The jQuery UI stylesheet must be downloaded to the browser along with the jQuery UI library.

### PARTICIPATION ACTIVITY

#### 9.9.3: jQuery UI interactions.



The rendered webpage below demonstrates two jQuery UI interactions:

1. Resizing: Drag the right or bottom edges of the rectangle to resize the rectangle. The `resizable()` method enables the resizing of the `<div>` with ID "resizable".
2. Selecting: Click on each of the bulleted superheroes to select a superhero. Dragging while selecting a superhero, or holding down the Control key while selecting superheroes, will enable multiple heroes to be selected. The `selectable()` method enables selecting items in the `<ul>` with ID "selectable".

Add the following code to display the selected superheroes to the JavaScript console:

```
$("#selectable").on("selectableselecting", function(event, ui) {  
    console.log(ui.selecting.innerHTML);  
});
```

Verify the code works by opening the JavaScript console, then click on some superheroes to see the superheroes appear in the console.

HTML

CSS

JavaScript

```
1 $("#resizable").resizable();
2
3 $("#selectable").selectable();
4
```

[Render webpage](#)[Reset code](#)

### Your webpage

#### Resize Me!

This box can be  
resized.

- Superman
- Batman
- Wonder Woman
- Aquaman
- The Flash

▼ View solution

 Explain

--- START FILE: JavaScript ---

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

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

```
$("#selectable").on("selectableselecting", function(event, ui) {
    console.log(ui.selecting.innerHTML);
});
```

```
});
```

```
--- END FILE: JavaScript ---
```

[Feedback?](#)

## jQuery UI animations

jQuery UI provides the ability to animate color transitions and the adding and removing of CSS classes. jQuery UI also adds some fun animation effects.

### PARTICIPATION ACTIVITY

#### 9.9.4: jQuery UI animations.



The rendered webpage below demonstrates jQuery UI animations. Place the mouse over each square to see the animation effects. Examine the JavaScript and note the following:

- The **animate()** method animates the transition from one color to another by specifying the target color.
- The **addClass()** and **removeClass()** methods animate the transition when adding and removing a class to an element by specifying a time argument.
- The **effect()** method uses "shake" and "bounce" animation effects to grab the user's attention. jQuery UI supplies fifteen different animation effects, including drop, explode, and puff.

Add another `<div>` to create a fourth box with the text "TEST". When the mouse hovers over the new box, the following should happen:

1. Use **animate()** to change the border color to some other color.
2. Create a new CSS class that uses a large font size. Use **addClass()** and **removeClass()** with a time argument to add and remove the new class so the box's font changes size.
3. Use **effect()** with the "explode" animation effect to make the square disappear.

[HTML](#)[CSS](#)[JavaScript](#)

```
15 $( "#classAnim" ).hover(function() {
16     $(this).addClass("fire", 1000);
17 }, function() {
18     $(this).removeClass("fire", "fast");
19 });
20
21 // Animation effects
22 $( "#effectAnim" ).hover(function() {
23     $(this).effect("shake", {
24         distance: 10,
25         duration: 1000
26     });
27 }, function() {
28     $(this).effect("bounce");
29 });
30
```

[Render webpage](#)[Reset code](#)

### Your webpage

Color  
animation

Class  
animation

Effect  
animation

▼ View solution

 Explain

--- START FILE: HTML ---

```
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquer
</script>
<script
src="https://ajax.googleapis.com/ajax/libs/jqueryui/1.11.4/jq
ui.min.js"></script>
```



```
<link rel="stylesheet"
href="https://ajax.googleapis.com/ajax/libs/jqueryui/1.11.4/t
ui.css">

<div id="colorAnim">
Color animation
</div>

<div id="classAnim">
Class animation
</div>

<div id="effectAnim">
Effect animation
</div>

<div id="testAnim">
TEST
</div>

--- END FILE: HTML ---

--- START FILE: CSS ---

.fire {
    color: red;
    font-size: larger;
    border: solid orange 5px;
}

div {
    width: 100px;
    height: 100px;
    display: flex;
    flex-direction: column;
    justify-content: center;
    text-align: center;
    border: solid black 1px;
    float: left;
    margin-right: 20px;
}

#colorAnim {
    background: lightcoral;
```

```
}

#classAnim {
    background: lightblue;
}

#effectAnim {
    background: lightgreen;
}

.largefont {
    font-size: 20px;
}

--- END FILE: CSS ---

--- START FILE: JavaScript ---

// Color animation
$("#colorAnim").hover(function() {
    $(this).animate({
        backgroundColor: '#59a',
        color: "blue"
    }, "slow");
}, function() {
    $(this).animate({
        backgroundColor: "yellow",
        color: "black"
    }, "slow");
});

// Class animation
$("#classAnim").hover(function() {
    $(this).addClass("fire", 1000);
}, function() {
    $(this).removeClass("fire", "fast");
});

// Animation effects
$("#effectAnim").hover(function() {
    $(this).effect("shake", {
        distance: 10,
        duration: 1000
    });
});
```

```
}, function() {
    $(this).effect("bounce");
});

// Test effects
$("#testAnim").hover(function() {
    $(this).animate({
        borderColor: "green",
    }).addClass("largefont", 1000);
}, function() {
    $(this).animate({
        borderColor: "black",
    }).removeClass("largefont", "fast").effect("explode");
});

--- END FILE: JavaScript ---
```

