



# Project 8: Using an Array

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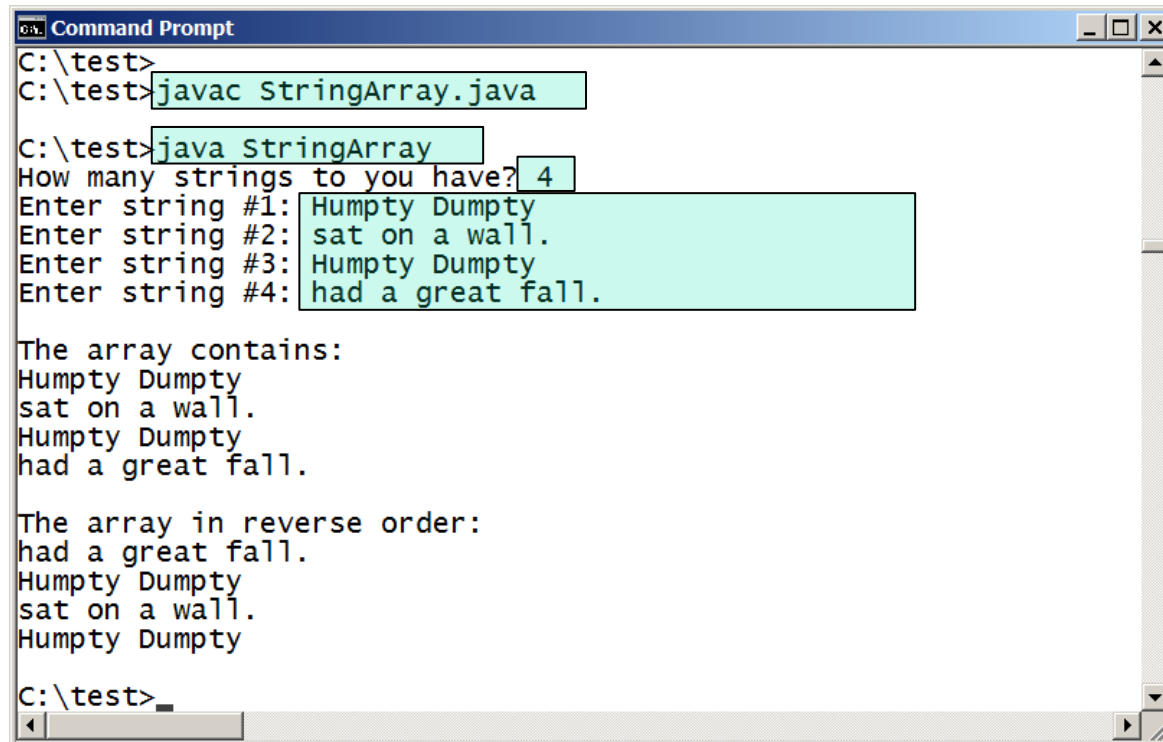


# Assignment

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- Write a Java program that accepts a specified number of strings from the keyboard and stores them in an array.
- Start by asking the user how many strings they want to enter.
  - Program should work for any reasonable number of strings.
- Create a String array of the specified size.
- Prompt the user to enter each string, read it from the keyboard, and store it in the array.
- Output the strings in the order entered.
- Then output the strings in the reverse order.
- Your outputs should match the sample run on the next slide.

# Sample Run



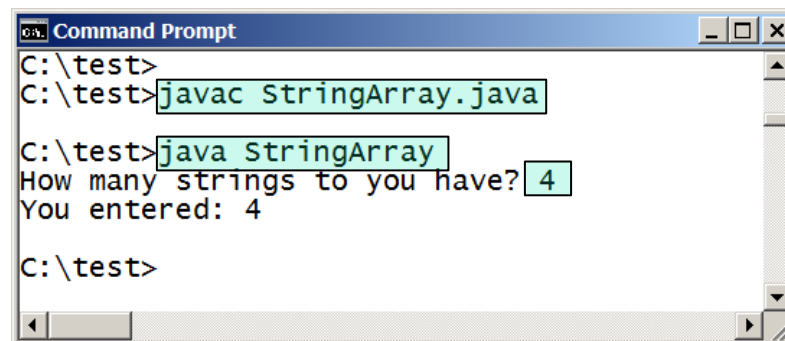
```
Command Prompt
C:\test>
C:\test>javac StringArray.java
C:\test>java StringArray
How many strings to you have? 4
Enter string #1: Humpty Dumpty
Enter string #2: sat on a wall.
Enter string #3: Humpty Dumpty
Enter string #4: had a great fall.

The array contains:
Humpty Dumpty
sat on a wall.
Humpty Dumpty
had a great fall.

The array in reverse order:
had a great fall.
Humpty Dumpty
sat on a wall.
Humpty Dumpty
C:\test>
```

