

JavaScript assignment

by Katarzyna Pindel

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JavaScript-enabled website



Katarzyna Pindel

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Introduction

The JavaScript, in the designed website, was implemented to add a functionality and interaction with the user. But what is the JavaScript? JavaScript is a scripting programming language, created in the 90s by Brendan Eich and Netscape and used on websites. The scripts themselves are responsible for improving interactivity by responding to events, checking forms, scripting various effects, calculations, dynamic data loading, etc.

1. Websites pages

1.1 Guess the Picture Game

First website content that is using JavaScript is Guess the Picture Game. There are 4 images that are showing in random order. User has to type in the answer in the Make a Guess window and submit the answer through Submit button. There are different alerts popping up on the screen depending on the right or wrong answer (after each user is losing 1 life out of 3 allowed). There is also, an alert when the user gave all 3 wrong answers and the Game Over picture appears on screen. When the user wins the alert is displaying after how many guesses user won the game.



Can you guess the picture?

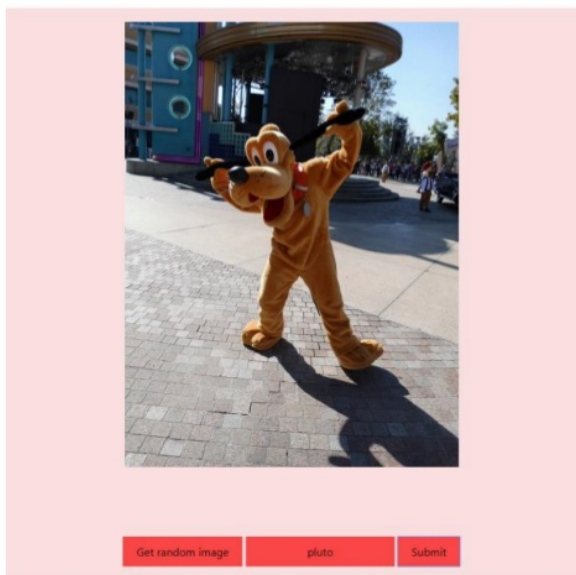
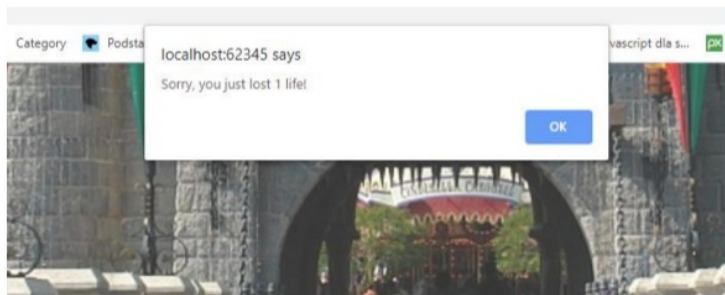


Figure 1-Alert after 1 good guess.



Can you guess the picture?

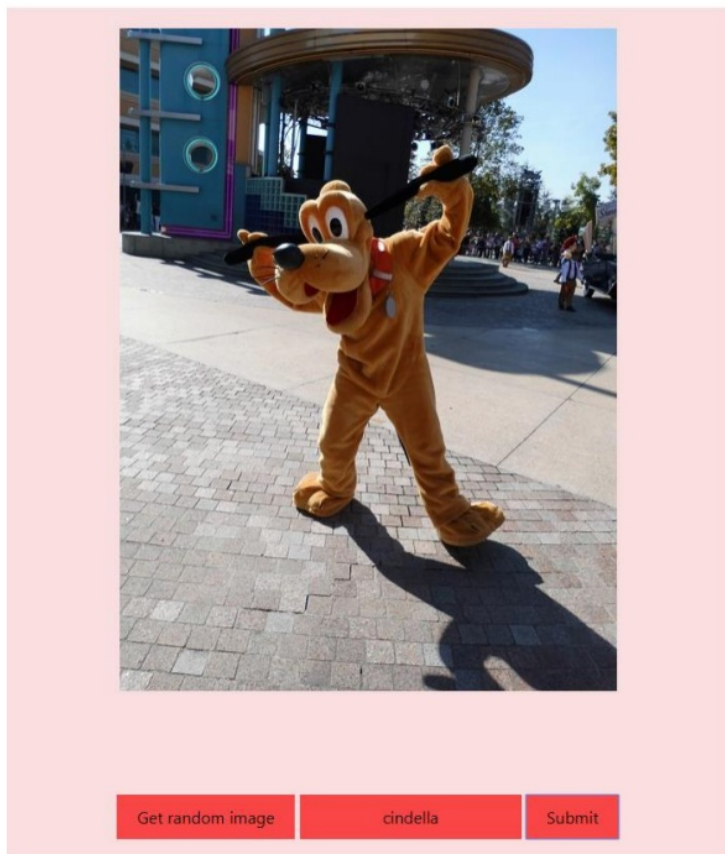
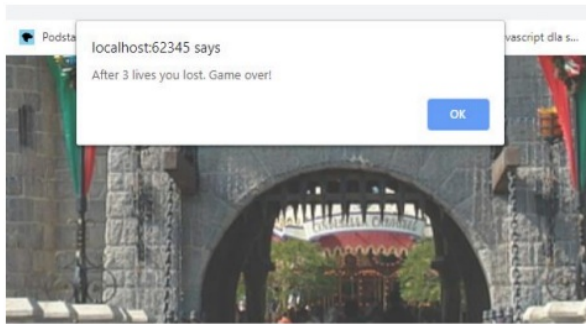


