

# Data Fitting

**Spoken Tutorial Project**

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

**National Mission on Education through ICT**

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

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# Learning Objectives



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- Fit a given set of data points to a linear equation



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- Fit a given set of data points to a linear equation
- Add two datasets to a graph panel



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- Fit a given set of data points to a linear equation
- Add two datasets to a graph panel
- Add legends and format the legend properties



# System Requirements



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- **Grace 5.1.25**





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- **Grace 5.1.25**
- **Gedit 3.18.3**



# Pre-requisites



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- **Learner must be familiar with the Grace interface**



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- **For the prerequisite tutorials, please visit this site**  
<https://spoken-tutorial.org>



# Data Fitting



# Data Fitting

- Data fitting is a process to find a mathematical relation between two variables



# Data Fitting

- Data fitting is a process to find a mathematical relation between two variables
- An equation is used to describe the  $XY$  dataset pair



# Data Fitting





# Data Fitting

- Using an iterative process the coefficients are optimized



# Data Fitting

- Using an iterative process the coefficients are optimized
- The process returns the best possible coefficients for the equation



# Equation of a Straight Line



# Equation of a Straight Line

- A straight line is described by an equation in two variables
- The equation has the form
$$y = mx + c$$
- Here **m** is the slope of the line and **c** is the intercept



# Summary



# Summary

- Performed data fitting for a straight line
- Added two datasets in the graph panel
- Added legends to the plot
- Formatted the legend properties



# Assignment



# Assignment

- Two assignment files are provided in the **Code files** link (`parabola1.txt` & `parabola2.txt`)
- Plot them in the same graph panel
- Perform quadratic regression on `parabola1.txt` file





# Assignment



# Assignment

- Load the fitted data in the graph
- Add legend strings and reposition them inside the graph panel
- Format the appearance of the three datasets to distinguish them



# About the Spoken Tutorial Project

- Watch the video available at [https://spoken-tutorial.org/What\\_is\\_a\\_Spoken\\_Tutorial](https://spoken-tutorial.org/What_is_a_Spoken_Tutorial)
- It summarises the Spoken Tutorial project



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- 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)



# Forum for Specific Questions

- Do you have questions in THIS Spoken Tutorial?
- Please visit <https://forums.spoken-tutorial.org>
- Choose the minute and second where you have the question
- Explain your question briefly
- Someone from our team will answer them



# Acknowledgements

- 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

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