# Implementation Tips

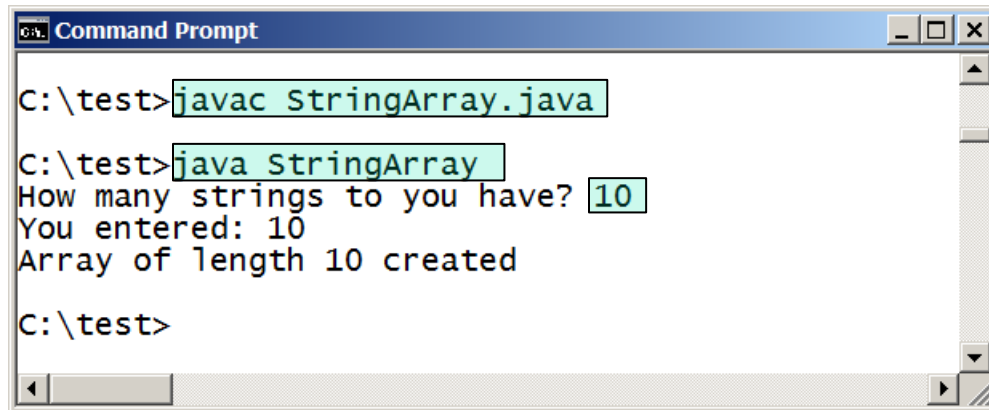
- Work in tiny steps.
- Be sure each step compiles without errors and works correctly before going to the next step.
- Step 1
  - Start by asking for the number of strings.
  - Add a temporary statement to output the number of strings.



```
Command Prompt
C:\test>
C:\test>javac StringArray.java
C:\test>java StringArray
How many strings to you have? 4
You entered: 4
C:\test>
```

# Implementation Steps

- Step 2
  - Create a String array of the specified size.
  - Add a temporary output saying that the array has been created and its length.

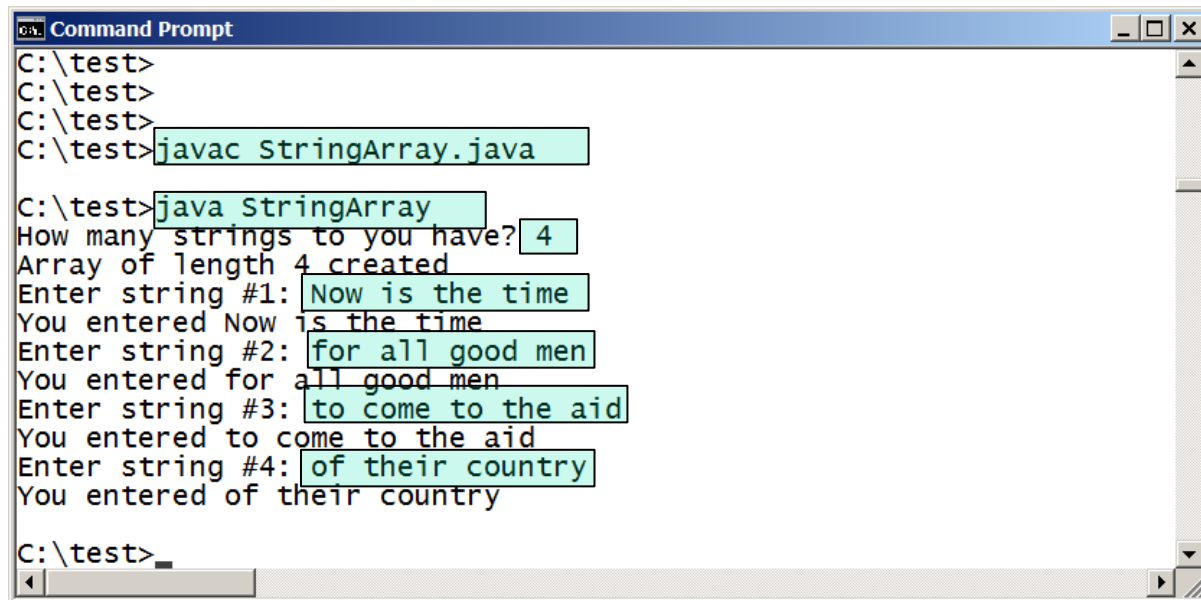


```
Command Prompt
C:\test>javac StringArray.java
C:\test>java StringArray
How many strings to you have? 10
You entered: 10
Array of length 10 created
C:\test>
```

