

Mini Exercise 1:

Create a Java class named MiniExercise1 (1 mark deduction if not).

It is to have a main method that calls each of the static methods below (2 marks deducted if not)

Task 1: 12 marks

Create a static method named Task1

- 1) Ask the user how many elements they would like to create. **(1 mark)**
- 2) Create an Object array with X elements, where X represents the value in Step 1) **(2 marks)**
- 3) In a loop, ask the user to enter a value for each element of the array: **(1 mark)**
 - a) If the value is either 0 or 1
 - i) Convert the value to a Boolean
(2 marks)
 - b) If the value is within the byte range
 - i) Convert the value to a byte
(2 marks)
 - c) If the value is within the short range
 - i) Convert the value to a short
(2 marks)
 - d) If the value is a number
 - i) Convert the value to an integer
(2 marks)

*** No error handling needed. Expect the user to enter a valid numerical value ***

*** Conversions can be done in any way desired ***

Task 2: 13 marks

Create a static method named Task2

- 1) In a loop, create a multi-dimensional array storing the values of the Multiplication Table from 1 to 10 squared

1	2	3	4	5	10
2	4	6	8	10	20
.....						
9	18	27	36	45	90
10	20	30	40	50	100

(4 marks)

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Please note:

- The first vertical column represents the first dimension of the 2D array
- Indices should be between 0 and 9 for both dimensions

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- 2) Ask the user how many questions they would like to answer **(1 mark)**
- 3) In a loop:
 - a) Randomly select two indices from the multi-dimensional array in Step 1) **(2 marks)**
 - b) Display the two numbers and ask the user to input the answer to the expression. **(1 mark)**
Example
What is 6 x 2 ?
The index 5 was selected at random in the first dimension of the 2D array.
The index 1 was selected at random in the second dimension of the 2D array
 - c) Capture the user's answer for the expression **(1 mark)**
 - i) Display a congrats message if the answer is correct **(1 mark)**
 - ii) Display the correct answer if answer is incorrect **(1 mark)**
- 4) Display a summary of how well the user did using string formatting
 - a) You answered {correct} out of {number of questions}.
That's a percentage of {rounded whole number percentage}%
(2 marks)

Marking

Please submit all **.java** source files on Blackboard when you are finished.

Name the package however you desire.