

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>

FOSSEE & Spoken Tutorial Team
IIT Bombay

March 4, 2014



Learning Objectives



Learning Objectives

- ▶ **Importance of functions**



Learning Objectives

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



Learning Objectives

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



Learning Objectives

- ▶ 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



Prerequisite

- ▶ Knowledge of Shell Scripting



Prerequisite

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



System Requirements

- ▶ **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**
`algorithm`



Functions

- ▶ **Collection of commands or an algorithm**
- ▶ **It is intended to do a specific task**



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**



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
- ▶ It summarizes the Spoken Tutorial project



About the Spoken Tutorial Project

- ▶ Watch the video available at http://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- ▶ 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



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>

