## CodeRunner question type

|               | Fer e              |  |   |                                    |                  | eter n. |  |
|---------------|--------------------|--|---|------------------------------------|------------------|---------|--|
| Marked out of | Fore               | xampie:  |   |                                    |                  |         |  |
| 1.00          | Test               | Resu   | ult   |                                    |                  |         |  |
|               | print              | t(double(3)) 6   |   |                                    |                  |         |  |
|               |                    |  |   |                                    |                  |         |  |
|               | Answ               | er: (penalty regime  | e: 10, 20, %)   |                                    |                  |         |  |
|               | 1 - 2              | def double(n):<br>return n *   | 2   |                                    |                  |         |  |
|               |                    |  |   |                                    |                  |         |  |
|               |                    |  |   |                                    |                  |         |  |
|               |                    |  |   |                                    |                  |         |  |
|               |                    |  |   |                                    |                  |         |  |
|               | Che                | eck  |   |                                    |                  |         |  |
|               | Che                | eck  |   |                                    |                  |         |  |
|               | Che                | eck  |   |                                    |                  |         |  |
|               | Che                | eck<br>Test  | Expected  | Got                                |                  |         |  |
|               | Che                | Test   | Expected  | <b>Got</b>                         | ✓                |         |  |
|               | Che                | Test<br>print(double(3))<br>print(double(-4)   | <b>Expected</b> ) 6   | <b>Got</b><br>6<br>-8              | ✓<br>✓           |         |  |
|               | Che<br>✓<br>✓<br>✓ | <pre>ck Test print(double(3)) print(double(-4) print(double(-4)) </pre>                            | Expected           )         6           ))         -8           )         0                              | <b>Got</b><br>6<br>-8<br>0         | ×<br>×<br>×      |         |  |
|               | Che                | Test       print(double(3))       print(double(-4))       print(double(-0))       print(double(0)) | Expected           )         6           ))         -8           )         0           .5))         21.0  | <b>Got</b><br>6<br>-8<br>0<br>21.0 | ><br>><br>><br>> |         |  |
|               | Che                | <pre>ck Test print(double(3)) print(double(-4) print(double(0)) print(double(10.0))</pre>          | Expected           )         6           ))         -8           ))         0           .5))         21.0 | <b>Got</b><br>6<br>-8<br>0<br>21.0 | ><br>><br>><br>> |         |  |

• 0

An example of CodeRunner question type

#### Overview:

This guide will show you how to create a CodeRunner question type.

#### What to know:

CodeRunner allows students to submit code as answers to various programming questions in different languages. Typically, it works in Core's adaptive quiz mode, where students enter their code for each question and receive immediate feedback on their test results. They can then make corrections and resubmit their code, usually with a minor penalty.

### Table of Contents

Step 1: Access the Quiz activity where you want to create the question
Step 2: Open the 'Questions' tab.
Step 3: Add a new question
Step 4: Choose a question type
Step 5: Choose a 'Question type'
Step 6: Input 'Question name' and 'Question text'
Step 7: Input the 'Test case'
Step 8: Save changes

Step 1: Access the Quiz activity where you want to create the question

In your module area/course, click the link of the Quiz activity where you want to create a new CodeRunner question.

| ∼ Topic 5  |                 |
|--|-----------------|
| Example Quiz                                       | Receive a grade |
| <b>Opened:</b> Wednesday, 8 November 2023, 1:31 PM |                 |
|  |                 |

Note: If an appropriate Quiz activity doesn't exist in your module area/course, please seeAdd a quiz for details of how to create one.

| Step 2: Open the 'Questions' tab. |   |
|-----------------------------------|---|
|                                   | 1 |
|                                   | 1 |

1. Open the 'Questions' tab.

| 🗹 Example Quiz                                       |  |
|--|--|
| Quiz Settings Questions Results Question bank More ~ |  |
| Receive a grade                                      |  |
| <b>Opened:</b> Wednesday, 8 November 2023, 1:31 PM   |  |
| Preview quiz   |  |
| Attempts allowed: 1                                  |  |

| Step 3: Add a new question |  |
|----------------------------|--|
| Step 5. Add a new question |  |
|                            |  |
|                            |  |

- 1. On the following page, click the 'Add' link.
- 2. Click the 'a new question' link in the dropdown menu.

| E                | xam                     | ple Qui        | Z             |                    |               |        |          |                      |            |
|------------------|-------------------------|----------------|---------------|--------------------|---------------|--------|----------|----------------------|------------|
| Quiz Se          | ettings                 | Questions      | Results       | Question bank      | More 🗸        |        |          |                      |            |
| Questions: 1   1 | <b>DNS</b><br>This quiz | is open        |               |                    |               | Maximu | um grade | 100.00               | Save       |
|                  | Select                  | multiple items |               |                    |               |        |          | otal of m<br>□ Shuff | arks: 1.00 |
| Page 1           | 3 🌣 The                 | e Loch Ness Mo | onster is a t | ype of? The Loch N | less Monster( | Always | + a new  | question             | Add 🗸      |
|                  |                         |                |               |                    |               |        | ➡ a rand | dom question ba      | on         |

.....

