

Array operations In BASH

Talk to a Teacher Project

<http://spoken-tutorial.org>

National Mission on Education through ICT

<http://www.sakshat.ac.in>

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Learning Objectives



Learning Objectives

- ▶ Declare an **Array** and assign values to it



Learning Objectives

- ▶ Declare an **Array** and assign values to it
- ▶ Initialize an **Array** during declaration



Learning Objectives



Learning Objectives

- ▶ To find length of an **Array** and its **nth** element



Learning Objectives

- ▶ To find length of an **Array** and its n^{th} element
- ▶ To **print** an **Array**



Prerequisite



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- ▶ **You should be familiar with Linux Operating System**



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- ▶ You should be familiar with **Linux Operating System**
- ▶ **If not, for relevant tutorials please visit <http://spoken-tutorial.org>**



System Requirements



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- ▶ **Ubuntu Linux 12.04 OS**



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- ▶ **GNU Bash version 4.1.10**



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- ▶ **Ubuntu Linux 12.04 OS**
- ▶ **GNU Bash version 4.1.10**
- ▶ **GNU Bash version 4 or above is recommended for practice**



Array Definition

- ▶ **Array** is a variable with multiple values



Array Definition

- ▶ **Array** is a variable with multiple values
- ▶ **Values can be of same or different types**



Array Characteristics

- ▶ **No maximum limit for the size of an Array**



Array Characteristics

- ▶ No maximum limit for the size of an **Array**
- ▶ **Array** members need not be consecutive



Array Characteristics

- ▶ No maximum limit for the size of an **Array**
- ▶ **Array** members need not be consecutive
- ▶ **Array index** always starts with zero



Declare & assign values to an Array

Syntax to declare an Array:

```
declare -a arrayname
```



Declare & assign values to an Array

Syntax to declare an Array:

```
declare -a arrayname
```

Syntax to assign value:

```
Name[index]='value'
```



Initialize Array during declaration

- ▶ **Array** can be declared and initialized at the same time



Initialize Array during declaration

- ▶ **Array** can be declared and initialized at the same time
- ▶ **Elements should be separated by a space**



Initialize Array during declaration

- ▶ **Array** can be declared and initialized at the same time
- ▶ Elements should be separated by a **space**
- ▶ **Each element should be within parentheses**



Initialize Array during declaration

Syntax:

```
declare -a arrayname=('element1'  
'element2' 'element3')
```



Length of Array and its n^{th} element

Syntax to find Length:

```
${#arrayname[@]}
```



Length of Array and its n^{th} element

Syntax to find Length:

```
${#arrayname[@]}
```

Syntax to find n^{th} element:

```
${#arrayname[n]}
```



Print the whole Array

Syntax:

```
${arrayname[@]}
```



Summary



Summary

- ▶ **Declare and assign values to an Array**
- ▶ **Initialize an Array during declaration**



Summary

- ▶ To find length of an Array and its n^{th} element
- ▶ To print whole Array



Assignment

Declare an Array **names** of length **7** and find

- ▶ The total number of elements
- ▶ Print all the elements
- ▶ Print the 5th element



About the Spoken Tutorial Project

- ▶ Watch the video available at http://spoken-tutorial.org/What_is_a_Spoken_Tutorial
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Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- ▶ Conducts workshops using spoken tutorials
- ▶ Gives certificates to those who pass an online test
- ▶ For more details, please write to contact@spoken-tutorial.org



Acknowledgments

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- ▶ It is supported by the National Mission on Education through ICT, MHRD, Government of India
- ▶ More information on this Mission is available at

<http://spoken-tutorial.org/NMEICT-Intro>

