Exercise 8

1. Data Creation and Deletion using Local Storage:

    Please develop a web page to add book data to the Local Storage and clear all newly added data.

    (During development, please open the Local Storage viewer in the Chrome DevTools: [F12]->[Application]->[Storage]->[Local Storage]->[files://])

    (1) Initial user interface:

    It should contain four <input> elements to be entered: Book Title, Author(s), Year, and Book URL. The Book Title and Author(s) field are "text", the Year field is "number", and the Book URL field is "url".

    Book Title: [_____] Author(s): [_____] Year: [_____] Book URL: [_____]

    [Add New Item] [Remove All Items]

Title	Author	Year	URL

    If the user enters data and clicks the button [Add New Item], the data entered by the user will be stored in the Local Storage in JSON and shown as the table below (the URL needs to be linkable) The key and value of each element for the Local Storage:
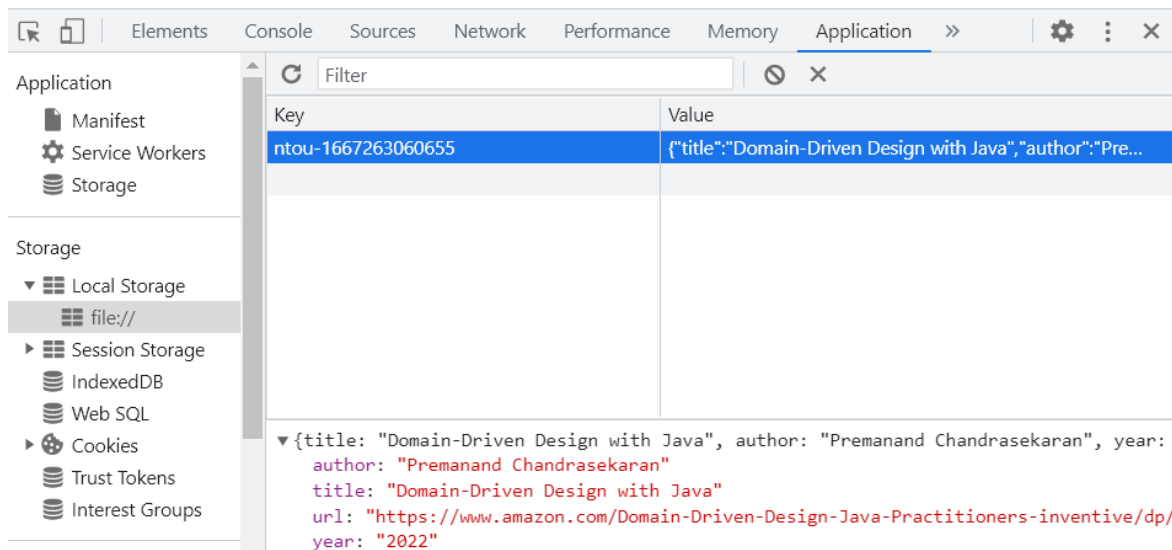
    - *key:* Use the getTime() function of the Date object to obtain the number of milliseconds since 1970/1/1, plus the prefix: "ntou-".

    - *value:* Convert the values of the above four fields into JSON objects, for example:

      {"title":"Domain-Driven Design: Tackling Complexity in the Heart of Software",

      "author":"Ross Venables",

      "year":"2003",

      "url":"https://www.amazon.com/-/zh_TW/dp/0321125215/ref=sr_1_4?dchild=1&keywords=DDD&qid=1605534390&sr=8-4"}

    Book Title: [|_____] Author(s): [_____] Year: [_____] Book URL: [_____]

    [Add New Item] [Remove All Items]

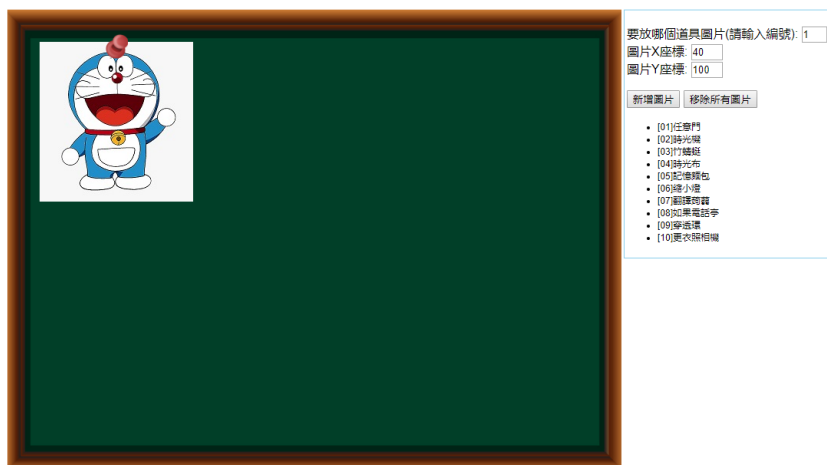 | Title | Author | Year | URL |
    |-------|--------|------|-----|
    | Domain-Driven Design with Java | Premanand Chandrasekaran | 2022 | https://www.amazon.com/Domain-Driven-Design-Java-Practitioners-inventive/dp/1800560737 |

    Note that the Local Storage viewer of the developer tools should display the corresponding information. Please also notice that if there are items that do not start with "ntou-", they should not be displayed on this page.

(2) If the user closes and reopens the browser, and reloads this webpage again, the user must still be able to see the stored data (because it has been stored in the browser's Local Storage). Please note that if the item is not included on this page, please do not display it.

(3) If the user clicks the button [Remove All Items], all the data added to this webpage in Local Storage should actually be cleared (that is, the data whose key starts with "ntou-" are removed), and the message "All items were removed!" will be displayed, and all data in the page should also be removed.

Hint:

(1) For the usage of Local Storage, please refer to the example Fig. 11.17.

(2) To check the prefix of a string, please use the API: startsWith().

(3) To know how to create objects and how to convert objects to JSON strings, please refer to:

https://www.w3schools.com/js/tryit.asp?filename=tryjs_object_create_new

https://www.w3schools.com/js/js_json_stringify.asp

https://www.w3schools.com/js/js_json_parse.asp

(4) Please use the Chrome DevTools, especially the Local Storage viewer, to debug effectively.

2. Please develop a webpage to let a user pin (釘) the pictures of Doraemon accessories to the blackboard.

   ● Please refer to ex-8-2-partial.html to obtain the initial UI. Notice that a pin (大頭針) is shown atop each picture. (We have images of three kinds of pins: blue.png, red.png, and yellow.png)

   ● The user can select the picture number, input the coordinate of X and Y, and click the button "新增圖片". A corresponding picture will appear on the blackboard. A random pin will be shown atop the picture (亂數決定大頭針的顏色，並顯示於圖片上層). Note that a newly-added picture should be displayed in front of old pictures.

   ● When the user clicks the button "移除所有圖片", all pictures should be removed.

   Advanced:

   ● When the user closes the *browser* and reopens, all posted pictures are still shown on the blackboard. (請留意移除所有圖片也要從本地端儲存中移除)

   Bonus:

   ● The picture can be dragged and dropped (拖放功能) within the scope of the blackboard. The new coordinate will be updated to the local storage.

   Hints:

   ● Be sure to understand the current HTML and CSS before coding JavaScript.

- Please use "z-index" appropriately.
- Please observe the relative position of the pin and the picture, and design the rules to set the coordinates of the pin every time an image is added.
- Drag and drop: https://www.w3schools.com/html/html5_draganddrop.asp.