# UNIT 2 : JQUERY FUNDAMENTALS

2.1 Introduction and basics:

    2.1.1 Advantage of jQuery and Syntax

    2.1.2 jQuery Selectors:

    2.1.3 jQuery Events (ready(),click(), keypress(),focus(),blur(),change())

2.2 jQuery Effects:

    Show/Hide, Fade, Slide, Stop, Chaining, Callback

2.3 jQuery Manipulation methods:

    2.3.1 Get/Set methods (text(), attr(), html(), val())

    2.3.2 Inert methods: (append(), prepend(),text(), before(), after(), wrap())

    2.3.3 Remove element methods : (remove(),empty(),unwrap())

    2.3.4 jQuery Get and Set CSS properties using css() method

# 2.1 Introduction and basics:

2.1.1 Advantage of jQuery and Syntax

2.1.2 jQuery Selectors:

2.1.3 jQuery Events (ready(),click(), keypress(),focus(),blur(),change())

- **jQuery** is a fast and concise JavaScript Library created by John Resig in 2006 with a nice motto – Write less, do more.
- **jQuery** simplifies **HTML** document traversing, event handling, animating, and AJAX interactions for rapid web development.
- The purpose of jQuery is to make it much **easier** to use **JavaScript** on your website.

# Adding jQuery to Your Web Pages

- There are several ways to start using jQuery on your web site.

- You can:
  - Download the jQuery library from jQuery.com
  - Include jQuery from a CDN **(Content Delivery Network)**, like Google, Microsoft

# Advantages:

- its light weight when compared to other javascript frameworks.

- it has a wide range of plugins available for various specific needs.

- it is easier for a designer to learn jQuery as it uses familiar CSS syntax. jQuery is Javascript for Designers.

# 2.1.1 jQuery Syntax

- With jQuery you select (query) HTML elements and perform "actions" on them.

- Basic syntax is: **$(*selector*).*action*()**
  - A $ sign to define/access jQuery
  - A (*selector*) to "query (or find)" HTML elements
  - A jQuery *action*() to be performed on the element(s)

◻ Examples:

◼ $(this).hide() - hides the current element.

◼ $("p").hide() - hides all <p> elements.

◼ $(".test").hide() - hides all elements with class="test".

◼ $("#test").hide() - hides the element with id="test".

# 2.1.2 jQuery Selectors

- ☐ jQuery selectors allow you to **select** and **manipulate** HTML element(s).

- ☐ jQuery selectors are used to "**find**" (or select) HTML elements based on their **name**, **id**, **classes**, **types**, **attributes**, **values** of attributes and much more.

- ☐ All selectors in jQuery start with the **dollar sign** and parentheses: **$()**.

# The element Selector

- ❑ The jQuery element selector selects elements based on the **element** name.
- ❑ You can select all <p> elements on a page like this:
  - ▪ $("p")

```
$(document).ready(function()
{
    $("button").click(function()
    {
        $("p").hide();
    });
});
```

# The #id Selector

☐ The jQuery #id selector uses the id attribute of an HTML tag to find the specific element.

■ $("#test")

■ $(document).ready(function()

```
{
    $("button").click(function()
    {
        $("#test").hide();
    });
});
```

# The .class Selector

☐ The jQuery .class selector uses the class attribute of an HTML tag to find the specific element.

- $(".test")
- $(document).ready(function()

```
{
    $("button").click(function()
    {
        $(".test").hide();
    });
});
```

# 2.1.3 jQuery Event

☐ All the different **visitor's actions** that a web page can **respond** to are called **events**.

☐ An event represents the precise **moment** when **something happens**.

☐ Examples:
   - **moving** a **mouse** over an element
   - **selecting** a **radio** button
   - **clicking** on an **element**

| Mouse Events | Keyboard Events | Form Events | Document/Window Events |
|---|---|---|---|
| click | keypress | submit | load |
| dblclick | keydown | change | resize |
| mouseenter | keyup | focus | scroll |
| mouseleave | | blur | unload |

# 2.2 jQuery Effects:

☐ Show/Hide, Fade, Slide, Stop, Chaining, Callback

# Effects

# 2.2.1 hide() and 2.2.2 show()

- ☐ To hide or show HTML elements hide() or show() are used.

