Lottery Ticket Generator

createElement(), appendChild()

Math.random(), ceil()

Array methods: push(), splice(), sort()

This Lottery Ticket Generator program generates random 6-number lottery picks, consisting of:

- five non-repeating numbers from 1 to 69 on white "ping-pong" balls
- one "Powerball" number from 1 to 26 on a red ball
- the Powerball is its own separate drawing, so it can repeat a white ball number
- The user interface works as follows:
    - The user chooses how many tickets they want (1-100)
    - the user clicks the GENERATE PICKS button
    - the lottery picks appear in a box, which can scroll if necessary

1. Open **06.06-Lottery-Ticket-Generator.html** and preview it in the browser. Choose a number of picks and click the button. Everything should work as expected.

2. Check out the html code. There are some basic tags, but the divs that hold the lottery tickets will be made dynamically, one for each ticket the user has requested.

about the input element

- **type="number"** means it will not accept non-numeric characters
- **max="100"** restricts input to a maximum value of 100
- **value="1"** display **1** on page load as the default choice

3. After you've taken the application for a spin, switch from **FINAL.js** to **START.js** and reload. It doesn't work anymore.

4. In **START.js**, begin by getting the elements from the DOM:

- **input** element
- **tickets-div** for holding the lottery tickets
- **button** which when clicked calls the **generateTickets** function

```
let numBox = document.getElementById('num-box');
let ticketsDiv = document.getElementById('tickets-div');
let btn = document.querySelector('button');
```

5. Have the button listen for a click and call the **generateTickets** function when clicked:

```
    btn.addEventListener('click', generateTickets);
```

what generateTickets() needs to do

- clear the tickets div box, to make room for the new picks
- get the number of desired tickets from the input box
- make a loop that
- make a new array that will hold the whiteball numbers from 1-69
- run a loop that iterates 69 times and pushes the numbers 1-69 into the array
- run another loop that iterates as many times as there are tickets to make
- this loop makes numbered ticket divs
- an inner loop picks 5 whiteball numbers from the array of numbers from 1-69
- each whiteball number chosen is removed from the array of numbers from 1-69 so that it cannot be chosen again
- the 5 whiteball numbers are sorted and then added as the text of ping-pong balls into the ticket div
- the powerball number form 1-26 is chosen
- the powerball number is added on a red ball to the ticket div
- the loop repeats until the desired number of tickets is made

6. Define the **generateTickets()** function and have it start by clearing the tickets div for a fresh load:

```
    function generateTickets() {
        ticketsDiv.innerHTML = ''; // clear
    }
```

7. Next, get the desired number of tickets from the input box:

```
        let numTix = numBox.value; // get user input
```

8. Declare an array to hold the whiteball numbers from 1-69:

```
        const whiteballNums = [];
```

9. Run a loop from 1 to 69, pushing **i** into the array each time:

```
        for(let i = 0; i < 69; i++) {
            whiteballNums.push(i);
        }
```

10. Log the array to make sure it worked:

```
    console.log('whiteballNums', whiteballNums);
```

Next, run another loop, this one going from from 1 to the total number of desired tickets. This will make a numbered but otherwise blank ticket (no lottery numbers, no ping-pong balls--yet). Each time though the loop:

- make a new div for one ticket
- add the class name to the div; the css already exists
- number the ticket with **i**, the loop counter
- append the ticket div to the wrapper

11. Set up the loop, which runs from 1 to the total number of ticket requested:

```
    for(let i = 1; i <= numTix; i++) {
    }
```

12. We need a fresh set of numbers to choose from for each ticket, so copy the array of numbers from 1-69:

```
    let whiteNums = whiteballNums.slice(0);
```

13. Make a div to hold a ticket and assign it its class:

```
    let ticketDiv = document.createElement('div');
    ticketDiv.className = 'ticket-div';
```

14. Number the ticket box. The first ticket is **#1**, etc.:

```
    ticketDiv.innerHTML = '<span>' + i + '</span>';
```

15. Output the numbered but otherwise empty **ticketDiv** to the parent **ticketsHolder** div:

```
        ticketsDiv.appendChild(ticketDiv);
```

16. Declare a new empty array to hold the lottery number for the ticket:

```
        let oneTicketArr = [];
```

17. Run a loop that goes five times:

```
        for(let j = 0; j < 5; j++) {
        }
```

18. Each time through the loop, generate a random integer in the range of the array of whiteball numbers:

```
        let r = Math.floor(Math.random() * whiteNums.length);
```

19. Pick the number at the random index and stringify it by tacking on an empty space. We do this so for consistency, so that all the picks are strings. Otherwise only the picks less than 10 with leading 0's added would be strings--the 2-digit picks would all be numbers.

20. Still in the loop, if the pick only has one character, its from 1-9, so add a leading zeroes:

```
            if(pick.length == 1) {
                pick = '0' + pick; // add leading 0
            }
```

21. Push the pick, which is a 2-character "number", into the array:

```
                oneTicketArr.push(pick);
```

22. Splice the just-picked number out of the array of choices so that it cannot be chosen again for this same ticket. Then close the inner loop:

```
                whiteNums.splice(r, 1);

            } // close inner loop
```

23. Still in the outer loop, sort the five stringy numbers that make up a single lottery ticket:

```
       oneTicketArr.sort();
```

24. Still in the outer loop, make another inner loop that runs 5 times:

```
        for(let j = 0; j < 5; j++) {
        }
```

25. Each time through the loop, make a div and assign it its class. The 'ping-pong-ball' class uses border radius to round the div into a circle: each with a lottery number on it:

```
            let pingPongBall = document.createElement('div');
            pingPongBall.className = 'ping-pong-ball';
```

26. "Label" the "ping-pong ball" with a lottery pick number from the array of 5 whiteball numbers:

```
            pingPongBall.textContent = oneTicketArr[j];
```

27. Output the "ping-pong ball" with lottery number on it to the ticket div:

```
            ticketDiv.appendChild(pingPongBall);
```

28. Generate the random Powerball number from 1-26:

```
            let powerballNum = Math.ceil(Math.random() * 26);
```

29. Stringify the Powerball number so that its data type matches the 5 whiteball numbers--all strings:

```
            powerballNum += '';
```

30. If the Powerball number is single digit (just one character long), add a leading 0:

```
            if(powerballNum.length == 1) {
                powerballNum = '0' + powerballNum;
            }
```

31. Add the Powerball number to the **oneTicketArr** to complete the array of 6 lotter numbers for one ticket::

```
            oneTicketArr.push(powerballNum);
```

// 32. Make another circular div, a red ping-pong ball to hold the Powerball (in the css, there's a .ping-pong-ball:last-child rule that makes the last ball red):

```
            let powerballDiv = document.createElement('div');
            powerballDiv.className = 'ping-pong-ball';
```

33. Label the red Powerball ping-pong ball with the Powerball number:

```
            powerballDiv.textContent = powerballNum;
```

34. Output the red Powerball ping-pong ball to the ticket div:

```
            ticketDiv.appendChild(powerballDiv);
```

35. Close the big outer loop; close the generateTickets() function and reload the browser. The Lotter Ticket Generator application should work.

- **END: Lesson 06.07**
- **NEXT: Lesson 07.01**