

COMP3322A Modern Technologies on World Wide Web

Assignment Three



Total 6 points

Objectives

1. A learning activity to support ILO 1 and ILO 2.
2. To practice using JavaScript and/or jQuery to implement the drag-and-drop feature of HTML5.

Requirements

Write a Drag-and-drop program with the following features.

1. To **copy** an image, the user drags the image and drop into the 'dest' <div> element block. Upon successful copying, play the drop effect audio file 'drop.wav' once.
2. An image can be copied into the 'dest' <div> block multiple times.
3. To **move** an image, the user presses the 'Shift' key while dragging the image into the <div> block. Upon successful moving, play the drop effect audio file 'drop.wav' once.
4. Once an image is placed inside the 'dest' <div> block, it cannot be dragged out of the <div> block.
5. Users cannot create new image object by drag-and-drop an image object inside the 'dest' <div> block to another location in the 'dest' <div> block. Play the reject effect audio file 'reject.wav' once to indicate this operation is unsuccessful.
6. Users cannot drag and drop an image object to another image object as the image objects are not droppable.
7. The only way to remove an image from the <div> block is to drag-and-drop the image to the trash bin.
8. The trash bin appears on the bottom-right of the 'dest' <div> block and it must be a child node inside the 'dest' <div> block.
9. When an image object is being dragged over the trash bin, the graphics of the trash bin changes from "trashlit.png"  to "trash.png" .
10. When no image object is over the bin, i.e., after the drop or moving the object away from the bin, the graphics of the bin changes back to "trashlit.png".
11. The trash only accepts image objects coming from the 'dest' <div> block to drop into the bin. Upon successful dropping to the trash, play the trash effect audio file 'trash.wav' once.
12. We should completely remove the image object from the DOM tree after successfully drop the object into the trash bin, i.e., the trash bin should not have any child elements in it.
13. When users drag an image from outside of the <div> block to the bin, the bin should not accept the 'drop'. Play the reject effect audio file 'reject.wav' once to indicate this operation is unsuccessful.

Below are some sample screenshots of the program.

Figure 1 When the program starts.

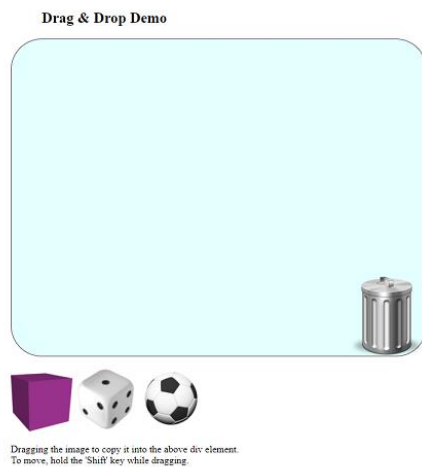


Figure 2 After some copy and move actions.



Figure 3 When moving an image object over the trash bin



Figure 4 When moving an image object over another image object, the system should not allow the drop.



Below is the HTML framework of the program. Complete the program by adding necessary **JavaScript code** and **CSS styling**. You can use **either jQuery or native JavaScript** to implement the program.

```
<!DOCTYPE HTML>
<html>
  <head>
    <meta charset="UTF-8">
    <title>Drag and Drop</title>
    <style>
      #container {
        margin-left: 100px;
        margin-top: 30px;
      }
      h2 {
        margin-left: 50px;
```

```

    }
    #dest {
        background: lightCyan;
        border: 1px solid #444;
        border-radius: 50px;
        width: 640px;
        height: 480px;
        padding: 1rem;
    }
</style>
</head>
<body>
    <div id='container'>
        <h2>Drag & Drop Demo</h2>
        <div id='dest'>
            <img id='trash' src='trashlit.png'>
        </div>
        <p>
            <img id='source1' src='cube.png'>
            <img id='source2' src='Dice.png'>
            <img id='source3' src='ball.png'>
        </p>
        <p>Dragging the image to copy it into the above div element.<br>
        To move, hold the 'Shift' key while dragging.</p>
    </div>

    <script>

    </script>
</body>
</html>

```

Resources

We have provided the following files for your implementation. You can download a copy of the file Assignment3.zip from the Moodle site.

- The image objects - ball.png, cube.png, Dice.png, trash.png, & trashlit.png
- The audio files - drop.wav, reject.wav, & trash.wav
- The HTML framework file - dragdrop.html

Submission

Please finish the assignment on or before **November 23, 2020 (Monday)**. Submit your work dragdrop.html to the course's Moodle submission page. You just need to submit the dragdrop.html file as we expect you are only using the provided resources for the implementation. If you are using the jQuery library to implement the dynamic features, please include the external CDN link in your program.

Grading Policy

Feature	Mark
Requirements (1)+(2) - allow copying an object multiple times to the <div> block + sound effect	1 point

Requirement (3) - allow moving an image object to the <div> block + sound effect	0.5 points
Requirements (4)+(5) - not allow moving or cloning the image object within the <div> block + sound effect	1 point
Requirement (6) - an image object is not droppable	0.5 points
Requirements (8)+(9)+(10) - placement and animation of the trash bin	1 point
Requirements (7)+(11)+(12) - allow dropping an image object to the trash bin + sound effect	1.5 points
Requirement (13) - reject an external object + sound effect	0.5 points

Plagiarism

Plagiarism is a very serious academic offence. Students should understand what constitutes plagiarism, the consequences of committing an offence of plagiarism, and how to avoid it. **Please note that we may request you to explain to us how your program is functioning as well as we may also make use of software tools to detect software plagiarism.**