Figure 2- Alert after 1 wrong guess.



Can you guess the picture?

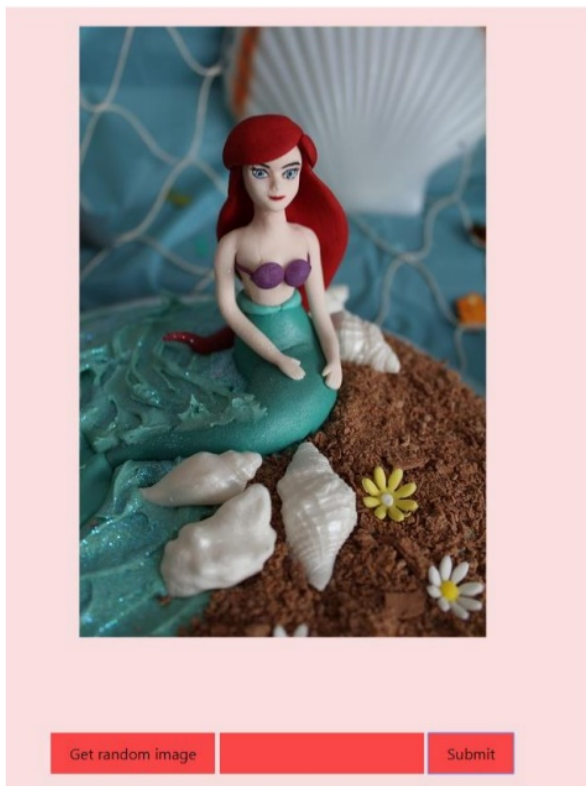


Figure 3- Alert after 3 wrong guesses.



Can you guess the picture?



Figure 4- Game over picture after 3 wrong guesses.

1.2 Multiple choice quiz

A quiz has been constructed to contain 6 question, each has 4 options and only 1 can be selected. If the answer is not selected an alert is being displayed requesting to choose an answer. "Next" button must be pressed to continue to the next question. After all answered questions a result box is being displayed with the total users score.

TAKE THE QUIZ

1.Who created theme park Disneyland ?

☐ Lech Wałęsa

☐ Albert Einstein

☐ Walt Disney

☐ Coco Chanel

Next Question

Figure 5- Multiple-choice quiz with one option to be selected

TAKE THE QUIZ

2.What year did Disneyland open?

1943

1955

2000

1984

Next Question

Figure 6- Another question in the multiple-choice quiz with one option to be selected

Your score is: 20

Figure 7-Window with total score in multiple-choice quiz

1.3 Image slideshow

The image slideshow is displaying 4 different images every 3 seconds.

