

Quiz Application For 'math-eight'

Requirements

1. There will a array of JSON objects.

JSON Objects take the form:

```
{  
  "sno": "1",  
  "ques": `For the pattern /truman/gm : which records from the above data will be  
referenced?`,  
  "section": ["Regex"],  
  "options": ['2233', '9876', '5678', '2365', '5423', '1006', '6213', '1265', '4290', '2476',  
'6521', '3212', '3564', '2345', '0110'],  
  "ans": ["0110"],  
  "qtype": "mcq"  
}
```

2. We need to present these questions in either of the one way:

2.1. Random order

2.2. Original order (as appearing in the input array)

3. Two ways to present the options:

3.1. Original order (as appearing in input)

3.2. Shuffled order

Types of Questions

1. Single Choice Correct
2. Multiple Choice Correct
3. Exact Answer Type

Out of these, SCQ and MCQ we already did in Knockout but Exact Answer Type is completely new.

SCQ (JSON)

```
{  
  "sno": "1",  
  "ques": "Which of these is not a data type in JavaScript?",  
  "section": ["Data Types"],  
  "options": ['String', 'Floating Point Number', 'Array', 'Boolean'],  
  "ans": "Floating Point Number",  
  "qtype": "scq"  
}
```

SCQ (UI)

Question (1)

Which of these is not a way to declare a JavaScript variable?

- ☐ `var carName = 'Volvo'`
- ☐ `const carName = 'Volvo'`
- ☐ `def carName = 'Volvo'`
- ☐ `let carName = 'Volvo'`

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MCQ (JSON)

```
{  
  "sno": "3",  
  "ques": "Which of these expressions return true?",  
  "section": ["Data Types"],  
  "options": ['5 == 5.0',  
    'new String("John") == "John"',  
    'new String("John") == new String("John")',  
    'parseInt("5") === parseFloat("5.0")'  
  ],  
  "ans": [  
    '5 == 5.0',  
    'new String("John") == "John"',  
    'parseInt("5") === parseFloat("5.0")'  
  ],  
  "qtype": "mcq"  
}
```


MCQ (UI)

Question (2)

Which of these expressions return true?

- ☐ `parseInt("5") === parseFloat("5.0")`
- ☐ `new String("John") == new String("John")`
- ☐ `5 == 5.0`
- ☐ `new String("John") == "John"`

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Exact Answer Type (UI: Khan Academy)

Isaac's favorite cereal is running a promotion that says 1-in-4 boxes of the cereal contains a prize. Suppose that Isaac is going to buy 6 boxes of this cereal, and let X represent the number of prizes he wins in these boxes. Assume that these boxes represent a random sample, and assume that prizes are independent between boxes.

What is the probability that he wins exactly 2 prizes in the 6 boxes?

You may round your answer to the nearest hundredth.

$P(X = 2) =$

Your answer should be an exact decimal like: 0.74

Or a proper fraction like: 5/9

Or an improper fraction like: 12/7

Or an integer like: 33

Ref: <https://www.khanacademy.org/math/statistics-probability/random-variables-stats-library/binomial-random-variables/e/calculating-binomial-probability>

Exact Answer Type (UI: w3schools)

Create a variable called `carName` , assign the value `Volvo` to it.

```
let  = "";
```

https://www.w3schools.com/js/exercise_js.asp?filename=exercise_js_variables1

Sample Application for Reference

This application is built using Knockout.
We need to code it in React.

<http://survival8.blogspot.com/2023/10/20-quiz-questions-for-javascript.html>

GitHub Link:

[https://github.com/ashishjain1547/knockoutjs/tree/main/27_quiz%20App%20to%20test%20and%20help%20students%20prepare/2023%2010%2003%20\(view%20performance%20report\)](https://github.com/ashishjain1547/knockoutjs/tree/main/27_quiz%20App%20to%20test%20and%20help%20students%20prepare/2023%2010%2003%20(view%20performance%20report))

Arrays that I am maintaining in Knockout Code

1. questionsYetToAsk

After you are shuffling the questions, I am maintaining two lists of questions (one for asked and one for yet-to-ask). This list of questions yet to ask.

2. questionsAsked

This list contains the questions (their 'sno' to be specific) to track the questions that have been presented to the user.

3. savedAnswers

To capture the SCQ answer as is and the MCQ answer as `JSON.stringify()`
If user skips a question, I put `""` or `[]` in the `savedAnswers` array.

Note: These two arrays (`questionsAsked` and `savedAnswers`) are a way for me to save user history.

Methods for updating view in Knockout Code

1. `getQuestion()`

Gives you a random question from the available questions.

2. `showQuestion()`

Whatever question is picked from `getQuestion()`, this method displays that question on screen. At the end of this method, I clear the answers (like `scqAnswer()` and `mcqAnswers()`) from current question.

3. `showPreviousQuestion()`

It operates on a variable called '`custom_qno`', which it decreases in order to load the previous question and (selected) answer.

The arrays that I refer in this method are: `questionsAsked` and `savedAnswers`.

To access previously attempted question / answer, I use `custom_qno` as a way to index.