Overview of Linux AWK

Spoken Tutorial Project
http://spoken-tutorial.org
National Mission on Education through ICT
http://sakshat.ac.in

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Learning Objectives

We will learn about

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- Linux AWK

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We will learn about

- `Linux AWK`
- **The tutorials covered in the** `Linux AWK` **series**

System Requirements

- Ubuntu Linux 16.04 OS

AWK

- `AWK` **is a used for searching and extracting data from a file**

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- **We can also manipulate the data and generate reports using** `AWK`

AWK

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- Variables

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- Operators

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- Operators
- Conditional Statements

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- Variables
- Operators
- Conditional Statements
- Loops

AWK

- Single and Multi Dimensional Arrays

AWK

- Single and Multi Dimensional Arrays
- Built-in Functions

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- Single and Multi Dimensional Arrays
- Built-in Functions
- User Defined functions

AWK process

- **A file will be treated as a sequence of records**

AWK process

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- **Each line will be considered as a single record with multiple fields**

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- **Then `AWK` searches for the given pattern**

AWK process

- A file will be treated as a sequence of records
- Each line will be considered as a single record with multiple fields
- Then `AWK` searches for the given pattern
- **And performs the desired action**

Basics of AWK

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- **How to print the processed output**
- **Using regular expressions**

Variables and Operators

Variables and Operators

- User defined variables
- Variable **initialisation**
- Operators
- String Concatenation **&
  matching** operator
- BEGIN **and** END statement

Built-In variables

Built-In variables

- RS, FS
- ORS, OFS
- NR, NF
- ARGV, ARGC
- Writing awk scripts

Conditional statements

Conditional statements

- if
- else
- else if

Loops

Loops

- Conditional loops **in** `AWK` **like** `for`, `while` **and** `do-while` loop
- **We also learn** `search pattern` **using** `AWK`
- **Process data from a single or multiple files**

Basics of Single Dimensional Array

Basics of Single Dimensional Array

- **Assigning** array elements
- **Refer the** elements **of an** array
- **Indexing** AWK arrays
- **Advantage of** associative array
- **Checking whether any** element **exists in an** array **at a certain index**

More on Single Dimensional Array

- **Using** `AWK` array **with file**
- **Scan the** `elements` **of an** `array`
- **New variation of** `for` `loop`
- **Delete an** `array` `element`
- **Delete whole** `array`
- **Values of** `ARGC` **and** `ARGV`

Multi Dimensional Array

Multi Dimensional Array

- **Identifying an** element **by a sequence of multiple indices**
- **Concatenated into a single** string
- **Create 2 by 2** multidimensional array **in** AWK

Multi Dimensional Array

- **Create the** `transpose` **of a 2 by 2** `matrix`
- **Scan the** `multidimensional array`
- **Combine the** `for` `loop` **with the** `split function`

Built-in Functions

Built-in Functions

- Arithmetic functions
- Random functions
- String functions
- Input and Output functions
- Timestamp functions

User Defined Functions

User Defined Functions

- **How to create our own** function
- Function call
- Return statement
- Reverse function

Summary

We learnt about

- `AWk`
- **Went through the tutorials in this series**

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 intructional material**

Acknowledgements

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- **More information on this Mission is available at:**
  http://spoken-tutorial.org /NMEICT-Intro

Thanks for joining

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