

# Referencing and Dereferencing

**Spoken Tutorial Project**

**<http://spoken-tutorial.org>**

**National Mission on Education through ICT**

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

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# Learning Objective

**We will learn about**



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**We will learn about**

- **Scalar References**



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**We will learn about**

- **Scalar References**
- **Array References**
- **Hash References**
- **Dereferences**
- **Add, remove, access elements of Array/Hash references**



# System Requirements





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- **Ubuntu Linux 12.04 OS**



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- **Perl 5.14.2**



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- **Ubuntu Linux 12.04 OS**
- **Perl 5.14.2**
- **gedit Text Editor**



# Pre-requisites

- **Basic knowledge of Perl Programming**



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# Pre-requisites

- Basic knowledge of Perl Programming
- Array functions
- Hash functions
- For relevant PERL tutorials, visit <http://spoken-tutorial.org>



# What is References?

- A reference is a pointer or an address to a variable, array, hash or a subroutine





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- A reference is a pointer or an address to a variable, array, hash or a subroutine
- It does not contain data directly
- Reference is an easy, compact scalar value



# Features of References

- Reference will improve the performance when you pass or return large data structures



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- It saves memory as it passes a reference to a subroutine



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- Reference will improve the performance when you pass or return large data structures
- It saves memory as it passes a reference to a subroutine
- Easy to manage complicated Perl data structures



# Create Reference

Put a backslash \ in front of a variable

Reference to a scalar variable: \$

```
$fvalue = 22;
```

```
$ref = \ $fvalue;
```



# Create Reference - Array

Reference to an array variable: @

```
@color=('Red','Green','Yellow');
```

```
$colorRef=\@color;
```



# Create Reference - Hash

Reference to a hash variable: %

```
%dept( 'Name' => "Sunil",  
      'Designation' => "Manager");
```

```
$deptref = \%dept;
```





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- Enclose the reference variable within curly brackets { }



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- When a reference is dereferenced, the actual value is returned
- Enclose the reference variable within curly brackets { }
- Precede the left curly bracket with a character, denoting the type of reference it is



# Dereference - Variables

- Dereference a scalar variable:

**$\$ \{ \$fref \}$**



# Dereference - Variables

- Dereference a scalar variable:  
 **$\$ \{ \$fref \}$**
- Dereference an array variable:  
 **$@ \{ \$colorRef \}$**



# Dereference - Variables

- Dereference a scalar variable:  
 **$\$ \{ \$fref \}$**
- Dereference an array variable:  
 **$@ \{ \$colorRef \}$**
- Dereference a hash variable:  
 **$\% \{ \$deptRef \}$**



# Summary

**In this tutorial we learnt,**

- **Scalar References**
- **Array References**
- **Hash References**
- **Dereferences**
- **Add, remove, access elements of array/hash references**



# Assignment

- 1 Add new keys "Saturday" and "Sunday" in `hash weektemp` in `hashRefadd.pl` file
- 2 Delete key "Saturday" at the end
- 3 Print `hash weektemp`
- 4 Save and execute the program
- 5 Check your result





# 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
- 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)



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- More information on this Mission is available at

<http://spoken-tutorial.org/NMEICT-Intro>

