

CodeRunner question type

Question 1
Correct
Marked out of 1.00

Write a function double(n) that returns twice its parameter n.

For example:

Test	Result
print(double(3))	6

Answer: (penalty regime: 10, 20, ... %)

```
1 def double(n):  
2     return n * 2
```

Check

Test **Expected** **Got**

✓ print(double(3))	6	6	✓
✓ print(double(-4))	-8	-8	✓
✓ print(double(0))	0	0	✓
✓ print(double(10.5))	21.0	21.0	✓

Passed all tests! ✓

Start again **Save** **Fill in correct responses** **Submit and finish** **Close preview**

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.

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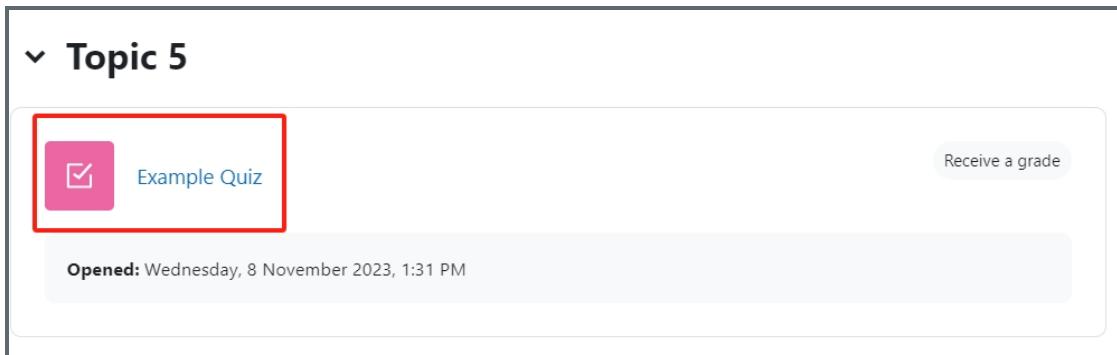
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Step 1: Access the Quiz activity where you want to create the question

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

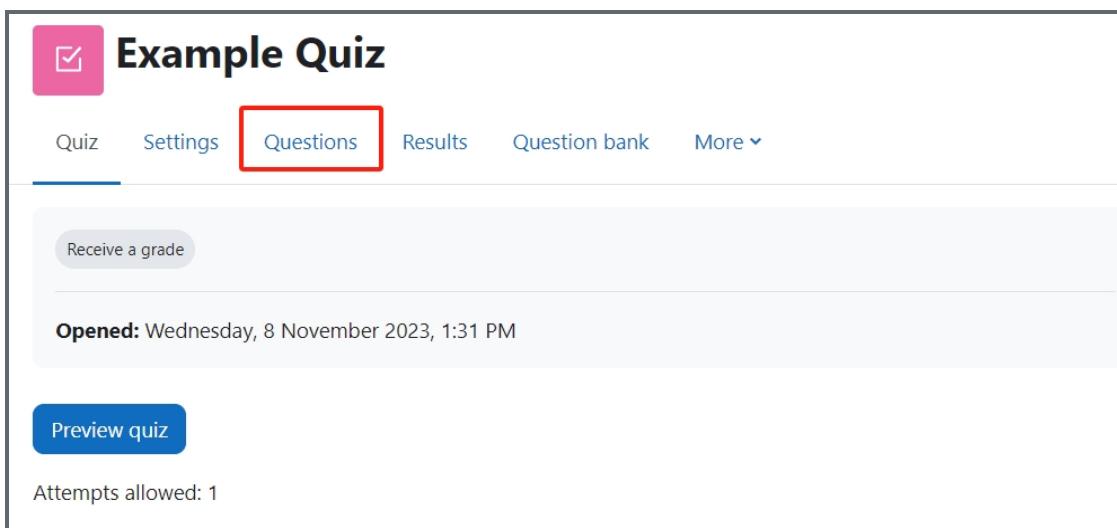


The screenshot shows a Moodle quiz activity titled 'Example Quiz'. The activity is part of 'Topic 5'. A red box highlights the 'Example Quiz' link. To the right of the link is a 'Receive a grade' button. Below the link, the text 'Opened: Wednesday, 8 November 2023, 1:31 PM' is displayed.