# Implementation Steps

## ■ Step 3

- Add a "for" loop to enter the specified number of strings.
- Prompt the user for each input.
- Read the string into the next element of the array.
- Add a temporary output saying what was read.



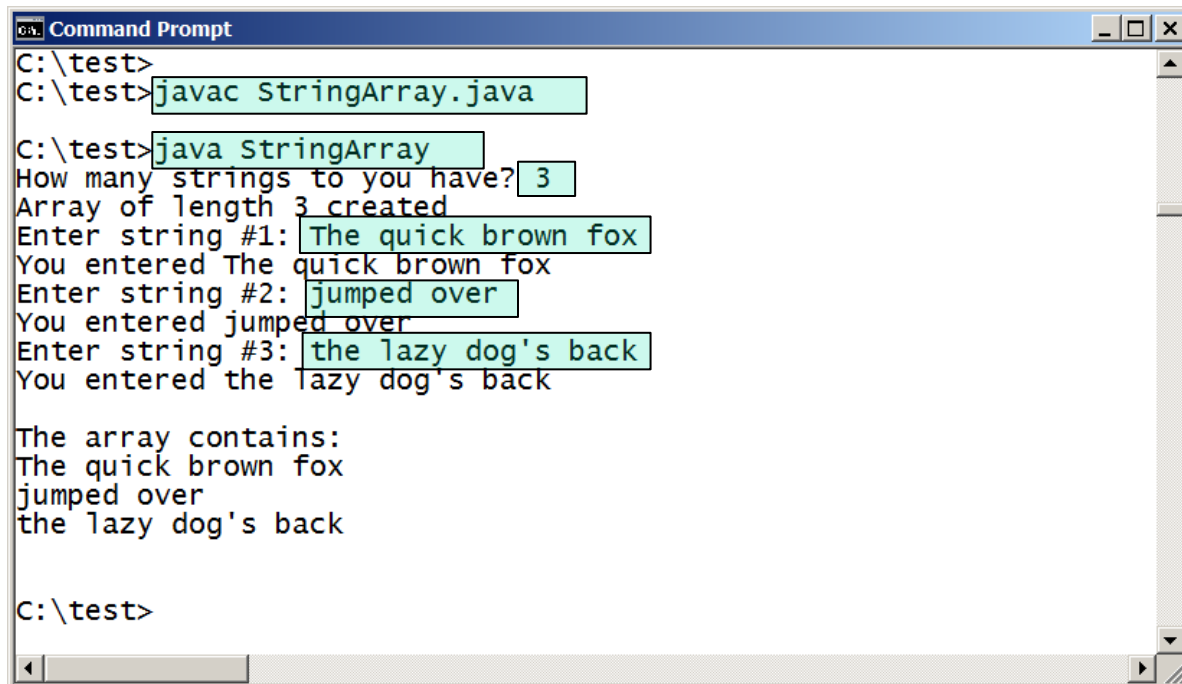
```
Command Prompt
C:\test>
C:\test>
C:\test>
C:\test>javac StringArray.java

C:\test>java StringArray
How many strings to you have? 4
Array of length 4 created
Enter string #1: Now is the time
You entered Now is the time
Enter string #2: for all good men
You entered for all good men
Enter string #3: to come to the aid
You entered to come to the aid
Enter string #4: of their country
You entered of their country

C:\test>
```

# Implementation Steps

- Step 4
  - Add a "for" loop to output the array in the order entered.



