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Extending the Exerquiz Package
Text Fill-in Questions

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1. Text Fill-in Questions

Exerquiz can now create text fill-in questions, questions in which the response is text (as opposed to a mathematical expression). The underlying JavaScript compares the user's response against acceptable alternatives, as supplied by the author of the question. If there is a match, the response is deemed correct. For example:

▶ Who was the first President[1]?

The command \RespBoxTxt is the one that creates a text fill-in question. Its syntax is

\RespBoxTxt[#1]#2#3[#4]#5<plus listing of alternatives>

Parameters:

#1: Optional parameter used to modify the appearance of the text field.

#2: This required parameter is a number that indicates the filtering method to be used. Permissible values of this parameter are

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[1] of the United States

- -1: (The default) The author's and user's answers are not filtered in any way. (Spaces, case, and punctuation are preserved.)
  - 0: The author's and user's answers are converted to lower case, any white space and non-word characters are removed.
  - 1: The author's and user's answers are converted to lower case, any white space is removed.
  - 2: The author's and user's answers are stripped of white space.

  See the JavaScript function `eqFilter` in `exerquiz.dtx` for program code details. Additional filtering options may be added.

- #3: This parameter is a number that indicates the compare method to be used. Permissible values of this parameter are
  - 0: (The default) The author's and user's answers are compared for an exact match. (These answers are filtered before they are compared.)
  - 1: The user's response is searched in an attempt to get a substring match with the author's alternatives. Additional comparison methods may be added.

See the JavaScript function `compareTxt` in `exerquiz.dtx` for the program code details.

#4: Optional, a named destination to the solution to the question. If this parameter appears, then a solution must follow the question, enclosed in a `solution` environment. If the forth parameter is a '`*`', then an automatic naming scheme is used instead.

#5: This required parameter is the number of alternative answers that are acceptable. The alternative answers are listed immediately after this parameter. (The example above specified that 4 alternatives follow.)

The following series of examples illustrate different combinations parameters #2 and #3. All questions are in response to the question "Who was the first president of the United States?"

1. Remove all white space and non-word characters, convert to lower case, then look for a match. Of course, "George Washington" and "G. Washington" are correct, but so too are "georgewashington"and "gwashington".

2. Remove all white space, convert to lower case, then look for an exact match. Here we don't remove non-word characters, such as punctuation. For example, answers "G. Washington", "georgewashington" and "g. washington" are correct, but "gwashington" is not.

3. Remove all white space, then look for an exact match. (Here, we do not remove punctuation and do not convert to lower case.) The response "G. Washington" is correct, but "g. washington" is not.

4. Now lets put parameter #3 equal to 1. Here, we convert to lower case, remove white space, and look for a substring match. Note that "President Washington", "General Geo. Washington", and "Washington, George" are correct. Also "Fred Washington" is correct, since it matches the second alternative, Washington. (If we eliminate Washington as an alternative, then "Fred Washington" would be judged incorrect, let's test that theory:

2. Short Quiz Environment

Quiz Answer each of the following. Passing is 100%.

1. Who was the first president of the United States?

2. Name *one* of the two people recognized as a founder of Calculus.

3. If f is differentiable, then f is continuous.

      True   False

4. $\dfrac{\mathrm{d}}{\mathrm{d}x} 4x^{-1/2} =$

5. $\displaystyle\int \frac{1}{x}\, dx =$

3. Quiz Environment

Here is a mixture of all types of questions, all with solutions.

Answer each of the following. Passing is 100%.

1. If $\lim_{x \to a} f(x) = f(a)$, then we say that f is...

    differentiable   continuous   integrable

2. Name *one* of the two people recognized as a founder of Calculus.

3. $\cos(\pi) =$

4. $\displaystyle\int \sin(x)\, dx =$

Answers:

Solutions to Quizzes

Solution to Quiz: Yes, George Washington was the first President of the United States of America. ∎

Solution to Quiz: A function f is said to be continuous at $x = a$ if $x \in \mathrm{Dom}(f)$, $\lim_{x \to a} f(x)$ exists and $\lim_{x \to a} f(x) = f(a)$. ■

Solution to Quiz: Isaac Newton and Gottfried Leibniz are the co-creators of Calculus. ■

Solution to Quiz: Oh, come on now. You know that $\cos(\pi) = -1$.

■

Solution to Quiz:

$$\int \sin(x)\,dx = -\cos(x) + C$$

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