# Syntax

$(*selector*).hide(*speed,callback*);
$(*selector*).show(*speed,callback*);

☐ The optional speed parameter specifies the speed of the hiding/showing, and can take the following values: "**slow**", "**fast**", or **milliseconds**.

☐ The optional callback parameter is a function to be executed after the hide() or show() method completes (you will learn more about callback functions in a later chapter).

```html
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.1.1/jquery.min.js"></script>
<script>
$(document).ready(function(){
    $("#hide").click(function(){
        $("p").hide();
    });
    $("#show").click(function(){
        $("p").show();
    });
});
</script>
</head>
<body>
        <p>If you click on the "Hide" button, I will disappear.</p>
        <button id="hide">Hide</button>
        <button id="show">Show</button>
</body>
</html>
```

# **toggle()**

- □ you can toggle between the hide() and show() methods with the toggle() method

- □ Example:

- □ $("button").click(function(){
      $("p").toggle();
    });

# 2.2.3 fade

- With jQuery you can fade an element in and out of visibility.

- jQuery has the following fade methods:
  - fadeIn()
  - fadeOut()
  - fadeToggle()
  - fadeTo()

# fadeIn()

- fadeIn() method is used to fade in a hidden element.
- Syntax:
- $(*selector*).fadeIn(*speed,callback*);

# Example:

```
<!DOCTYPE html>
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.1.1/jquery.min.js"></script>
<script>
$(document).ready(function(){
    $("button").click(function(){
        $("#div1").fadeIn();
        $("#div2").fadeIn("slow");
        $("#div3").fadeIn(3000);
    });
});
</script>
</head>
<body>

<p>Demonstrate fadeIn() with different parameters.</p>

<button>Click to fade in boxes</button><br><br>

<div id="div1" style="width:80px;height:80px;display:none;background-color:red;"></div><br>
<div id="div2" style="width:80px;height:80px;display:none;background-color:green;"></div><br>
<div id="div3" style="width:80px;height:80px;display:none;background-color:blue;"></div>

</body>
</html>
```

# fadeOut()

- fadeOut() method is used to fade out an element.
- Syntax:
- $(*selector*).fadeOut(*speed,callback*);

# Example:

```
<!DOCTYPE html>
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.1.1/jquery.min.js"></script>
<script>
$(document).ready(function(){
    $("button").click(function(){
        $("#div1").fadeOut();
        $("#div2").fadeOut ("slow");
        $("#div3").fadeOut (3000);
    });
});
</script>
</head>
<body>

<p>Demonstrate fadeOut () with different parameters.</p>

<button>Click to fade Out boxes</button><br><br>

<div id="div1" style="width:80px;height:80px;display:none;background-color:red;"></div><br>
<div id="div2" style="width:80px;height:80px;display:none;background-color:green;"></div><br>
<div id="div3" style="width:80px;height:80px;display:none;background-color:blue;"></div>

</body>
</html>
```

# fadeToggle()

- The jQuery fadeToggle() method toggles between the fadeIn() and fadeOut() methods.

- Syntax:

- $(*selector*).fadeToggle(*speed,callback*);

# Example:

```html
<!DOCTYPE html>
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.1.1/jquery.min.js"></script>
<script>
$(document).ready(function(){
    $("button").click(function(){
        $("#div1").fadeToggle();
        $("#div2").fadeToggle("slow");
        $("#div3").fadeToggle(3000);
    });
});
</script>
</head>
<body>

<p>Demonstrate fadeToggle() with different speed parameters.</p>

<button>Click to fade in/out boxes</button><br><br>

<div id="div1" style="width:80px;height:80px;background-color:red;"></div>
<br>
<div id="div2" style="width:80px;height:80px;background-color:green;"></div>
<br>
<div id="div3" style="width:80px;height:80px;background-color:blue;"></div>

</body>
</html>
```

