

Built in Functions 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



Learning Objectives

- Arithmetic functions



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- String functions



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- Input/Output functions



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- String functions
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- Timestamp functions



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/>



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- 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

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- Please download and extract them



Arithmetic Functions



Arithmetic Functions

- `sqrt(x)` : **Returns positive square root of x**



Arithmetic Functions

- `sqrt(x)`: **Returns positive square root of x**
- `int(x)`: **Truncates x to an integer value**



Arithmetic Functions

- `sqrt(x)`: **Returns positive square root of x**
- `int(x)`: **Truncates x to an integer value**
- `exp(x)`: **Gives the exponential of x**



Arithmetic Functions

- $\log(x)$: **Returns natural logarithm value of x**



Arithmetic Functions

- $\log(x)$: **Returns natural logarithm value of x**
- $\sin(x)$: **and** $\cos(x)$: **give** $\sin(x)$ **and** $\cosine(x)$



Arithmetic Functions

- $\log(x)$: **Returns natural logarithm value of x**
- $\sin(x)$: **and** $\cos(x)$: **give** $\sin(x)$ **and** $\cosine(x)$
- x **should be mentioned in radians**



Arithmetic Functions

`rand()` :

- **Returns any random number between 0 and 1**



Arithmetic Functions

`rand()` :

- Returns any random number between 0 and 1
- But never returns 0 or 1



Arithmetic Functions

`rand()` :

- **Generated numbers will be random within one awk execution**



Arithmetic Functions

`rand()` :

- **Generated numbers will be random within one awk execution**
- **Predictable across different executions of the awk program**



Arithmetic Functions

`srand(x)` :

- **Provide seed value `x` for random function**



Arithmetic Functions

`srand(x)` :

- Provide seed value `x` for random function
- In absence of `x`, date and time of day is used as the seed value



String Functions



String Functions

- `length(s)`: Gives the length of a particular string `s`



String Functions

- `length(s)`: Gives the length of a particular string `s`
- `index(s1,s2)`: Determines the position of string `s2` within the larger string `s1`



String Functions

- `length(s)`: **Gives the length of a particular string `s`**
- `index(s1,s2)`: **Determines the position of string `s2` within the larger string `s1`**
- `index("linux","n")`: **Returns 3**



String Functions

- `substr(s,a,b)`: **extracts a substring from a larger string s**



String Functions

- `substr(s,a,b)` : **extracts a substring from a larger string s**
- `s` : **String**



String Functions

- `substr(s,a,b)` : **extracts a substring from a larger string s**
- `s` : **String**
- `a` : **Position in s from which the extraction would start**



String Functions

- `substr(s,a,b)` : **extracts a substring from a larger string s**
- `s` : **String**
- `a` : **Position in s from which the extraction would start**
- `b` : **Number of characters to be extracted**



String Functions

- `split(s,a,sep)`



String Functions

- `split(s,a,sep)`
- **Please refer to the earlier awk tutorials**



Input/Output Functions



Input/Output Functions

- **System(): Run any unix command within awk**



Timestamp Functions



Timestamp Functions

- `sysptime()`



Timestamp Functions

- **sysptime()**
- **strftime()**



Summary

We have learnt about different types of built-in functions like

- Arithmetic functions
- String functions
- Input/Output functions
- Timestamp functions



Assignment

Write a awk program to print

- **The last field of every record**
- **Where name of the student has small u as the third letter**
- **Using the awkdemo.txt file**



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



Acknowledgements

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- More information on this Mission is available at:

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



Thank You

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

