

CS5002

Programming Principles and Practice

Assignment 2: Algorithms

REPORT FOR JAVASCRIPT

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Task 1:

Firstly, I determined the running records variable for both women and men and false start variable in terms of time. I indicated that in category variable can be either women's or men's, and since zero is the smallest number for starting to run, running time variable starts from zero minutes.

The function named `getValue` starts running when the user clicks on the button named "Click Me" under the title of "Click the following button to see your result" in order to learn whether s/he won the world record in his or her category. After clicking on the button, prompt command provides a new window which user can enter an input and asks the category by relating itself to category variable. For the category variable, the input should consist of letters and user should write whether "women's" or "men's" to indicate his or her sex. In order to ease entering the input for users, the system changes the upper case into lowercase. By this way if the user enters "Women's or Men's", the system will acknowledge the words by reading them as defined inputs with lowercase. However, if the user does not enter the input as "Women's, women's, Men's or men's", the system gives an alert by showing a pop-up window and says "You didn't enter a valid input. Please enter your category." Prompt command again shows a window including an empty box and asks the user's running time in numbers. While the input for running time matches with the conditions (input for running time shouldn't be null, leaving the box empty and entering to skip is not allowed, and the entered number for running-time cannot be smaller than 0), the browser does not accept the input and asks to reenter it, and all of the statements are same for the reaction time.

If and else stand for giving commands in different conditions. By using Boolean expression, the system understands whether the conditions are met or not, if not, it skips to other conditions and checks if the conditions are met. According to this aspect, if the conditions are met, they are associated to an alert command which opens a pop-up window and telling whether user has broken the world record in his or her category. If the user ran faster than the record holder in women's category and reacted after 0.1 seconds, the alert says, "You broke the women's world record", and this is also the same for a man who ran in men's category.

However, if the user's running time is higher than the record holder in the same category or the user's reaction time is smaller than the false starting time (0.1), the alert tells that the user cannot break the world record in his or her category.

Task 2:

Firstly, I put all of the letters in alphabet and defined them as variable x. If user writes a sentence which include all of the letters from the alphabet (user writes a sentence with 26 different letter), the system gives an alert as 'Pangram', otherwise it gives an alert as 'Not Pangram'. Moreover, the user input is not capital sensitive, if the user enters the input with higher case, the system changes them into lowercase and accepts the input. The range for the number of letters is from 0 to 26, and it increases one by one. If the number of different letters in the user's input is lower than 26, the system analyses as not a pangram.

Task 3:

In order to design and implement a lottery game, firstly, I defined the random number as a variable number. Since the user should enter three numbers, our random number should be three as well (the length of user's input should be equal to length of random numbers). Therefore, I assigned 3 to length of array including random numbers, and entered the number range from 1 to 40 (I entered 41 rather than 40 and added 1 because the system does not include the entered number, but it start from 0 which the lottery does not include).

GetLottoNumbers function starts running when the user opens the browser and clicks on the button (Click Me) under the sentence of "Click the following button to see the lottery results:". After clicking on the button, prompt command provides a new window which user can enter an input and asks the user's first number between 1 and 40, and it analyzes the answer as value for the lotto1 variable. The other two rows and commands do the same for lotto2 and lotto3. By using 'while' we gi

ve a condition for the input entered by the user; when the user leaves the box for input for lotto1 variable empty or enter a null input or smaller than 1 or bigger than 40 or not a number, the system does not accept the input and asks to reenter it, and all the statements are same for the lotto2 and lotto3.

If and else stand for giving commands in different conditions. By using Boolean expression, the system understands whether the conditions are met or not, if not, it skips to other conditions and checks if the conditions are met. According to this aspect, if the conditions are met, they are associated to an alert command which opens a pop-up window and telling whether user won the 1st, 2nd or 3rd prize. If the user guesses 1 number correctly the alert says "Congratulations, you won the 3rd prize! The lottery numbers were: ", if the user guesses 2 numbers correctly the alert says "Congratulations, you won the 2nd prize! The lottery numbers were: ", if the user guesses all numbers correctly the alert says "Congratulations, you won the 1st prize! The lottery numbers were: ". If the user guess all of the numbers wrong, the alert says "Sorry, you did not win this game. The lottery numbers were:".

In this task, implementing a user's input range gave error even I tried several times with different types.