#### Step 4: Choose a question type

1. Locate and select the CodeRunner question type from the pop-up window.

2. Click the 'Add' button.

| Ch         | 009               | se a question               | type to add ×  |  |
|------------|-------------------|-----------------------------|--|--|
| $\bigcirc$ | 2+2<br>= ?        | Calculated                  |  |  |
| $\bigcirc$ | <u>2+2</u><br>= ? | Calculated<br>multichoice   | CodeRunner: runs student-submitted code in a sandbox |  |
| 0          | 2#2<br>⇒-?        | Calculated simple           |  |  |
| ۲          | Cr                | CodeRunner                  |  |  |
| 0          | •‡•               | Drag and drop into text     |  |  |
| 0          | ÷                 | Drag and drop<br>markers    |  |  |
| 0          | +                 | Drag and drop<br>onto image |  |  |
| 0          | Ŧ,                | Drag-and-Drop<br>Matching   |  |  |
| 0          | ==                | Embedded<br>answers (Cloze) |  |  |
| 0          | 3                 | Essay (auto-grade)          |  |  |
| 0          | t <b>پ</b> 1      | Gapfill                     | -  |  |
|            |                   |                             | Add Cancel   |  |

## Step 5: Choose a 'Question type'

Choose a 'Question type' according to your requirement.

| <ul> <li>CodeRunner ques</li> </ul> | stion typ | e               |   |
|-------------------------------------|-----------|-----------------|---|
| Question type                       | Ø         | python3 🗢       |   |
| Customisation                       | 0         | Undefined       | • |
| Answer box                          | 0         | c_function      | L |
|                                     | Ŭ         | cpp_function    | L |
| Submit buttons                      | 0         | cpp_program     | C |
| Stop button                         | 0         | directed_graph  | Ľ |
| Feedback                            | 0         | java_class      | Ľ |
| reeuback                            | <b>U</b>  | java_program    | L |
| Marking                             | 0         | multilanguage   | Ľ |
| Template params                     | 0         | nodejs          | P |
|                                     |           | pascal_function | L |
|                                     |           | pascal_program  | L |
|                                     |           | php             | н |
| Template param controls             | 0         | python2         | e |
|                                     |           | python3         |   |
| UI parameters                       | 0         | python3_w_input |   |

Then, you can find more details about the question type you choose in the 'Question type details' area.

| <ul> <li>Questi</li> </ul> | ion type details   |
|----------------------------|--|
| CodeRunner q               | question type: python3   |
| A Python3 questio          | on type, which can handle write-a-function, write-a-class or write-a-program question types. For each test case, the student-answer code is executed followed by the test code. Thus, for              |
| example, if the stu        | udent is asked to write a function definition, their definition will be executed first, followed by the author-supplied test code, which will typically call the function and print the result or some |
| value derived from         | n it.  |
| If there are no star       | ndard inputs defined for all test cases, the question actually wraps all the tests into a single run, printing a separator string between each test case output. Please be aware that this isn't       |
| necessarily the san        | me as running each test case separately. For example, if there are any global variables defined by the student code, these will hold their values across the multiple runs. If this is likely to prove |
| problem, the easie         | est work-around is to define one of the test case standard input fields to be a non-empty value - this forces CodeRunner into a fallback mode of running each test case separately.                    |

Step 6: Input 'Question name' and 'Question text'

| ✓ General     |   |  |
|---------------|---|--|
| Category      |   | Default for Chenhui's Test Module (13) 🔹                       |
| Question name | 0 | Double function in python                                      |
| Question text | 0 |  |
|               |   | Write a function double(n) that returns twice its parameter n. |
|               |   |  |
|               |   |  |

|--|

Input Test cases.

