

Basics of Single Dimensional Array

Spoken Tutorial Project

<http://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

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10 January 2018



Learning Objectives

We will learn about



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- Arrays in awk



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- Assigning array elements



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- How it is different from arrays in other programming languages



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- Arrays in awk
- Assigning array elements
- How it is different from arrays in other programming languages
- Refer the elements of an array



System Requirements



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- **Ubuntu Linux 16.04 OS**



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- **gedit text editor 3.20.1**



Pre-requisites

- Please go through the earlier awk tutorials on <http://spoken-tutorial.org/>



Pre-requisites

- Please go through the earlier `awk` tutorials on <http://spoken-tutorial.org/>
- Knowledge of any programming language like C or C++



Code Files

- The files used in this tutorial are available in the [Code Files](#) link on this tutorial page



Code Files

- The files used in this tutorial are available in the Code Files link on this tutorial page
- Please download and extract them



Array in awk



Array in awk

- **Array for storing related elements**



Array in awk

- Array for storing related elements
- Elements can be a number or a string



Array in awk

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- Elements can be a number or a string
- Arrays in awk are **associative**



Array in awk

- Array for storing related elements
- Elements can be a number or a string
- Arrays in awk are **associative**
- Each array element is an **index-value pair**



Difference:



Difference:

- No need to declare array before using it



Difference:

- No need to declare array before using it
- No need to specify how many elements the array will contain



Difference(Cont.):

- In programming languages, array index is generally a positive integer



Difference(Cont.):

- In programming languages, array index is generally a positive integer
- The index starts from 0, then 1, then 2 and so on



Difference(Cont.):

- But in awk, the index can be anything
 - any number or string



Assigning array element:syntax

array-name[index] = value



Assigning array element:syntax

array-name[index] = value

- **Array** name can be any valid variable name



Assigning array element:syntax

array-name[index] = value

- **Array** name can be any valid variable name
- **Here the index can be an integer or a string**



Assigning array element(Cont.)

array-name[index] = value

- Strings **have to be written** inside double quotes, **whether it is a index name or a value**



Assigning array element(Cont.)

- In awk arrays, index need not to be in a sequential manner



Assigning array element(Cont.)

- In awk arrays, index need not to be in a sequential manner
- Advantage of associative array is that new pairs can be added at any time



Referring array elements



Referring array elements

- **Write `arrayname[index]` to refer an element at a particular index**



Referring array elements

- To check whether any element exists in an array at a certain index:
use **in** operator



Referring array elements(Cont.:)

- `if (day[7] != ""):` wrong way to check the presence of an element



Referring array elements(Cont.:)

- `if (day[7] != ""):` wrong way to check the presence of an element
- **It will create a null element at index 7**



Referring array elements(Cont.:)

- **Instead we have to use the `in` operator**



Referring array elements(Cont.:)

- Instead we have to use the `in` operator
- It will not create any extra element in the array



Summary

- Arrays in awk
- Assigning array elements
- How it is different from arrays in other programming languages
- Refer the elements of an array



Assignment

- Define an array `flowerColor`
- Index will be the names of the flowers
- Value will be the corresponding color of the flowers



Assignment(Cont.)

- Insert entries for any five flowers of your choice
- Print the color of the fourth flower
- Check if the flower “Lotus” is present in the array



About the Spoken Tutorial Project

- Watch the video available at http://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- It summarises 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



Forum for specific questions

- Do you have questions in THIS Spoken Tutorial?
- Please visit <http://forums.spoken-tutorial.org>
- Choose the minute and second where you have the question
- Explain your question briefly
- Someone from our team will answer them



Forum for specific questions

- The Spoken Tutorial forum is for specific questions on this tutorial
- Please do not post unrelated and general questions on them
- This will help reduce the clutter
- With less clutter, we can use these discussion as instructional material



Acknowledgements

- 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>



Thank You

Thanks for joining
<http://spoken-tutorial.org>

