

# 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



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



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- ▶ 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 **n<sup>th</sup>** element



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- ▶ To find length of an **Array** and its **n<sup>th</sup>** element
- ▶ To print an **Array**



# Prerequisite





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- ▶ You should be familiar with Linux Operating System



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- ▶ 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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- ▶ **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



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- ▶ **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 $n^{\text{th}}$ element

**Syntax to find Length:**

`${#arrayname[@]}`



# Length of Array and its $n^{\text{th}}$ element

**Syntax to find Length:**

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

**Syntax to find  $n^{\text{th}}$  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  $n^{\text{th}}$  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 5<sup>th</sup> element





# About the Spoken Tutorial Project

- ▶ Watch the video available at [http://spoken-tutorial.org/What\\_is\\_a\\_Spoken\\_Tutorial](http://spoken-tutorial.org/What_is_a_Spoken_Tutorial)
- ▶ It summarizes the Spoken Tutorial project



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- ▶ It summarizes the Spoken Tutorial project
- ▶ If you do not have good bandwidth, you can download and watch it



# 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](mailto:contact@spoken-tutorial.org)



# Acknowledgments

- ▶ Spoken Tutorial Project is a part of the Talk to a Teacher project
- ▶ 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>