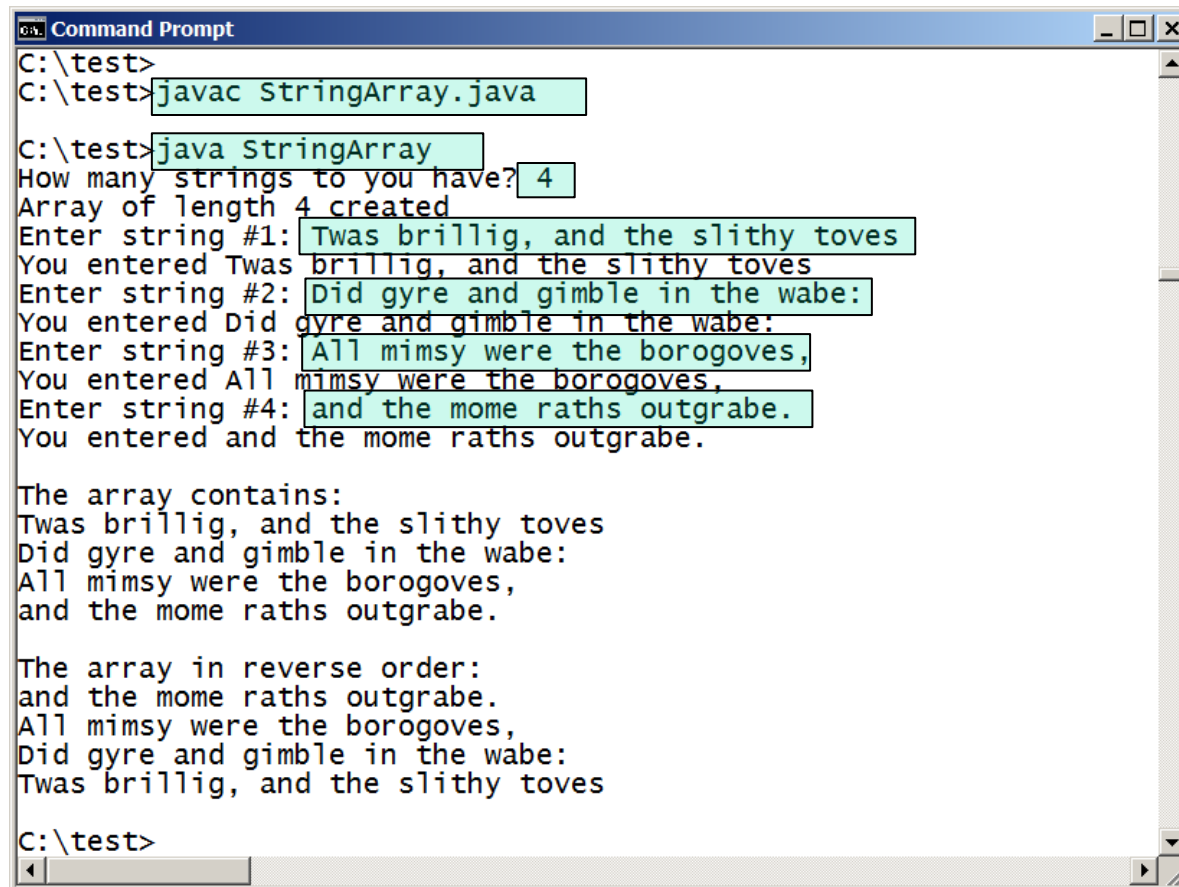
```
Command Prompt
C:\test>
C:\test>javac StringArray.java
C:\test>java StringArray
How many strings to you have? 3
Array of length 3 created
Enter string #1: The quick brown fox
You entered The quick brown fox
Enter string #2: jumped over
You entered jumped over
Enter string #3: the lazy dog's back
You entered the lazy dog's back

The array contains:
The quick brown fox
jumped over
the lazy dog's back

C:\test>
```