[Feedback?](#)

## jQuery UI widgets

The jQuery UI plugin provides numerous widgets, including a progress bar, autocomplete, and slider. Some jQuery UI plugin widgets are similar to their HTML counter-part, but other widgets like the accordion and tabs do not have an HTML equivalent. The datepicker widget is especially useful since all browsers do not currently support the HTML datepicker widget using `<input type="date">`.

### PARTICIPATION ACTIVITY

#### 9.9.5: jQuery UI widgets.



The rendered webpage below demonstrates three jQuery UI widgets:

- Datepicker: Click the date text field to display the datepicker widget. The `datepicker()` method adds a click event callback function to the text field to display the datepicker when the text field is clicked.
- Dialog: Click the "Show dialog box" button to display the dialog box. The `dialog()` method displays the dialog box. The dialog box remains visible until the user clicks the "X" to dismiss the dialog box. The [online documentation](#) shows how to create dialog boxes with customized buttons.
- Tabs: Click each tab to reveal the tab's contents. The `tab()` method converts the `<div>` with nested tags into a set of tabs. Each tab's title is specified in an unordered list, and each tab's content is specified within a `<div>` with the tab's id.

Try to modify the JavaScript so the dialog box displays the date that is currently selected. If no date is selected, the dialog box should say "No date was selected."

HTML

JavaScript

```
1 <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.
2 <script src="https://ajax.googleapis.com/ajax/libs/jqueryui/1.
3
4 <link rel="stylesheet" href="https://ajax.googleapis.com/ajax/
5
6 <p>
7 Registration date: <input type="text" id="datepicker">
8 </p>
9
10 <p>
11 <button id="showDialog">Show dialog box</button>
12 </p>
13
14 <div id="dialog" title="User error">
15   <p>I'm sorry, Dave. I'm afraid I can't do that.</p>
16
```

Render webpage

Reset code

**Your webpage**Registration date: 

Breakfast

Lunch

Dinner

Pancakes and sausage.

▼ View solution

 Explain

--- START FILE: JavaScript ---

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

```
$("#dialog").hide();

$("#showDialog").click(function() {
    let x = $("#datepicker").val();
    if(x !== '')
    {
        $("#datepicker").dialog();
    }
    else
    {
        let t = "No date was selected.";
        $("#div:first p").text(t);
        $("#dialog").dialog();
    }
});

$("#tabs").tabs();

--- END FILE: JavaScript ---
```

[Feedback?](#)**PARTICIPATION  
ACTIVITY**

## 9.9.6: More about jQuery UI.



- 1) jQuery UI is well adapted for mobile devices.

☐ True  
☒ False

**Correct**

The animations work well, but interactions like drag-and-drop are not suited for touchscreens. jQuery Mobile is a framework for creating web applications specifically for mobile devices.



- 2) The jQuery ThemeRoller allows developers to customize the look and feel of jQuery UI widgets.

☒ True  
☐ False

**Correct**

ThemeRoller is accessible from the jQuery UI website. ThemeRoller produces customized CSS stylesheets to make the widgets match the style of the website using the widgets.



3) Developing jQuery plugins is a difficult undertaking.

- ☐ True
- ☒ False

**Correct**

Developing jQuery plugins is outside the scope of this material, but a simple plugin can be written in just a few lines of code.

[Feedback?](#)

Exploring further:

- [jQuery Plugin Registry](#)
- Plugins: [Cycle2](#), [menu-aim](#), [Tooltipster](#), [animatedModal.js](#), [Tiny Colorpicker](#), [payform](#)
- [jQuery UI API documentation](#)
- [jQuery UI - jQuery Learning Center](#)
- [How to Create a Basic Plugin](#)
- [jQuery Mobile](#)
- [Google Hosted Libraries](#)

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