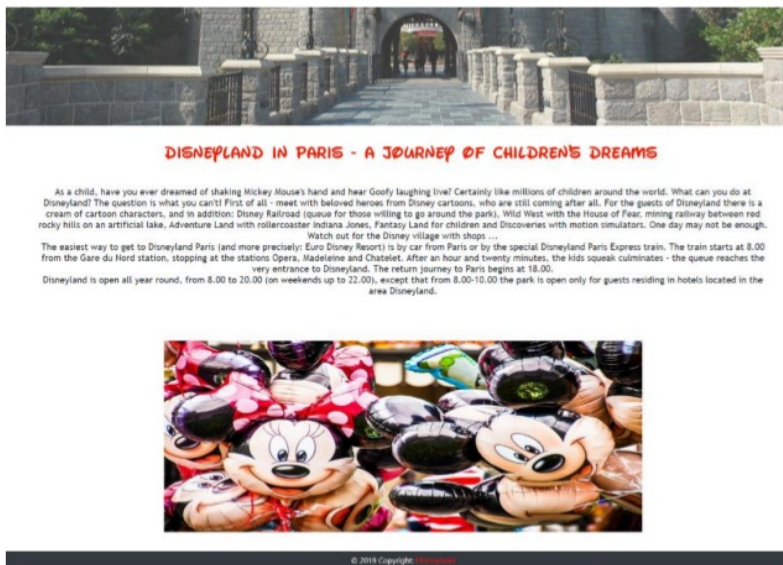


Figure 8- An image of the slideshow



DISNEYLAND IN PARIS - A JOURNEY OF CHILDREN'S DREAMS

As a child, have you ever dreamed of shaking Mickey Mouse's hand and hear Goofy laughing live? Certainly like millions of children around the world. What can you do at Disneyland? The question is what you can't! First of all - meet with beloved heroes from Disney cartoons, who are still coming after all. For the guests of Disneyland there is a cream of cartoon characters, and in addition: Disney Railroad (queue for those willing to go around the park), Wild West with the House of Fear, mining railway between red rocky hills on an artificial lake, Adventure Land with rollercoaster Indiana Jones, Fantasy Land for children and Discoveries with motion simulators. One day may not be enough. Watch out for the Disney village with shops ... The easiest way to get to Disneyland Paris (and more precisely: Euro Disney Resort) is by car from Paris or by the special Disneyland Paris Express train. The train starts at 8.00 from the Gare du Nord station, stopping at the stations Opera, Madeleine and Chatelet. After an hour and twenty minutes, the kids squeak culminates - the queue reaches the very entrance to Disneyland. The return journey to Paris begins at 18.00. Disneyland is open all year round, from 8.00 to 20.00 (on weekends up to 22.00), except that from 8.00-10.00 the park is open only for guests residing in hotels located in the area Disneyland.



Figure 9-An image of the slideshow



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Figure 10-An image of the slideshow



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Figure 11-An image of the slideshow

2. Methodology and approach taken

2.1 Guess the Picture game

To design discussing JavaScript Guess the Picture game first of all an array was created to store and for easier access to all image's values with their url sources and alt names for later comparison with the users input and easier access to the list of items. There are a number of JavaScript functions used to create a desired game effect. The list of functions contains:

- `showImage` - it is a `onClick` function for getting random image button. If the user doesn't not know the image and decides to change the image(by pressing the button) it will show another random picture by executing `DisplayRandomPicture()` function, it will decrement life by 1 and display an alert for it executing `showError()` function. Also, function will increment number of guesses,
- `DisplayRandomPicture()` - this function displays random picture using `random()` method [1] and assigning random image source and alt to the image element using `getElementById()` method,
- `check()` - `onClick` function for Submit button that is checking the answer by accessing guess element value and comparing it to the image alt. If it is not the same as alt name it will display another function called `showError()` (mentioned above). Function also checking if the number of guesses is larger than number of lives, if it is then it will execute `lost()` function, and if anything else `showWin()` function,
- `showWin()` - function that is incrementing number of guesses and an alert when user guesses the picture name;
- `lost()` - function that is showing an alert and display game over image(another but not random image from the array) when user give all wrong answers,

- deleteText() - it is a onClick function that is deleting previous text in Guess the picture button.

2.2 HOW MUCH YOU KNOW ABOUT DISNEYLAND QUIZ

To design a quiz an array with all question's values was created. An array holds 6 different questions with their answer options (always 4) and actual answers (number of answer option). There are 2 functions used:

- loadQuestion(questionIndex) - function that load the question from the questions index. It is assigning text content for question element with its number and question from the array at a particular index and assigning text for options element,
- dispIingNextQuestion()- it is a onClick function that is loading next question when the user pressed Next question button. Function is checking if the option (radio button) is selected (checked) using document.querySelector method. If is not selected, it will display an alert to select an option. It also checks if the value of selected option(answer) is the same as the array of questions, question index,if yes it will add 10 point to the score. Ones the question is selected it is incrementing the current question number. Next, function is checking if the question is the last question, if yes next question button is changing to "Finish" button. The last check that the function is doing is checking if all questions are completed, if yes, the questions are being hidden and the score window with users total score are being displayed.