# Implementation Steps

- Step 5
  - Add a "for" loop to output the array in reverse order.



```
Command Prompt
C:\test>
C:\test> javac StringArray.java
C:\test> java StringArray
How many strings to you have? 4
Array of length 4 created
Enter string #1: Twas brillig, and the slithy toves
You entered Twas brillig, and the slithy toves
Enter string #2: Did gyre and gimble in the wabe:
You entered Did gyre and gimble in the wabe:
Enter string #3: All mimsy were the borogoves,
You entered All mimsy were the borogoves,
Enter string #4: and the mome raths outgrabe.
You entered and the mome raths outgrabe.

The array contains:
Twas brillig, and the slithy toves
Did gyre and gimble in the wabe:
All mimsy were the borogoves,
and the mome raths outgrabe.

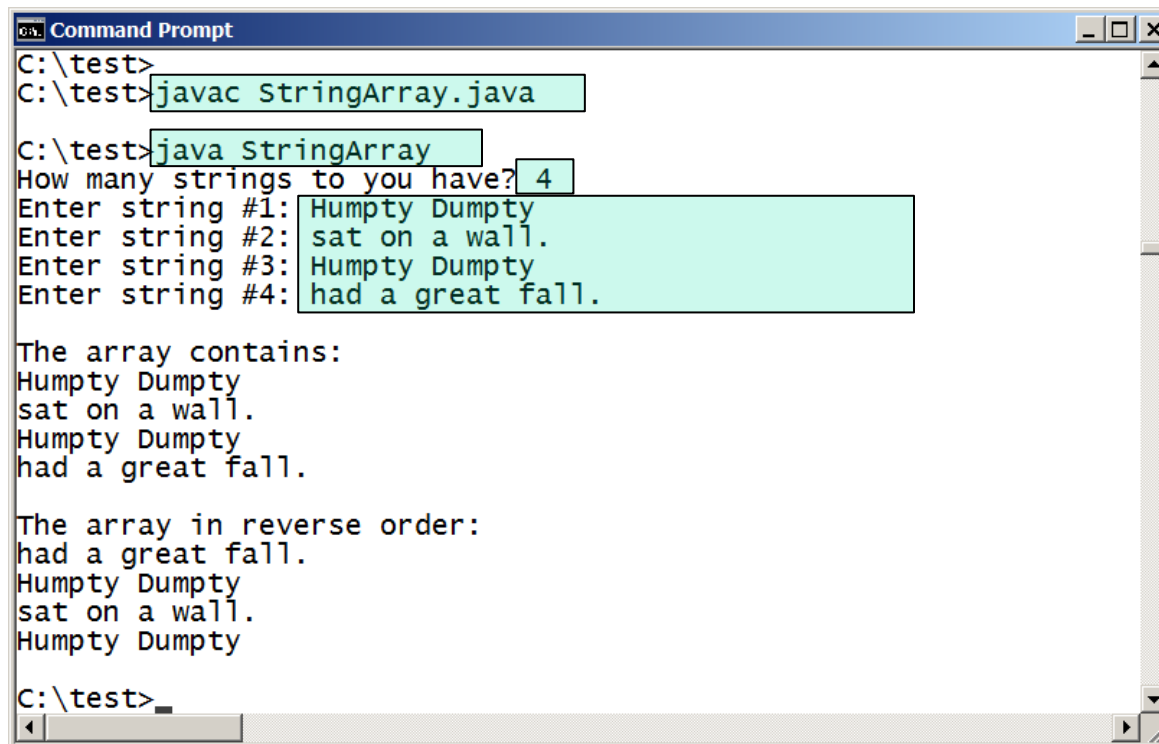
The array in reverse order:
and the mome raths outgrabe.
All mimsy were the borogoves,
Did gyre and gimble in the wabe:
Twas brillig, and the slithy toves

C:\test>
```



# Implementation Steps

- Step 6
  - Clean up.
  - Remove the temporary code, leaving just the required outputs.



```
Command Prompt
C:\test>
C:\test> javac StringArray.java
C:\test> java StringArray
How many strings to you have? 4
Enter string #1: Humpty Dumpty
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The array contains:
Humpty Dumpty
sat on a wall.
Humpty Dumpty
had a great fall.

The array in reverse order:
had a great fall.
Humpty Dumpty
sat on a wall.
Humpty Dumpty

C:\test>
```



# Submission

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- Put your Java source file into a folder and zip it.
- Submit your zipped Java source file via Canvas Assignments.
- Project is due by 11:59 PM, Friday, February 26.
  - All sections.
- Recommendation:  
Do this project in your lab session



# Ground Rules

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- It is OK to *discuss* the project with other students BUT
  - Do not share your code with other students.
  - Before or after submitting the project.
- Do not copy any other student's code.
  - Or even look at it.
- Do not let anyone copy or examine your code.



# Ground Rules

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Except for code posted on the class web site

- Do not copy code from the Internet
  - or any other source (other than the textbook.)
- Do not ask for help on an Internet forum.
  - If you need help, ask your instructor or a TA.
  - Come to lab and help sessions.
- Write your own code.