

# Curve Fitting

Spoken Tutorial Project

<https://spoken-tutorial.org>

National Mission on Education through ICT

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# Learning Objectives



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**We will learn about,**



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**We will learn about,**

▶ **Lines**



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- ▶ **Lines**
- ▶ **Quadratic polynomials**



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- ▶ **Best fit and Adjustable fit**



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We will learn about,

- ▶ Lines
- ▶ Quadratic polynomials
- ▶ Cubic polynomials
- ▶ Best fit and Adjustable fit
- ▶ Reduced chi squared statistic and  $r^2$  correlation coefficient



# System Requirement



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- ▶ **Windows 10 (64-bit) operating system**



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- ▶ **Chrome version 101.0.49**



# Prerequisites



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- ▶ **Learner should be familiar with topics in basic mathematics**



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- ▶ Please use the link below to access the tutorials on PhET Simulations  
<https://spoken-tutorial.org>



# Link for PhET Simulation

- ▶ Please use the given link to download the PhET simulation  
<https://phet.colorado.edu/en/simulations/curve-fitting>



# Curve Fitting

- ▶ It is the process of constructing a best fit mathematical function, subject to constraints



# PhET Simulations



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In this tutorial we will use,



# PhET Simulations

In this tutorial we will use,

▶ **Curve Fitting PhET simulation**



# Summary

We have learnt about,

- ▶ Lines
- ▶ Quadratic polynomials
- ▶ Cubic polynomials
- ▶ Best fit and Adjustable fit
- ▶ Reduced chi squared statistic and  $r^2$  correlation coefficient



# Assignment



# Assignment

1. Add 5 data points to the cubic polynomial and explore the Adjustable fit option



# 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)



# Answers for THIS Spoken Tutorial

- ▶ Questions in THIS Spoken Tutorial?
- ▶ Visit <https://forums.spoken-tutorial.org>
- ▶ Choose the minute and second where you have the question
- ▶ Explain your question briefly
- ▶ The Spoken Tutorial project will ensure an answer

You will have to register to ask questions



# Acknowledgements

**The Spoken Tutorial project is funded by the Ministry of Education, Govt. of India**



# Thank you

- ▶ **This is Shraddha Kodavade, a FOSSEE summer fellow 2022, IIT Bombay signing off**
- ▶ **Thanks for joining**