2.3 Image slideshow

To design a slideshow an array with images source and their alt names was created. Time between switching images was set and function changelmg() was formed to change the images. The function checks if images index is under maximum, if yes it adds 1 to the index, if not it resets it to 0 and the loop starts again.

3. The JavaScript codes

3.1 Guess the Picture code

```
var images = new Array(); // an array holding all images values

images[0] = new Image();
images[0].src = 'images/ariel.jpg';
images[0].alt = "Ariel";

images[1] = new Image();
images[1].src = 'images/cinderella.png';
images[1].alt = "Cinderella";

images[2] = new Image();
images[2].src = 'images/pluto.jpg';
images[2].alt = "Pluto";

images[3] = new Image();
images[3].src = 'images/elsa.jpg';
```

```

images[3].alt = "Elsa";

images[4] = new Image();
images[4].src = 'images/game-over.jpg';
images[4].alt = "Game-over";

function showImage() {
    showError();
    DisplayRandomPicture();
}

function DisplayRandomPicture() {
    var randomPictureNumber = Math.floor(Math.random() * 4); //assigning random
    picture

    var randomImg = images[randomPictureNumber].src; //random image from an array of
    images by their source
    var randomAlt = images[randomPictureNumber].alt; //random image from an array of
    images by their alt

    document.getElementById("imageBox").src = randomImg; //assigning random image src
    to the image element
    document.getElementById("imageBox").alt = randomAlt; //assigning random image alt
    to the image element
}

window.onload = DisplayRandomPicture(); //first image appears when the page is loaded
var startingNumberOfGuesses = 0; //index of the current number of guesses
var numberOfLives = 3;

function check() { //function that checks the answer
    var guess = document.getElementById('guess').value; //accessing guess element
    value
    document.getElementById("imageBox").alt = randomAlt;

    if (startingNumberOfGuesses >= numberOfLives) { // checking if the number of
    guesses is larger than number of lives
        lost();
    } else {
        if (guess.toLowerCase() != randomAlt.toLowerCase()) { //checking if guess is
        not the same as image alt
            showError();
        }
        else {
            showWin();
        }
    }
}

}

function showWin() { //function when user gusses the picture name
    startingNumberOfGuesses++;
    alert('You won with : ' + startingNumberOfGuesses + ' guess!');
}

function lost() { //function when user give all wrong answers
    alert('After 3 lives you lost. Game over!');
    var gameOverImage = images[4].src;
    document.getElementById("imageBox").src = gameOverImage; //accessing image by its
    source to display a game over image
    document.getElementById('buttons').style.visibility = 'hidden'; //accessing all
    buttons an making them hidden

```

```

}

function showError() { //function that shows an error when user gives the wrong answer
    startingNumberOfGuesses++;
    numberOfLives--;
    alert('Sorry, you just lost 1 life!');
}

function deleteText() { //function that is deleting previous text in guess the picture
    button
        document.getElementById('guess').value = "";
}

```

3.2 The Quiz code

```

var questions = [{ // an array holding all question values
    "question": "Who created theme park Disneyland ?",
    "option1": "Lech Wałęsa",
    "option2": "Albert Einstein",
    "option3": "Walt Disney",
    "option4": "Coco Chanel",
    "answer": "3"
},
{
    "question": "What year did Disneyland open?",
    "option1": "1943",
    "option2": "1955",
    "option3": "2000",
    "option4": "1984",
    "answer": "2"
},
{
    "question": "In what year Mickey Mouse was created?",
    "option1": "1928",
    "option2": "1933",
    "option3": "1953",
    "option4": "1948",
    "answer": "1"
},
{
    "question": "What reward did Disney get for his work?",
    "option1": "No reward",
    "option2": "Grammy",
    "option3": "Nobel",
    "option4": "Oscar",
    "answer": "4"
},
{
    "question": "Where was the first Disneyland created?",
    "option1": "Cardiff",
    "option2": "California",
    "option3": "London",
    "option4": "Amsterdam",
    "answer": "2"
},
{
    "question": "What was the first Disney movie ever made?",
    "option1": "Frozen",
    "option2": "Toy Story4",
    "option3": "Cinderella",

