

# Logical Operators in Bash

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

Use of -

- Logical AND



# Learning Objectives

Use of -

- ▶ Logical AND
- ▶ Logical OR



# Learning Objectives

Use of -

- ▶ Logical **AND**
- ▶ Logical **OR**
- ▶ Logical **NOT**



# Learning Objectives

## Use of -

- ▶ Logical **AND**
- ▶ Logical **OR**
- ▶ Logical **NOT**
- ▶ **using a few examples**



# Prerequisite



# Prerequisite

Knowledge of

- ▶ **if-else** statement





# Prerequisite

## Knowledge of

- ▶ **if-else** statement
- ▶ **Command line arguments**



# Prerequisite

## Knowledge of

- ▶ **if-else** statement
- ▶ **Command line arguments**
- ▶ **Quoting in BASH**



# Prerequisite

## Knowledge of

- ▶ **if-else** statement
- ▶ **Command line arguments**
- ▶ **Quoting** in BASH
- ▶ **If not, for relevant tutorials please visit <http://spoken-tutorial.org>**



# System Requirements



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- ▶ **Ubuntu Linux 12.04 OS**



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- ▶ **GNU Bash version 4.1.10**



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



# Logical Operators





# Logical Operators

- ▶ **Logical Operators** are mainly used to control program flow



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- ▶ **Logical Operators** helps to link two expressions/conditions



# Logical Operators

- ▶ **Logical Operators** are mainly used to control program flow
- ▶ **Logical Operators** helps to link two expressions/conditions
- ▶ **Part of if, while, or other control statements**



# Logical AND

**Syntax:**



# Logical AND

## Syntax:

► `[ $condn1 ] && [ $condn2 ]`



# Logical AND

## Syntax:

- ▶ `[ $condn1 ] && [ $condn2 ]`
- ▶ `[ $condn1 -a $condn2 ]`



# Logical AND

## Syntax:

- ▶ `[ $condn1 ] && [ $condn2 ]`
- ▶ `[ $condn1 -a $condn2 ]`
- ▶ **Logical AND** returns true when both condition1 and condition2 are true



# Logical OR

**Syntax:**





# Logical OR

## Syntax:

► `[ $condn1 ] || [ $condn2 ]`



# Logical OR

## Syntax:

- ▶ `[ $condn1 ] || [ $condn2 ]`
- ▶ `[ $condn1 -o $condn2 ]`



# Logical OR

## Syntax:

- ▶ `[ $condn1 ] || [ $condn2 ]`
- ▶ `[ $condn1 -o $condn2 ]`
- ▶ **Logical OR** returns true when either condition1 or condition2 is true



# Logical NOT



# Logical NOT

- Inverts the **Boolean value** of an expression



# Logical NOT

- ▶ Inverts the **Boolean value** of an expression
- ▶ Returns **true** when the expression is false



# Logical NOT

- ▶ Inverts the **Boolean value** of an expression
- ▶ Returns **true** when the expression is false
- ▶ Returns **false** when the expression is true



# Logical NOT

**Syntax:**





# Logical NOT

## Syntax:

► `! expression`



# Logical NOT

## Syntax:

- ▶ `! expression`
- ▶ `[ ! expression ]`



# Summary

## Usage of



# Summary

## Usage of

- ▶ logical **AND**
- ▶ logical **OR**
- ▶ logical **NOT**



# Assignment

1. Check whether the file exists
2. and is executable
3. using **logical operators**
4. [Hint: `man test`]



# 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 summarizes the Spoken Tutorial project



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- ▶ It summarizes 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)





# Acknowledgments

- ▶ 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>