# fadeTo()

- The jQuery fadeTo() method allows fading to a given opacity (value between 0 and 1).
- Syntax:
- $(*selector*).fadeTo(*speed,opacity,callback*);

| Parameter | Description |
|---|---|
| speed | Required. Specifies the speed of the fading effect. Possible values:<br>•milliseconds<br>•"slow"<br>•"fast" |
| opacity | Required. Specifies the opacity to fade to. Must be a number between 0.00 and 1.00 |
| easing | Optional. Specifies the speed of the element in different points of the animation. Default value is "swing"Possible values:<br>•"swing" - moves slower at the beginning/end, but faster in the middle<br>•"linear" - moves in a constant speed |
| callback | Optional. A function to be executed after the fadeTo() method is completed To learn more about callback, |

# Example:

```
<!DOCTYPE html>
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.1.1/jquery.min.js"></script>
<script>
$(document).ready(function(){
    $("button").click(function(){
        $("#div1").fadeTo("slow", 0.15);
        $("#div2").fadeTo("slow", 0.4);
        $("#div3").fadeTo("slow", 0.7);
    });
});
</script>
</head>
<body>

<p>Demonstrate fadeTo() with different parameters.</p>

<button>Click to fade boxes</button><br><br>

<div id="div1" style="width:80px;height:80px;background-color:red;"></div><br>
<div id="div2" style="width:80px;height:80px;background-color:green;"></div><br>
<div id="div3" style="width:80px;height:80px;background-color:blue;"></div>

</body>
</html>
```

# 2.2.4 Slide

- ☐ The jQuery slide methods slide elements up and down.
- ☐ jQuery has the following slide methods:
  - ■ slideDown()
  - ■ slideUp()
  - ■ slideToggle()

# Syntax:

- $(*selector*).slideDown(*speed,callback*);
- The optional speed parameter specifies the duration of the effect. It can take the following values: "slow", "fast", or milliseconds.
- The optional callback parameter is a function to be executed after the sliding completes.

# Example:

```
<html>
<head>
<script src="jquery-3.1.1.js">
</script>
<script>
$(document).ready(function(){
            $("#main").click(function(){
                        $("#sub").slideDown("slow");
            });
});
</script>
<style>
#sub
{
            display:none;
}
</style>
</head>
<body>
<div id="main"> Department</div>
<div id="sub"> BCA</div>
</body>
</html>
```

# Syntax:

- $(*selector*).slideUp(*speed,callback*);

- The **optional** speed parameter specifies the duration of the effect. It can take the following values: "slow", "fast", or milliseconds.

- The **optional** callback parameter is a function to be executed after the sliding completes.

# Example:

```
<html>
<head>
<script src="jquery-3.1.1.js">
</script>
<script>
$(document).ready(function(){
          $("#main").click(function(){
                    $("#sub").slideUp("slow");
          });
});
</script>
</head>
<body>
<div id="main"> Department</div>
<div id="sub"> BCA</div>
</body>
</html>
```

# Syntax:

- $(*selector*).slideToggle(*speed,callback*);

- The optional speed parameter specifies the duration of the effect. It can take the following values: "slow", "fast", or milliseconds.

- The optional callback parameter is a function to be executed after the sliding completes.

# Example:

```html
<html>
<head>
<script src="jquery-3.1.1.js">
</script>
<script>
$(document).ready(function(){
        $("#main").click(function(){
                $("#sub").slideToggle("slow");
        });
});
</script>
<style>
#sub
{
        display:none;
}
</style>
</head>
<body>
<div id="main"> Department</div>
<div id="sub"> BCA</div>
</body>
</html>
```

# 2.2.5 stop

- The jQuery stop() method is used to stop animations or effects before it is finished.

```
$("#stop").click(function(){
    $("#panel").stop();
});
```

# 2.2.6 jQuery Callback Functions

- JavaScript statements are executed line by line. However, with effects, the next line of code can be run even though the effect is not finished. This can create errors.

- To prevent this, you can create a callback function.

- A callback function is executed after the current effect is finished.