Note: If an appropriate Quiz activity doesn't exist in your module area/course, please see [Add a quiz](#) for details of how to create one.

Step 2: Open the 'Questions' tab.

1. Open the 'Questions' tab.



The screenshot shows the 'Example Quiz' page. The 'Questions' tab is highlighted with a red box. Other tabs include 'Quiz', 'Settings', 'Results', 'Question bank', and 'More'. A 'Receive a grade' button is visible. Below the tabs, the text 'Opened: Wednesday, 8 November 2023, 1:31 PM' is displayed. At the bottom, there is a 'Preview quiz' button and the text 'Attempts allowed: 1'.

Step 3: Add a new question

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



Example Quiz

Quiz Settings Questions Results Question bank More ▾

Questions

Questions: 1 | This quiz is open

Maximum grade 100.00

Save

Repaginate

Select multiple items

Total of marks: 1.00



Page 1

1  The Loch Ness Monster is a type of? The Loch Ness Monster ... Always

Shuffle ?

Add ▾

+ a new question

+ from question bank

+ a random question

Step 4: Choose a question type

1. Locate and select the CodeRunner question type from the pop-up window.
2. Click the 'Add' button.

Choose a question type to add

×

-  **Calculated**
 $2+2 = ?$
-  **Calculated multichoice**
 $2+2 = ?$
-  **Calculated simple**
 $2*2 = ?$
-  **CodeRunner**
Cr

CodeRunner: runs student-submitted code in a sandbox
-  **Drag and drop into text**
-  **Drag and drop markers**
-  **Drag and drop onto image**
-  **Drag-and-Drop Matching**
-  **Embedded answers (Cloze)**
-  **Essay (auto-grade)**
-  **Gapfill**

Add

Cancel

Step 5: Choose a 'Question type'

Choose a 'Question type' according to your requirement.

▼ CodeRunner question type

Question type	python3
Customisation	
Answer box	
Submit buttons	
Stop button	
Feedback	
Marking	
Template params	
Template param controls	
UI parameters	

The 'Question type' dropdown is highlighted with a red box. The selected value 'python3' is also highlighted with a blue box. The dropdown menu lists various programming languages and data structures: Undefined, c_function, c_program, cpp_function, cpp_program, directed_graph, java_class, java_method, java_program, multilanguage, nodejs, octave_function, pascal_function, pascal_program, php, python2, python3 (selected), and python3_w_input.

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

▼ Question type details

CodeRunner question type: python3

A Python3 question 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 student 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 it.

If there are no standard 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 same 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 a problem, the easiest 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	Double function in python
Question text	<p>Write a function double(n) that returns twice its parameter n.</p>

Step 7: Input the 'Test case'

Input Test cases.

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

Test cases

Test case 1	print(double(3))
Standard Input	
Expected output	6
Extra template data	
Test properties:	<input checked="" type="checkbox"/> Use as example <input type="checkbox"/> Display Show <input type="checkbox"/> Hide rest if fail <input type="checkbox"/> Mark 1.000 Ordering 10

Test case 2	print(double(-4))
Standard Input	
Expected output	-8
Extra template data	
Test properties:	<input type="checkbox"/> Use as example <input type="checkbox"/> Display Show <input type="checkbox"/> Hide rest if fail <input type="checkbox"/> Mark 1.000 Ordering 20

Step 8: Save changes

Save changes and continue editing Preview

Save changes

Step 9: Preview and test

Page 1

1 **Double function in python** Write a function double(n) that returns twice ... 1.00

Question 1

Correct

Marked out of
1.00

Write a function double(n) that returns twice its parameter n.

For example:

Test	Result
print(double(3))	6

Answer: (penalty regime: 10, 20, ... %)

```
1 | def double(n):  
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```

Check

	Test	Expected	Got	
✓	print(double(3))	6	6	✓
✓	print(double(-4))	-8	-8	✓
✓	print(double(0))	0	0	✓
✓	print(double(10.5))	21.0	21.0	✓

Passed all tests! ✓

Start again**Save****Fill in correct responses****Submit and finish****Close preview****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.xjtu.edu.cn/article/coderunner-question-type-416.html>