You can set the Test case as an example to provide students with a reference.

| Test case 1                                      | <pre>print(double(3))</pre>  |
|--|--|
| Standard Input                                   | 0  |
| Expected output                                  | <b>6</b>   |
| Extra template data                              | 0  |
| Tast properties:                                 |  |
| test properties.                                 | Z Use as example Display Show     Hide rest if fail Mark     1.000     Ordering 10   |
| Test case 2                                      | <ul> <li>Ø Use as example Display Show + Hide rest if fail Mark 1.000 Ordering 10</li> <li>Ø print (double(-4))</li> </ul>   |
| fest case 2<br>Standard Input                    | <ul> <li>Use as example Display show + Hide rest if fail Mark 1.000 Ordering 10</li> <li>print (double(-4))</li> <li>Image: Content of the state of t</li></ul> |
| Test case 2<br>Standard Input                    | • Use as example Display Show             • Hide rest if fail Mark 1.000             Ordering 10                 • print(double(-4))                 • -8  |
| fest case 2<br>Standard Input<br>Expected output | • Use as example Display Show             • Hide rest if fail Mark 1.000             Ordering 10                 • print (double(-4))                 • -8                 • -8  |

# Step 8: Save changes

| Save changes and continue editing <b>Q</b> Preview |
|--|
| Save changes Cancel                                |

|                          | , |
|--------------------------|---|
|                          | i |
| Step 0: Proview and test |   |
| Step 9. Fleview and test | 1 |
|                          |   |
|                          |   |

| ø      |   | 🗌 Shuffle 💡                |
|--------|---|----------------------------|
| Page 1 |   | Add 🐱                      |
| 1      | C 🌣 Double function in python Write a function double(n) that returns twice | Always latest 🗸 🔍 🏛 1.00 🖋 |
|        |   | Add 🗸                      |

| Test                | Res  | ult   |                                    |                  |  |  |
|---------------------|--|---|------------------------------------|------------------|--|--|
| print               | (double(3)) 6  |   |                                    |                  |  |  |
|                     |  |   |                                    |                  |  |  |
| Answ                | er: (penalty regim   | e: 10, 20, %)   |                                    |                  |  |  |
| 1 •                 | <pre>def double(n):</pre>  | 2   |                                    |                  |  |  |
| 2                   | return n *   | 2   |                                    |                  |  |  |
|                     |  |   |                                    |                  |  |  |
|                     |  |   |                                    |                  |  |  |
|                     |  |   |                                    |                  |  |  |
|                     |  |   |                                    |                  |  |  |
| Che                 | ck   |   |                                    |                  |  |  |
| Che                 | ck   |   |                                    |                  |  |  |
| Che                 | ck   |   |                                    |                  |  |  |
| Che                 | ck   |   |                                    |                  |  |  |
| Che                 | ck<br>Test   | Expected  | Got                                |                  |  |  |
| Che                 | Ck<br>Test<br>print(double(3)  | Expected  | <b>Got</b>                         | ✓                |  |  |
| Che                 | Ck<br>Test<br>print(double(3)<br>print(double(-4   | Expected           )         6           ))         -8  | <b>Got</b><br>6<br>-8              | ~<br>~           |  |  |
| Chee<br>~<br>~<br>~ | Ck<br>Test<br>print(double(3)<br>print(double(-4<br>print(double(0)                      | Expected           )         6           ))         -8           )         0                              | <b>Got</b><br>6<br>-8<br>0         | ×<br>×<br>×      |  |  |
| Che                 | Test<br>print(double(3)<br>print(double(-4<br>print(double(0)<br>print(double(10         | Expected           )         6           ))         -8           )         0           .5))         21.0  | <b>Got</b><br>6<br>-8<br>0<br>21.0 | ><br>><br>><br>> |  |  |
| Che<br>Che<br>Che   | Test<br>print(double(3)<br>print(double(-4<br>print(double(0)<br>print(double(10         | Expected           )         6           ))         -8           ))         0           .5))         21.0 | Got<br>6<br>-8<br>0<br>21.0        | ><br>><br>><br>> |  |  |
| Che                 | Ck Test print(double(3) print(double(-4 print(double(0) print(double(10) ed all tests! ✓ | Expected           )         6           ))         -8           )         0           .5))         21.0  | <b>Got</b><br>6<br>-8<br>0<br>21.0 | ✓<br>✓<br>✓<br>✓ |  |  |

#### Optional settings:

Answer box: set the number of rows to allocate for the answer box.

Display > Hide: allows for additional validation of student answers, preventing them from using alternative methods to arrive at the correct output and ensuring they provide the intended solution.

Online URL: https://knowledgebase.xjtlu.edu.cn/article/coderunner-question-type-416.html