



<b>Academic Year</b>	<b>2022</b>
<b>Semester</b>	<input checked="" type="checkbox"/> Fall <input type="checkbox"/> Winter <input type="checkbox"/> Summer
<b>Course Code - Name</b>	CSCI 2010U – Data Structures
<b>Instructor</b>	Dr. Razi Iqbal
<b>Assessment</b>	Exercise 3

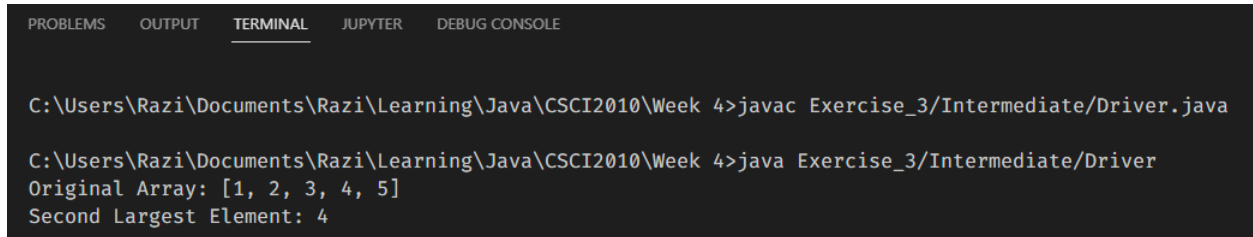
## Question 1 (Basic)

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This exercise tests your knowledge of arrays in Java.

Write a Java program that creates a class `Driver` which has a `main` method that declares an array which is then passed to a function called `getSecondLargest(int arr[])`. This function is expected to return the second largest element in the array.

Below is the screenshot of the expected output of this program:



```
PROBLEMS  OUTPUT  TERMINAL  JUPYTER  DEBUG CONSOLE

C:\Users\Razi\Documents\Razi\Learning\Java\CSCI2010\Week 4>javac Exercise_3/Intermediate/Driver.java

C:\Users\Razi\Documents\Razi\Learning\Java\CSCI2010\Week 4>java Exercise_3/Intermediate/Driver
Original Array: [1, 2, 3, 4, 5]
Second Largest Element: 4
```

Try to run the program using commands in terminal to get more practice.

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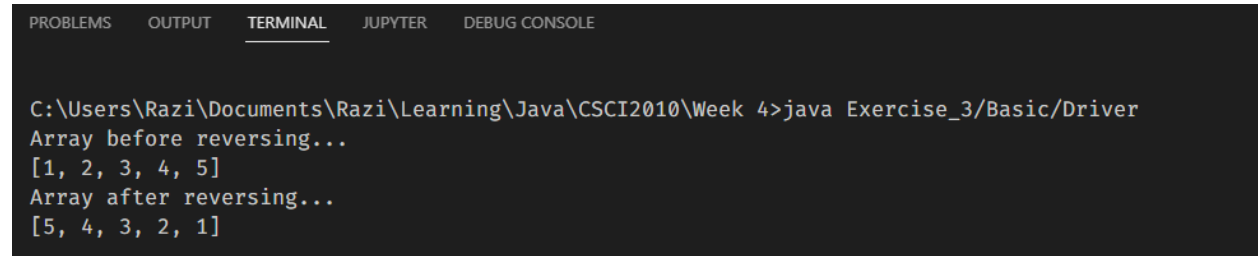
## Question 2 (Intermediate)

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This exercise tests your knowledge of arrays in Java.

Write a Java program that creates a class `Driver` which has a `main` method that declares an array which is then passed to a function called `reverseArray(int arr[])`. This function is expected to reverse the provided array and return that array. Show the original and returns array from the `main` method.

Below is the expected output:



```
PROBLEMS  OUTPUT  TERMINAL  JUPYTER  DEBUG CONSOLE

C:\Users\Razi\Documents\Razi\Learning\Java\CSCI2010\Week 4>java Exercise_3/Basic/Driver
Array before reversing...
[1, 2, 3, 4, 5]
Array after reversing...
[5, 4, 3, 2, 1]
```

Try to run the program using commands in terminal to get more practice.

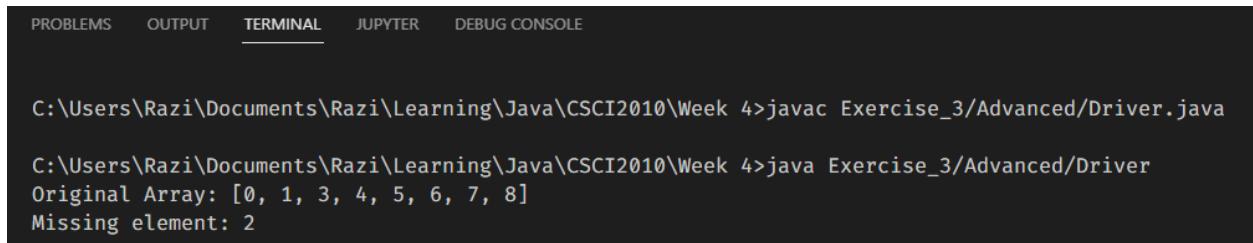
### Question 3 (Advanced)

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This exercise tests your knowledge of arrays in Java.

Write a Java program that creates a class `Driver` which has a `main` method that declares an array which is then passed to a function called `missingElement(int arr[])`. This function is expected to return the missing element of the series (array). Show the original array and the missing element from the `main` method.

Below is the expected output:



```
PROBLEMS  OUTPUT  TERMINAL  JUPYTER  DEBUG CONSOLE

C:\Users\Razi\Documents\Razi\Learning\Java\CSCI2010\Week 4>javac Exercise_3/Advanced/Driver.java

C:\Users\Razi\Documents\Razi\Learning\Java\CSCI2010\Week 4>java Exercise_3/Advanced/Driver
Original Array: [0, 1, 3, 4, 5, 6, 7, 8]
Missing element: 2
```

Try to run the program using commands in terminal to get more practice.