

File Encryption and Decryption

Spoken Tutorial Project

<https://spoken-tutorial.org>

National Mission on Education through ICT

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Learning Objectives

In this tutorial, we will learn to



Learning Objectives

In this tutorial, we will learn to

- **Encrypt a folder using Symmetric Encryption**



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In this tutorial, we will learn to

- **Encrypt a folder using Symmetric Encryption**
- **Generate a key**



Learning Objectives

In this tutorial, we will learn to

- Encrypt a folder using Symmetric Encryption
- Generate a key
- Decrypt the folder using the key



System Requirements

To record this tutorial, I am using



System Requirements

To record this tutorial, I am using

- **Ubuntu Linux OS 22.04**



System Requirements

To record this tutorial, I am using

- Ubuntu Linux OS 22.04
- Python 3.12.3



Pre-requisites

- You must have basic knowledge of using Linux Terminal and Python



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- For pre-requisite Linux and Python Tutorials, please visit <https://www.spoken-tutorial.org/>



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- You must have basic knowledge of using Linux Terminal and Python
- For pre-requisite Linux and Python Tutorials, please visit <https://www.spoken-tutorial.org/>
- Python libraries required for automation must be installed



Code Files

- The files used in this tutorial are provided in the Code files link



Code Files

- The files used in this tutorial are provided in the Code files link
- Please download and extract the files



Code Files

- The files used in this tutorial are provided in the Code files link
- Please download and extract the files
- Make a copy and then use them while practicing



Encryption and Decryption

- Encryption secures data to prevent unauthorized access



Encryption and Decryption

- Encryption secures data to prevent unauthorized access
- Decryption converts encrypted data back to its original form using a key



Symmetric Encryption

- **Symmetric encryption technique uses the same key for encryption and decryption**



Symmetric Encryption

- Symmetric encryption technique uses the same key for encryption and decryption
- This makes it fast and efficient



Symmetric Encryption

- Symmetric encryption technique uses the same key for encryption and decryption
- This makes it fast and efficient
- **AES (Advanced Encryption Standard)** is a strong and popular method



Symmetric Encryption

- **AES supports 128, 192, and 256-bit keys for securing files and communications**



Encryption and Decryption - Libraries



Encryption and Decryption - Libraries

- os manages operating system interfaces like file operations and environment variables



Encryption and Decryption - Libraries

- **os manages operating system interfaces like file operations and environment variables**
- **cryptography offers secure communication and data integrity through algorithms**



Securing Files with AES Encryption

- In this tutorial, we will see how to encrypt a folder named Sample and then decrypt it



Securing Files with AES Encryption

- In this tutorial, we will see how to encrypt a folder named Sample and then decrypt it
- We will use the AES algorithm in CBC(Cipher Block Chaining) mode with a 128 bit key



Summary

In this tutorial, we have learnt to

- Encrypt a folder using Symmetric Encryption
- Generate a key
- Decrypt the folder using the key



Assignment

As an assignment, please do the following:

- **Modify the program decryption.py**
- **Add exception handling to capture the missing encryption key**



About the Spoken Tutorial Project

- Watch the video available at 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



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



FOSSEE Forum

- For any general or technical questions on **Python for Automation**, visit the FOSSEE forum and post your question <https://forums.fossee.in/>



Acknowledgement

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Thank you

- This is Sai Sathwik, a FOSSEE Semester Long Intern 2024, IIT Bombay

