

# BASH Shell Scripting

Talk to a Teacher Project

<http://spoken-tutorial.org>

National Mission on Education through ICT

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

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IIT Bombay

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# Learning Objectives



# Learning Objectives

- ▶ **About different types of Shells**



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- ▶ **About different types of Shells**
- ▶ **To write a Bash Shell script**



# Learning Objectives

- ▶ **About different types of Shells**
- ▶ **To write a Bash Shell script**
- ▶ **To execute it**



# Prerequisite



# Prerequisite

- ▶ You should be familiar with Linux Operating System



# Prerequisite

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



# System Requirements



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- ▶ **Ubuntu Linux 12.04 OS**



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



# System Requirements

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



# Bash Shell



# Bash Shell

- ▶ **Bash Shell is a Command language interpreter, that executes commands**



# Bash Shell

- ▶ **Bash Shell is a Command language interpreter, that executes commands**
- ▶ **Commands are read from the standard input device**



# Bash Shell

- ▶ Bash Shell is a Command language interpreter, that executes commands
- ▶ Commands are read from the standard input device
- ▶ The input device can be:



# Bash Shell

- ▶ **Bash Shell is a Command language interpreter, that executes commands**
- ▶ **Commands are read from the standard input device**
- ▶ **The input device can be:**
  - ▶ **Keyboard**



# Bash Shell

- ▶ **Bash Shell is a Command language interpreter, that executes commands**
- ▶ **Commands are read from the standard input device**
- ▶ **The input device can be:**
  - ▶ **Keyboard**
  - ▶ **A simple text file**



# Different Types of Shells



# Different Types of Shells

**Bourne Shell - `/bin/sh`**



# Different Types of Shells

## Bourne Shell - `/bin/sh`

- ▶ Was written by Stephen Bourne



# Different Types of Shells

## Bourne Shell - `/bin/sh`

- ▶ Was written by Stephen Bourne
- ▶ Lacked interactivity



# Different Types of Shells



# Different Types of Shells

**C Shell - /bin/csh**



# Different Types of Shells

## C Shell - `/bin/csh`

- ▶ Provides features lacking in Bourne Shell



# Different Types of Shells



# Different Types of Shells

**K Shell - `/bin/ksh`**



# Different Types of Shells

**K Shell - /bin/ksh**

- ▶ **Was created by David Korn**



# Different Types of Shells

## K Shell - `/bin/ksh`

- ▶ Was created by David Korn
- ▶ Has features of both B Shell and C Shell



# Different Types of Shells

## K Shell - `/bin/ksh`

- ▶ Was created by David Korn
- ▶ Has features of both B Shell and C Shell
- ▶ Along with some additional features



# Different Types of Shells

## Bash Shell - `/bin/bash`



# Different Types of Shells

## Bash Shell - `/bin/bash`

- ▶ Was developed by GNU project



# Different Types of Shells

## Bash Shell - `/bin/bash`

- ▶ Was developed by GNU project
- ▶ Is based on B Shell language



# Different Types of Shells

## Bash Shell - /bin/bash

- ▶ Was developed by GNU project
- ▶ Is based on B Shell language
- ▶ **Has features of C and K Shells**



# Different Bash Shells



# Different Bash Shells

**TC Shell - `/bin/tcsh`**



# Different Bash Shells

**TC Shell - `/bin/tcsh`**

- ▶ **Is the default Shell of FreeBSD and its descendants**



# Different Bash Shells



# Different Bash Shells

**Z Shell - `/bin/zsh`**



# Different Bash Shells

## Z Shell - `/bin/zsh`

- ▶ **Is a Shell designed for interactive use**



# Different Bash Shells

## Z Shell - `/bin/zsh`

- ▶ Is a Shell designed for interactive use
- ▶ Has many useful features of `ksh`, `bash` and `tcsh`



# Bash Shell Script



# Bash Shell Script

- ▶ **Contains a series of Bash commands in plain text file**



# Bash Shell Script

- ▶ **Contains a series of Bash commands in plain text file**
- ▶ **Tells the Shell to execute this text file, instead of typing the commands**



# Summary

- ▶ **Types of Shells**
- ▶ **Bash Shell**
- ▶ **Bash Shell script**
- ▶ **Write a simple Shell script**
- ▶ **Execute the script**



# Assignment

**Write a simple script to display the message**

- ▶ **“Welcome to Bash learning”**
- ▶ **and “\*\*\*\*\*”**
- ▶ **on separate lines**



# About the Spoken Tutorial Project

- ▶ Watch the video available at [http://spoken-tutorial.org/What\\_is\\_a\\_Spoken\\_Tutorial](http://spoken-tutorial.org/What_is_a_Spoken_Tutorial)
- ▶ It summarises the Spoken Tutorial project



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- ▶ 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](mailto: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>

