

# Function Overloading and Overriding in C++

Talk to a Teacher

<http://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

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# Learning Objectives



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## ▶ Function Overloading



# Learning Objectives

- ▶ Function Overloading
- ▶ Function Overriding



# Learning Objectives

- ▶ Function Overloading
- ▶ Function Overriding
- ▶ We will do this with the help of examples



# System Requirements



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- ▶ Ubuntu OS v. 11.10



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- ▶ Ubuntu OS v. 11.10
- ▶ g++ Compiler v. 4.6.1



# Introduction to function overloading



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- ▶ **Function Overloading** means two or more functions can have same name



# Introduction to function overloading

- ▶ Function Overloading means two or more functions can have same name
- ▶ The number of arguments and the data-type of the arguments will be different



# Introduction to function overloading

- ▶ Function Overloading means two or more functions can have same name
- ▶ The number of arguments and the data-type of the arguments will be different
- ▶ When a function is called it is selected based on the argument list



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# Introduction to function overriding



# Introduction to function overriding

- ▶ Redefining a base class function in the derived class



# Introduction to function overriding

- ▶ Redefining a base class function in the derived class
- ▶ The derived class function overrides the base class function



# Introduction to function overriding

- ▶ Redefining a base class function in the derived class
- ▶ The derived class function overrides the base class function
- ▶ But the arguments passed are same



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# Introduction to function overriding

- ▶ Redefining a base class function in the derived class
- ▶ The derived class function overrides the base class function
- ▶ But the arguments passed are same
- ▶ And the return-type is also same



# Difference

- ▶ Overloading can occur without inheritance



# Difference

- ▶ Overloading can occur without inheritance
- ▶ Overriding occurs when one class is inherited from another



# Difference

- ▶ Overloading can occur without inheritance
- ▶ Overriding occurs when one class is inherited from another
- ▶ In overloading the arguments and the return-type must differ



# Difference

- ▶ Overloading can occur without inheritance
- ▶ Overriding occurs when one class is inherited from another
- ▶ In overloading the arguments and the return-type must differ
- ▶ In overriding the arguments and the return type must be same



# Difference

- ▶ In overloading the function name is same



# Difference

- ▶ In overloading the function name is same
- ▶ But it behaves differently depending on the arguments passed to them



# Difference

- ▶ In overloading the function name is same
- ▶ But it behaves differently depending on the arguments passed to them
- ▶ In overriding the function name is same



# Difference

- ▶ In overloading the function name is same
- ▶ But it behaves differently depending on the arguments passed to them
- ▶ In overriding the function name is same
- ▶ Derived class function can perform different operations from the base class



# Summary

- ▶ **Function overloading**
  - ▶ eg. `int add(int, int, int);`  
`float add(float, float);`
- ▶ **Function Overriding**
  - ▶ eg. `virtual int operations();`  
`int operations();`
- ▶ **Difference between both**



# Assignment

- ▶ Write a program that will calculate the area of rectangle, square and circle
- ▶ Using function overloading



# 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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- ▶ 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>