- **$(*selector*).hide(*speed,callback*);**

```
<html>
<head>
<script src="jquery-3.1.1.js">
</script>
<script>
$(document).ready(function(){
    $("button").click(function(){
        $("p").hide("slow", function(){
            alert("The paragraph is now hidden");
        });
    });
});
</script>
</head>
<body>

<button>Hide</button>

<p>This is a paragraph with little content.</p>

</body>
</html>
```

# 2.2.7 Chaining

- ☐ With jQuery, you can chain together actions/methods.
- ☐ Until now we have been writing jQuery statements one at a time (one after the other).
- ☐ However, there is a technique called chaining, that allows us to run multiple jQuery commands, one after the other, on the same element(s).

```
<html>
<head>
<script src="jquery-3.1.1.js">
</script>
<script>
$(document).ready(function(){
    $("button").click(function(){
        $("#p1").css("color", "red").slideUp(2000).slideDown(2000);
    });
});
</script>
</head>
<body>

<p id="p1">jQuery is fun!!</p>

<button>Click me</button>

</body>
</html>
```

# 2.3 jQuery Manipulation methods:

- ☐ 2.3.1 Get/Set methods (text(), attr(), html(), val())
- ☐ 2.3.2 Insert methods: (append(), prepend(),text(), before(), after(), wrap())
- ☐ 2.3.3 Remove element methods : (remove(),empty(),unwrap())
- ☐ 2.3.4 jQuery Get and Set CSS properties using css() method

# 2.3.1 Get/Set methods (text(), attr(), html(), val())

# get

- **text()** - Gets the text content of selected elements
- **attr()** - The attr() method sets or returns attributes and values of the selected elements.
- **html()** - Gets the content of selected elements (including HTML markup)
- **val()** - Gets the value of form fields

# **text**() and **html()**

```html
<html>
<head>
<script src="jquery-3.1.1.js"></script><script>
$(document).ready(function(){
    $("#btn1").click(function(){
        alert("Text: " + $("#test").text());
    });
    $("#btn2").click(function(){
        alert("HTML: " + $("#test").html());
    });
});
</script>
</head>
<body>
<p id="test">This is some <b>bold</b> text in a paragraph.</p>
<button id="btn1">Show Text</button>
<button id="btn2">Show HTML</button>

</body>
</html>
```

# attr()

```
<html>
        <head>
                <script src="jquery.js">
                </script>
                <script>
                        $(document).ready(function(){
                                $("button").click(function(){
                                        alert($("img").attr("height"));
                                });
                        });
                </script>
        </head>
        <body>
                <img src="123.jpeg" height="500">
                <button>Click Here</button>
        </body>
</html>
```

# val()

```
<html>
        <head>
                <script src="jquery.js">
                </script>
                <script>
                        $(document).ready(function(){
                                $("button").click(function(){
                                        alert($("#txts").val());
                                });
                        });
                </script>
        </head>
        <body>
                <input type="text" id="txts">
                <button>Click Here</button>
        </body>
</html>
```

# set

- **text()** - sets the text content of selected elements
- **attr()** - The attr() method sets or returns attributes and values of the selected elements.
- **html()** - Sets the content of selected elements (including HTML markup)
- **val()** - Sets the value of form fields

# text()

```html
<html>
    <head>
        <script src="jquery.js">
        </script>
        <script>
            $(document).ready(function(){
                $("button").click(function(){
                    $("p").text("SYBCA");
                });
            });
        </script>
    </head>
    <body>
        <P>SYBCA THE <B> GREAT </B> CLASS </P>
        <button>Click Here</button>
    </body>
</html>
```

# attr()

```
<html>
        <head>
                <script src="jquery.js">
                </script>
                <script>
                        $(document).ready(function(){
                                $("button").click(function(){
                                        $("img").attr("height","500");
                                });
                        });
                </script>
        </head>
        <body>
                <img src="123.jpeg">
                <button>Click Here</button>
        </body>
</html>
```

# html()

```
<html>
        <head>
                <script src="jquery.js">
                </script>
                <script>
                        $(document).ready(function(){
                                $("button").click(function(){
                                        $("p").html("SYBCA the <i>Great</i>
class");
                                });
                        });
                </script>
        </head>
                <body>
                        <P>SYBCA THE <B> GREAT </B> CLASS </P>
                        <button>Click Here</button>
                </body>
</html>
```

# val()

```
<html>
        <head>
                <script src="jquery.js">
                </script>
                <script>
                        $(document).ready(function(){
                                $("button").click(function(){
                                        $("#txts").val("SYBCA");
                                });
                        });
                </script>
        </head>
        <body>
                <input type="text" id="txts">
                <button>Click Here</button>
        </body>
</html>
```

# 2.3.2 Insert methods: (append(), prepend(),text(), before(), after(), wrap())

- With jQuery, it is easy to **add new elements/content**.

