CS 412 - JavaScript Exercises

Spring, 2020

Write a script that prompts the user to enter an odd number from 1 to 15, then outputs HTML5 text that displays the product of all odd numbers from 1 to the number entered. For example, if the user enters a 7, the product would be 1 \* 3 \* 5 \* 7 or 105. (Multiply\_It)

A company wants to transmit data over a network, but they are concerned that the link may be tapped. All of its data is transmitted as four-digit integers. It has asked you to write a program that will encrypt its data so that the data may be transmitted more securely. Your script should read a four-digit integer entered by the user in a *prompt* dialog and encrypt it as follows: Replace each digit *by (the sum of that digit plus 7) modulus 10*. Then swap the first digit with the third digit, and swap the second digit with the fourth. Then output html5 text that displays the encrypted integer. (Code\_It)

Write a script that reads five numbers between 1 and 30. For each number read, output HTML5 text that displays a line containing the same number of adjacent asterisks. For example, if your program reads the number 5, it should output HTML5 text that displays \*\*\*\*\*. (Seeing\_Stars)

Write a function that inputs a student’s average and returns an A if the student’s average is 90 – 100, a B if the average is 80-89, a C if the average is 70-79, a D if the average is 60-69, and an F if the average is below 60. Incorporate the function in a script that reads values one at a time from the user until the user enters a -1 as a sentinel value. After the sentinel value is entered, display the number of A, B, C, D, and F grades. (Grade\_Them)

Write a script to simulate the rolling of two dice. The script should use Math.random to roll the first die and again to roll the second die. The sum of the two values should then be calculated. Since each die can show an integer value from 1 to 6, the sum of the values will vary from 2 to 12, with 7 being the most frequent sum, and 2 and 12 the least frequent sums. There are 36 possible combinations. Your program should prompt for the number of times to roll the dice, but should be a minimum of 10,000 times. Use a one dimensional array to tally the number of times each sum appears. Display the results in an HTML5 table. (Die\_Total)

This exercise is similar to the previous exercise, but with some substantial differences. Write a script to simulate the rolling of two dice. The script should use Math.random to roll the first die and again to roll the second die. The two die make an ordered pair with the first die representing the row number and the second die representing the column number. Since each die can show an integer value from 1 to 6, the resulting table should have row values from 1 to 6 and the column values from 1 to 6. There are 36 possible combinations. Your program should prompt the user for the number of times to roll the dice, but should be a minimum of 10,000 times. Use a two dimensional array to tally the number of times each combination appears. Display the results in an HTML5 table. (Die\_Combination)