

Basics of Shell Scripting

Talk to a Teacher Project

<http://spoken-tutorial.org>

National Mission on Education through ICT

<http://www.sakshat.ac.in>

FOSSEE & Spoken Tutorial Team
IIT Bombay

20 May 2013



Learning Objectives



Learning Objectives

- ▶ **System variables**



Learning Objectives

- ▶ **System variables**
- ▶ **User defined variables**



Learning Objectives

- ▶ System variables
- ▶ User defined variables
- ▶ **Accepting user input via keyboard**



Prerequisite



Prerequisite

- ▶ **You should be familiar with Linux Operating System**



Prerequisite

- ▶ You should be familiar with **Linux Operating System**
- ▶ **If not, for relevant tutorials please visit <http://spoken-tutorial.org>**



System Requirements



System Requirements

- ▶ **Ubuntu Linux 12.04 OS**



System Requirements

- ▶ **Ubuntu Linux 12.04 OS**
- ▶ **GNU Bash version 4.1.10**



System Requirements

- ▶ **Ubuntu Linux 12.04 OS**
- ▶ **GNU Bash version 4.1.10**
- ▶ **GNU Bash version 4 or above is recommended for practice**



Variables

- ▶ **Bash variables provide temporary storage for information**



Variables

- ▶ **Bash variables provide temporary storage for information**
- ▶ **Can be used within the lifespan of the program**



Variables

- ▶ **Bash variables provide temporary storage for information**
- ▶ **Can be used within the lifespan of the program**
- ▶ **Two types of variables**



Variables

- ▶ **Bash variables provide temporary storage for information**
- ▶ **Can be used within the lifespan of the program**
- ▶ **Two types of variables**
 - ▶ **System variables**



Variables

- ▶ **Bash variables provide temporary storage for information**
- ▶ **Can be used within the lifespan of the program**
- ▶ **Two types of variables**
 - ▶ **System variables**
 - ▶ **User defined variables**



System Variables



System Variables

- ▶ **Created and maintained by Linux Bash Shell**



System Variables

- ▶ Created and maintained by **Linux Bash Shell**
- ▶ **Defined by Capital letters**



System Variables

- ▶ Created and maintained by Linux Bash Shell
- ▶ Defined by Capital letters
- ▶ **Commonly used system variables** are



System Variables

- ▶ Created and maintained by Linux Bash Shell
- ▶ Defined by Capital letters
- ▶ Commonly used **system variables** are
 - ▶ **BASH_VERSION**



System Variables

- ▶ Created and maintained by **Linux Bash Shell**
- ▶ Defined by **Capital letters**
- ▶ Commonly used **system variables** are
 - ▶ **BASH_VERSION**
 - ▶ **HOSTNAME**



System Variables

- ▶ Created and maintained by **Linux Bash Shell**
- ▶ Defined by **Capital letters**
- ▶ Commonly used **system variables** are
 - ▶ **BASH_VERSION**
 - ▶ **HOSTNAME**
 - ▶ **HOME etc**



User Defined Variables



User Defined Variables

- ▶ **Created and maintained by users**



User Defined Variables

- ▶ Created and maintained by users
- ▶ Avoid uppercase for names of user defined variables



User Defined Variables

- ▶ Created and maintained by users
- ▶ Avoid uppercase for names of **user defined variables**
- ▶ **Easy to differentiate between user defined and system variables**



Unset



Unset

- ▶ The value of a variable can be unset by using the `unset` command



Unset

- ▶ The value of a variable can be unset by using the `unset` command
- ▶ The syntax for this is `unset variablename`



Global and Local Variables

In Shell script,



Global and Local Variables

In Shell script,

- ▶ User defined variables can be declared **globally** or **locally**



Global and Local Variables

In Shell script,

- ▶ User defined variables can be declared **globally** or **locally**
- ▶ **By default, all variables are global**



Global and Local Variables

In Shell script,

- ▶ User defined variables can be declared **globally** or **locally**
- ▶ By default, all variables are **global**
- ▶ **So, their values remain the same inside and outside the function**



Getting user input via keyboard

The `read` command

- ▶ is used to accept input from the keyboard



Getting user input via keyboard

The `read` command

- ▶ is used to accept input from the keyboard
- ▶ can also be used to assign an input value to a user defined variable



Syntax of read command

▶ `read -p "PROMPT"`



Syntax of read command

▶ `read -p "PROMPT"`



Syntax of read command

- ▶ `read -p "PROMPT"`
`man read`



Summary

- ▶ **System variables**
- ▶ **User defined variables**
- ▶ **Accepting user input via keyboard**



Assignment I

1. Write a simple Bash program to get the following system variables
 - ▶ pwd
 - ▶ logname



Assignment II

2. Write a simple Bash program

- ▶ To ask username from user
- ▶ To exit the program, if user does not enter anything within 10 seconds

Hint: `read -t 10 -p`



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



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



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>