- **append**() - Inserts content at the end of the selected elements

- **prepend**() - Inserts content at the beginning of the selected elements

- **after**() - Inserts content after the selected elements

- **before**() - Inserts content before the selected elements

- **next() –** The next() method returns the next sibling element of the selected element. Sibling elements are elements that share the same parent.

- **wrap()** - The wrap() method wraps specified HTML element(s) around each selected element.

# append()

```
<html>
        <head>
                <script src="jquery.js">
                </script>
                <script>
                                $(document).ready(function(){
                                        $("button").click(function(){
                                                $("ol").append("<li>.NET</li>");
                                        });
                                });
                </script>
        </head>
        <body>
                <ol start="401" >
                                <li>IS</li>
                                <li>IOT</li>
                                <li>JAVA</li>
                </ol>
        <button>Click Here</button>
        </body>
</html>
```

# prepend()

```
<html>
        <head>
                <script src="jquery.js">
                </script>
                <script>
                        $(document).ready(function(){
                                $("button").click(function(){
                                        $("ol").append("<li>.NET</li>");
                                });
                        });
                </script>
        </head>
        <body>
                <ol start="401" >
                        <li>IS</li>
                        <li>IOT</li>
                        <li>JAVA</li>
                </ol>
        <button>Click Here</button>
        </body>
</html>
```

# after()

```
<html>
        <head>
                <script src="jquery.js">
                </script>
                <script>
                                $(document).ready(function(){
                                        $("button").click(function(){
                                                $("ol").after("<li>.NET</li>");
                                        });
                                });
                </script>

        </head>
                <body>
                <ol>
                        <li>IS</li>
                        <li>IOT</li>
                        <li>JAVA</li>
                </ol>
                <button>Click Here</button>
                </body>
</html>
```

# before()

```
<html>
        <head>
                <script src="jquery.js">
                </script>
                <script>
                                $(document).ready(function(){
                                        $("button").click(function(){
                                                $("ol").before("<li>.NET</li>");
                                        });
                                });
                </script>

        </head>
                <body>
                <ol>
                        <li>IS</li>
                        <li>IOT</li>
                        <li>JAVA</li>
                </ol>
                <button>Click Here</button>
                </body>
</html>
```

# wrap()

```html
<html>
    <head>
        <script src="jquery.js">
        </script>
        <script>
            $(document).ready(function(){
                $("button").click(function(){
                    $("u").wrap("<div>");
                });
            });
        </script>
        <style>
            div{
                background-color:red;
                height: 200;
                width: 200;

            }
        </style>
    </head>
        <body>
        <u>
        VIDYABHARTI TRUST COLLEGE OF BUSINESS, COMPUTER-SCIENCE AND RESEARCH
        </u>
        <button>Click Here</button>
        </body>
</html>
```

# 2.3.3 Remove element methods : remove(),empty(),unwrap()

- ☐ With jQuery, it is easy to remove existing HTML elements.
- ☐ **remove**() - Removes the selected element (and its child elements)
- ☐ **empty**() - Removes the child elements from the selected element
- ☐ **unwrap()** - The unwrap() method removes the parent element of the selected                                    elements.

