

Variables and Operators in 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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We will learn about

- User Defined Variables



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- Operators



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We will learn about

- User Defined Variables
- Operators
- **BEGIN and END statements**



System Requirements

- **Ubuntu Linux 16.04 OS**



Pre-requisites

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



Pre-requisites

- Please go through the earlier Linux tutorials on this website <http://spoken-tutorial.org/>
- Should be familiar with basic operators used in C or C++



- Combines the power of a filter and a programming language



- Combines the power of a filter and a programming language
- **Supports** Variables, Constants, Operators, **etc.**



Variable



Variable

- **An identifier that references a value**



Variable

- An identifier that references a value
- awk **supports both** user-defined **and** built-in variables



Variable

- **An identifier that references a value**
- **awk supports both** user-defined **and** built-in variables
- **No initialization required**



Variable

- **An identifier that references a value**
- **awk supports both** user-defined **and** built-in variables
- **No initialization required**
- **awk automatically initializes them to zero or null string, by default**



Variables

- **Must begin with a letter and continue with letters, digits and underscores**



Variables

- Must begin with a letter and continue with letters, digits and underscores
- Are case-sensitive



Variables

- Must begin with a letter and continue with letters, digits and underscores
- Are case-sensitive
- So, Salary with capital S and salary with small s, are two different variables



Operators

- **Arithmetic operator:**

$+$, $-$, $*$, $/$, $\%$, $++$, $--$

- **Assignment Operator:**

$=$, $+=$, $-=$, $*=$, $/=$

- **Relational operator:**

$<$, $<=$, $>$, $>=$, $==$, $!=$



Operators(Continued)

- **Logical operator:**
`&&, ||, !`
- **String comparison:**
`~, !~`
- **String concatenation:**
blank space



BEGIN and END sections

- Our last command gives the running count of blank lines



BEGIN and END sections

- Our last command gives the running count of blank lines
- What if I want to print only the total number of blank lines?



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Print **x** only once, after the entire file has been traversed



BEGIN and END sections

- Our last command gives the running count of blank lines
- What if I want to print only the total number of blank lines?
Print **x** only once, after the entire file has been traversed
- Also want to give a heading



BEGIN and END sections



BEGIN and END sections

BEGIN:

- **Contains procedures for pre-processing**



BEGIN and END sections

BEGIN:

- Contains procedures for pre-processing
- Gets executed before the main input loop



BEGIN and END sections

END :

- **Contains procedures for post-processing**



BEGIN and END sections

END :

- Contains procedures for post-processing
- Gets executed after the main input loop



Summary

We learnt about

- User Defined Variables
- Operators
- BEGIN **and** END **statements**



Assignment

- **Print every line where**
 - 1) the value of the last field is more than 5000**
 - 2) and the student belongs to Electrical Department**
- **Print the average marks of all the students with the heading Average marks**



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

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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>



Thank You

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

