

# Basics of functions 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

- Importance of functions



# Learning Objectives

- ▶ Importance of **functions**
- ▶ **Declare a function**



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- ▶ Importance of **functions**
- ▶ Declare a **function**
- ▶ **Call** a **function**



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- ▶ Importance of **functions**
- ▶ Declare a **function**
- ▶ Call a **function**
- ▶ **Work flow of a function**



# Learning Objectives

- ▶ Importance of **functions**
- ▶ Declare a **function**
- ▶ Call a **function**
- ▶ Work flow of a **function**
- ▶ **With the help of an example**



# Prerequisite



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- Knowledge of Shell Scripting



# Prerequisite

- ▶ Knowledge of **Shell Scripting**
- ▶ 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 4.2**



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- ▶ Ubuntu Linux 12.04 OS
- ▶ GNU Bash version 4.2
- ▶ **GNU Bash version 4 or above is recommended for practice**



# Functions



# Functions

- **Collection of commands or an algorithm**



# Functions

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- ▶ **It is intended to do a specific task**



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# Functions

- ▶ **Collection of commands or an algorithm**
- ▶ **It is intended to do a specific task**
- ▶ **Used to break up a complex program into separate tasks**
- ▶ **Improves overall script readability and ease of use**



# Function: Syntax 1



# Function: Syntax 1

```
function function_name  
{  
  commands  
}
```



# Function: Syntax 2



# Function: Syntax 2

```
function_name ()  
{  
  commands  
}
```



# Function Call



# Function Call

- ▶ **Function can be called anywhere within the program**



# Function Call

- ▶ Function can be called anywhere within the program
- ▶ Type the function name at the location where you want to call it



# Function Call

- ▶ Function can be called anywhere within the program
- ▶ Type the function name at the location where you want to call it
- ▶ **Syntax:** `Function_name`



# Workflow



# Workflow

- ▶ **When** bash interpreter **visits** function definition, **it scans** function



# Workflow

- ▶ **When** `bash` interpreter visits function definition, it scans function
- ▶ **Function** is called only when its name appears



# Workflow

- ▶ **When** bash interpreter **visits** function definition, it scans function
- ▶ **Function** is called only when its name appears
- ▶ **When** interpreter **reads** function name, it **executes** function definition



# Workflow



# Workflow

- Interpreter **treats** function name as a **command**



# Workflow

- ▶ Interpreter **treats** function name as a **command**
- ▶ **Remember to define the function before calling it**



# Summary



# Summary

- Importance of functions



# Summary

- ▶ Importance of **functions**
- ▶ **Function declaration**



# Summary

- ▶ Importance of **functions**
- ▶ **Function declaration**
- ▶ **Function call**



# Summary

- ▶ Importance of **functions**
- ▶ **Function declaration**
- ▶ **Function call**
- ▶ **Work flow of Function**



# Summary

- ▶ Importance of **functions**
- ▶ **Function declaration**
- ▶ **Function call**
- ▶ Work flow of **Function**
- ▶ **With an example**



# Assignment

**Write a program with two functions**

- ▶ **The first function should display diskspace usage in human readable form**

(Hint: `df -h`)

- ▶ **The second function should display filesystem usage in human readable form**

(Hint: `du -h`)



# 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)



# Acknowledgment

- ▶ 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>

