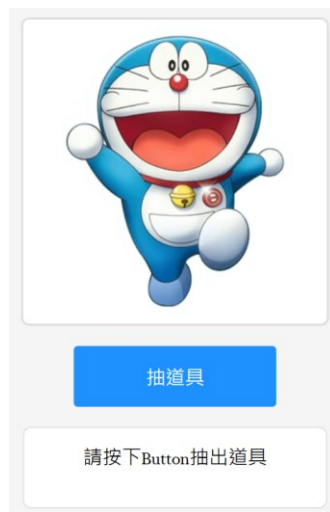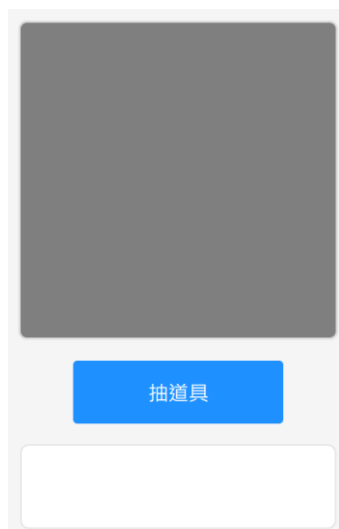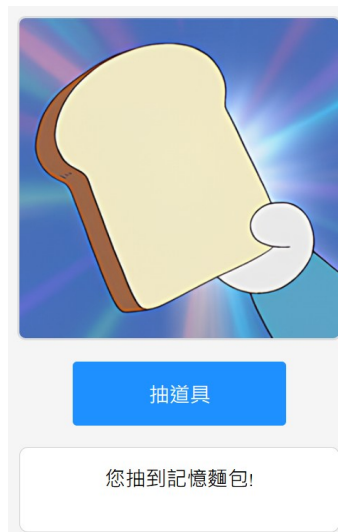# Exercise 8

1. Please develop a web app to randomly select a Doraemon gadget (請開發一個抽取哆啦 A 夢道具的程式) based on the following resources:
   - 10 PNG images of gadgets
   - Doraemon sound effects
   - A string containing 10 gadget names: "任意門 時光機 竹蜻蜓 時光布 記憶麵包 縮小燈 翻譯蒟蒻 如果電話亭 穿透環 更衣照相機"

   (1) Initial UI: (Please show 00.png)

   (2) When the user presses [Draw Gadgets], the program will randomly select one of the 10 gadgets and display it on the screen. The program first turns the screen to a gray background and plays Doraemon's sound effects. After the playback is completed, the picture and name message of the gadget will be displayed, as shown below:

抽道具

您抽到記憶麵包!

(3) The user can press the [Draw Gadgets] button again to repeat the above step.

Hint:

(1) Please refer to ex-8-1-partial.html first.

(2) For the gray background effect, you can use "blank.jpg".

(3) Please refer to Fig. 9.7 to understand how audio is used, especially the usage of the "ended" event.

(4) Please use Math.random() to obtain random numbers to determine random gadgets.

(5) Please convert from string to array: https://www.w3schools.com/JSREF/jsref_split.asp.

(Sources of images: http://chinesedora.com/gadget/doraemon-gadget-top30)

2. 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)
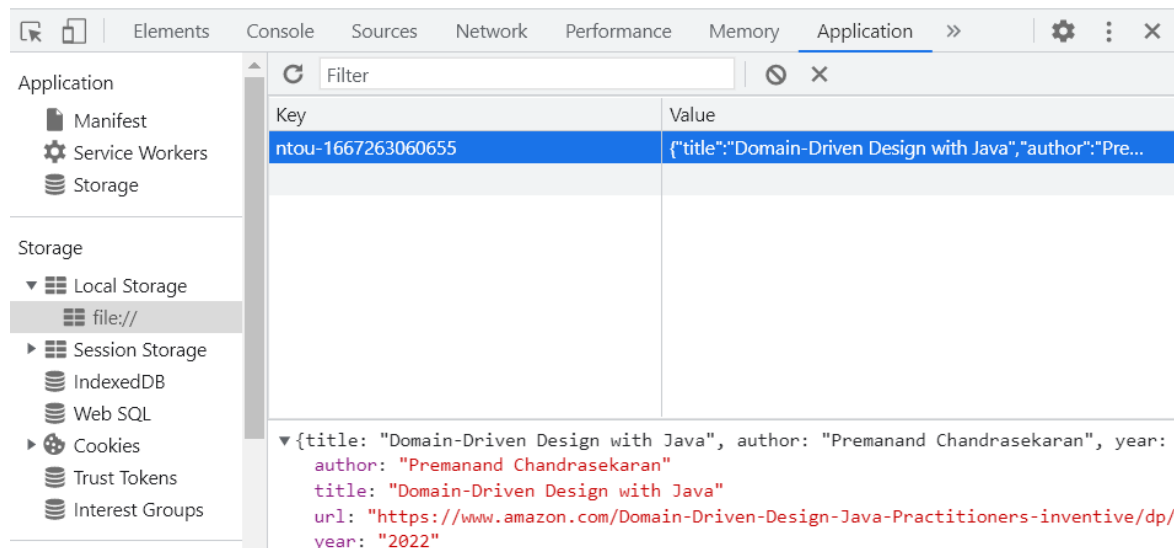
The key and value of each element for the Local Storage:

● *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":"RossVenables",

"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.