# remove()

```
<html>
        <head>
                <script src="jquery.js">
                </script>
                <script>
                                $(document).ready(function(){
                                        $("button").click(function(){
                                                $("div").remove();
                                        });
                                });
                </script>
                <style>
                                .sybca{
                                        background-color:red;
                                        height: 200;
                                        width: 200;

                                }
                </style>
        </head>
                <body>
                <div class="sybca">
                VIDYABHARTI TRUST COLLEGE OF BUSINESS, COMPUTER-SCIENCE AND RESEARCH
                </u>
                </div>
                <button>Click Here</button>
                </body>
</html>
```

# empty()

```
<html>
        <head>
                <script src="jquery.js">
                </script>
                <script>
                                $(document).ready(function(){
                                        $("button").click(function(){
                                                $("div").empty();
                                        });
                                });
                </script>
                <style>
                        .sybca{
                                background-color:red;
                                height: 200;
                                width: 200;


                        }
                </style>
        </head>
                <body>
                <div class="sybca">
                VIDYABHARTI TRUST COLLEGE OF BUSINESS, COMPUTER-SCIENCE AND RESEARCH
                </u>
                </div>
                <button>Click Here</button>
                </body>
</html>
```

# unwrap()

```html
<html>
        <head>
                <script src="jquery.js">
                </script>
                <script>
                                $(document).ready(function(){
                                        $("button").click(function(){
                                                $("u").unwrap();
                                        });
                                });
                </script>
                <style>
                        .sybca{
                                background-color:red;
                                height: 200;
                                width: 200;


                        }
                </style>
        </head>
                <body>
                <div class="sybca">
                <u>
                VIDYABHARTI TRUST COLLEGE OF BUSINESS, COMPUTER-SCIENCE AND RESEARCH
                </u>
                </div>
                <button>Click Here</button>
                </body>
</html>
```

# 2.3.4 jQuery Get and Set CSS properties using css() method

- jQuery has several methods for CSS manipulation. We will look at the following methods:

- **addClass**() - Adds one or more classes to the selected elements

- **removeClass**() - Removes one or more classes from the selected elements

- **toggleClass**() - Toggles between adding/removing classes from the selected elements

- **css**() - Sets or returns the style attribute

# addClass()

```html
<html>
        <head>
                <script src="jquery.js">
                </script>
                <script>
                                $(document).ready(function(){
                                        $("button").click(function(){
                                                $("div").addClass("sybca");
                                        });
                                });
                </script>
                <style>
                                .sybca{
                                        background-color:red;
                                        height: 200;
                                        width: 200;

                                }
                </style>
        </head>
                <body>
                <div>
                VIDYABHARTI TRUST COLLEGE OF BUSINESS, COMPUTER-SCIENCE AND RESEARCH
                </u>
                </div>
                <button>Click Here</button>
                </body>
</html>
```

# removeClass()

```html
<html>
        <head>
                <script src="jquery.js">
                </script>
                <script>
                                $(document).ready(function(){
                                        $("button").click(function(){
                                                $("div").removeClass("sybca");
                                        });
                                });
                </script>
                <style>
                                .sybca{
                                                background-color:red;
                                                height: 200;
                                                width: 200;

                                }
                </style>
        </head>
                <body>
                <div class="sybca">
                VIDYABHARTI TRUST COLLEGE OF BUSINESS, COMPUTER-SCIENCE AND RESEARCH
                </u>
                </div>
                <button>Click Here</button>
                </body>
</html>
```

# toggleClass()

```html
<html>
        <head>
                <script src="jquery.js">
                </script>
                <script>
                                $(document).ready(function(){
                                                $("button").click(function(){
                                                                $("div").toggleClass("sybca");
                                                });
                                });
                </script>
                <style>
                                .sybca{
                                                background-color:red;
                                                height: 200;
                                                width: 200;

                                }
                </style>
        </head>
                <body>
                <div class="sybca">
                VIDYABHARTI TRUST COLLEGE OF BUSINESS, COMPUTER-SCIENCE AND RESEARCH
                </u>
                </div>
                <button>Click Here</button>
                </body>
</html>
```

# css()

```
<html>
        <head>
                <script src="jquery.js">
                </script>
                <script>
                                $(document).ready(function(){
                                        $("button").click(function(){
                                                $("div").css("margin","200 300 500 300");
                                        });
                                });
                </script>
                <style>
                                .sybca{
                                        background-color:red;
                                        height: 200;
                                        width: 200;

                                }
                </style>
        </head>
                <body>
                <div class="sybca">
                VIDYABHARTI TRUST COLLEGE OF BUSINESS, COMPUTER-SCIENCE AND RESEARCH
                </u>
                </div>
                <button>Click Here</button>
                </body>
</html>
```