```

```

        "option4": "Snow White and the Seven Dwarfs",
        "answer": "4"
    }
]

var currentQuestion = 0; //index of the current question
var score = 0;
var totalQuestions = questions.length; //questions count taken from the array of
questions
var container = document.getElementById("quizContainer"); //accessing quiz container
var questionElement = document.getElementById("quizQuestion"); //accessing all the
question elements
var option1 = document.getElementById("opt1"); //accessing all question options
elements
var option2 = document.getElementById("opt2");
var option3 = document.getElementById("opt3");
var option4 = document.getElementById("opt4");

var nextButton = document.getElementById("nextButton"); //accessing next button
var resultBox = document.getElementById("resultButton"); //accessing result
button/container

function loadQuestion(questionIndex){ //function that load the question from the
question index
    var q = questions[questionIndex];
    questionElement.textContent = (questionIndex + 1) + "." + q.question; //assigning
text for question element with its number and question from the array at a particular
index
    option1.textContent = q.option1; //assigning text for options element
    option2.textContent = q.option2;
    option3.textContent = q.option3;
    option4.textContent = q.option4;
};

function displingNextQuestion() { //function that is loading next question
    var selectedOption = document.querySelector('input[type=radio]:checked'); //if the
option(radio button) is selected
    if (!selectedOption) { // if not selected-displaying alert
        alert("Please select your answer!");
        return;
    }
    var answer = selectedOption.value;
    if (questions[currentQuestion].answer == answer) { //comparing the value of
selected option(answer) with the array of questions, question index
        score += 10; //adding 10 point to the score
    }
    selectedOption.checked = false; // option is selected
    currentQuestion++; // incrementing the current question number
    if (currentQuestion == totalQuestions - 1) { //checking if it is the last question
        nextButton.textContent = "Finish"; //if last question next button is changing
to "Finish" button
    }
    if (currentQuestion == totalQuestions) { //checking if all questions are completed
        container.style.display = 'none'; //container is hidden
        resultBox.style.display = ""; // "result" container shows up
        resultBox.textContent = "Your score is: " + score; //Displaying the total
score
        return;
    }
    loadQuestion(currentQuestion); //in any other case it is loading next question
from the questions index
}

```

```
}  
loadQuestion(currentQuestion); //first question is called when the page is loaded
```

3.3 Image slideshow code

```
var i = 0; // Start Point  
var images = []; // Images Array  
var time = 3000; // Time Between Switch  
  
// Image List  
images[0] = "http://localhost:62345/images/mickey.jpg";  
images[0].alt = "Mickey balloons";  
  
images[1] = "http://localhost:62345/images/donald.jpg";  
images[1].alt = "Donald Duck"  
  
images[2] = "http://localhost:62345/images/castle.jpg";  
images[2].alt = "Disneyland castle at night"  
  
images[3] = "http://localhost:62345/images/mickymouse.jpg";  
images[3].alt = "Mickey Mouse"  
  
function changeImg() { // Change Image  
    document.slideshow.src = images[i];  
  
    if (i < images.length - 1) { // Check If Index Is Under Max  
        i++; // Add 1 to Index  
    } else {  
        i = 0; // Reset Back To 0  
    }  
  
    setTimeout("changeImg()", time); // Run function every x seconds  
}  
window.onload = changeImg; // Run function when page loads
```

Bibliography

- [1] w3schools.com, "JavaScript random() Method," [Online]. Available:
https://www.w3schools.com/jsref/jsref_random.asp.

JavaScript assignment

GRADEMARK REPORT

FINAL GRADE

60/100

GENERAL COMMENTS

Instructor

Range of coding - Quiz is good, some nice visual feedback to the use (mouseovers)

The games is a bit strange in its usability - firstly I have to keep scrolling to the bottom (might be a resolution issue) I like the use of the random,, but I keep losing a life by clicking the random button. The code doesn't seem to provide a random image for the second go. You should also stop it randomly selecting the same image twice in a row.

The slideshow images are not working because you've hardcoded them to your own localhost - use a relative path instead. I would not recommend using setTimeout within a function without having a clearTimeout, otherwise it is a recursive call which will put strain on the browser eventually. You only need to call setTimeout once. Also you may want to think about pre-loading the images.

37/60

Overall integration of website - Layout is a bit basic, the text on the banner seems to "move" as you click between pages. Make it a consistent look. 5.5 /10

Analysis of technical development -

You've detailed what you did, but I would have liked more on WHY you did it this way - there is often more than one approach you can take. Analyse your code critically and state whether it is efficient, what you would do differently next time, and so on. 8/15

Annotated code listing(s) - A reasonable attempt, but in some cases it's not all that easy to follow. For example "Images Array" - this is obvious from the code, but what images will it hold? You could write something like "Array to hold information about images to be used for slideshow" this would be much more meaningful to another programmer. A similar thing "Check if index is under max" - why?

9/15

Total: 59.5%

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