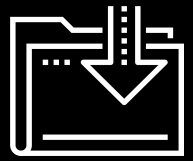
Extract, Transform, Load

Data Boot Camp

Lesson 13.1



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WELCOME

Class Objectives

By the end of today's lesson, you'll be able to:

Extract data by using Python and Pandas.

Transform and clean data by using Python and Pandas.

Parse string data into a Python dictionary.

Use list comprehensions to make code more readable.

Use regular expressions to manipulate string data.

Instructor Demonstration

Introduction to ETL

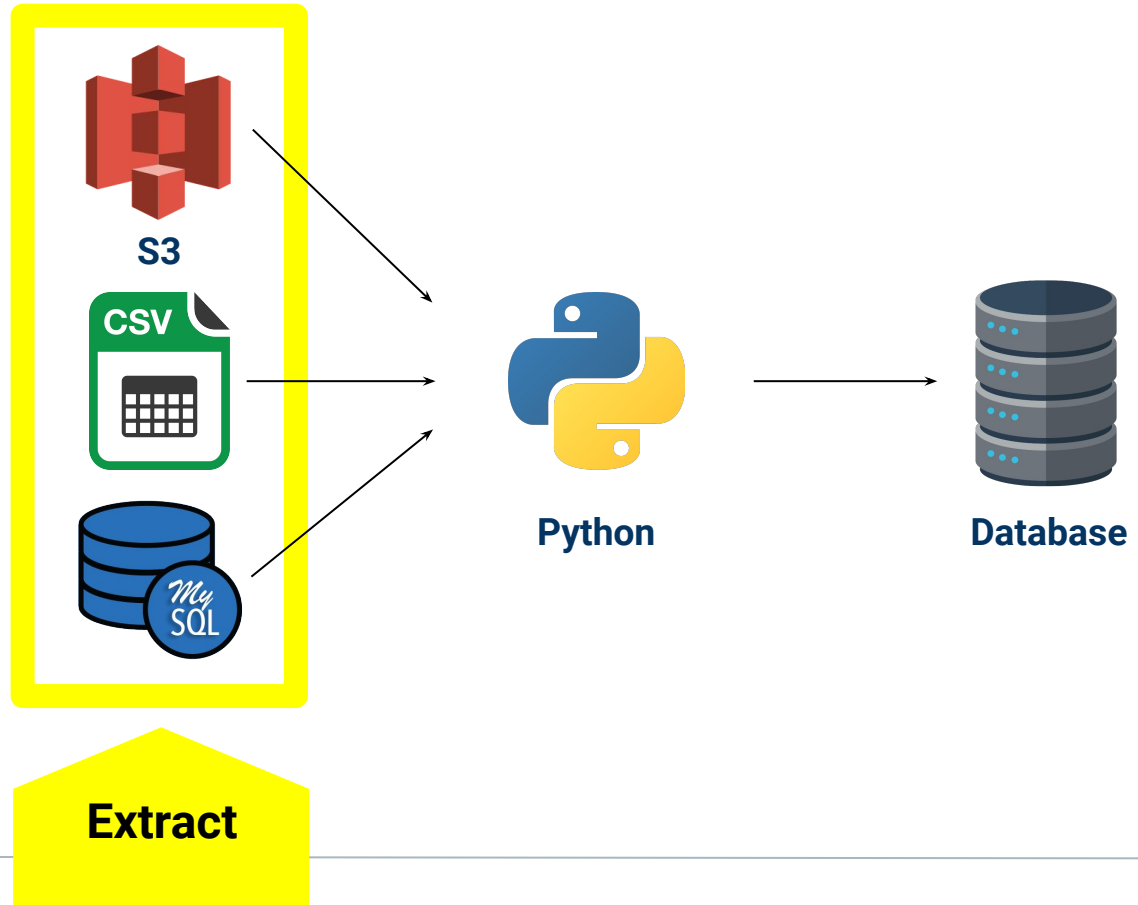
Introduction to ETL

ETL: Extract, Transform, and Load

Introduction to ETL: **Extract**

Data may come from disparate sources, such as:

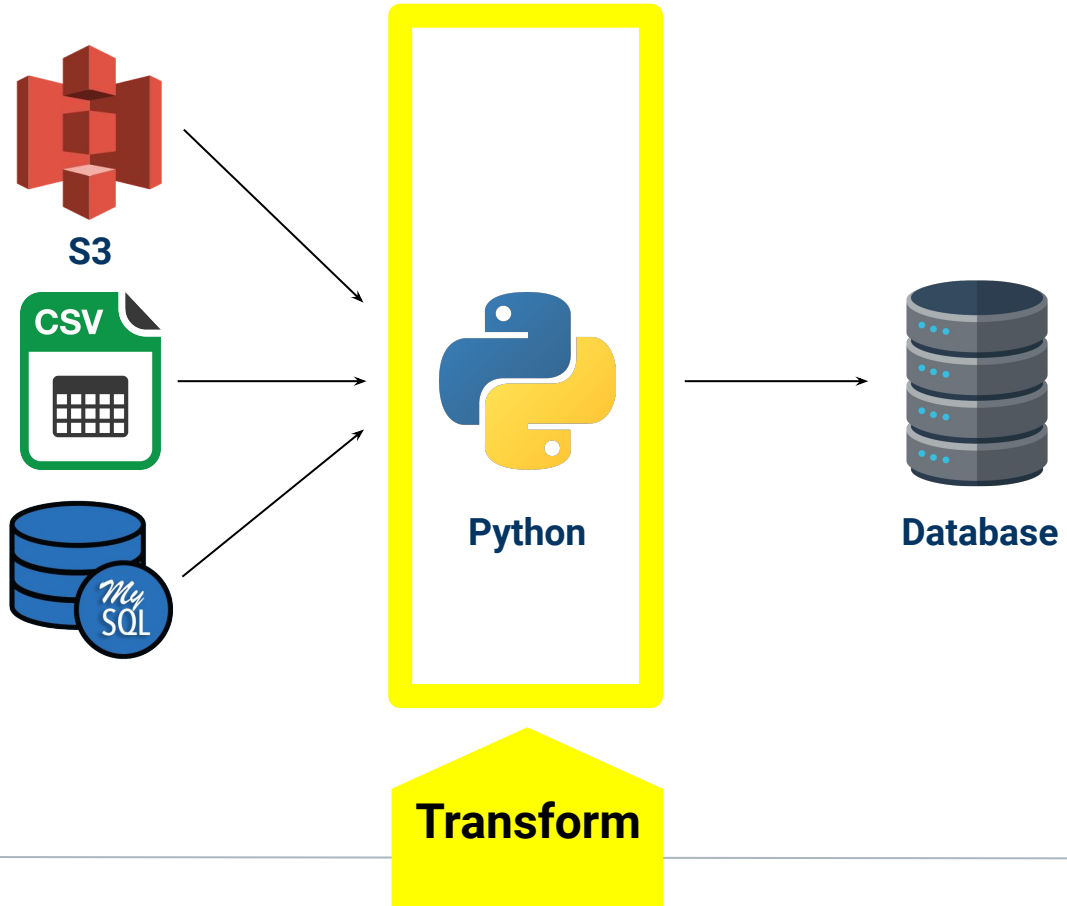
- CSV files
- JSON files
- HTML tables
- SQL databases
- Spreadsheets



Introduction to ETL: **Transform**

Transform the data to suit business needs, including:

- Data cleaning
- Summarization
- Selection
- Joining
- Filtering
- Aggregating

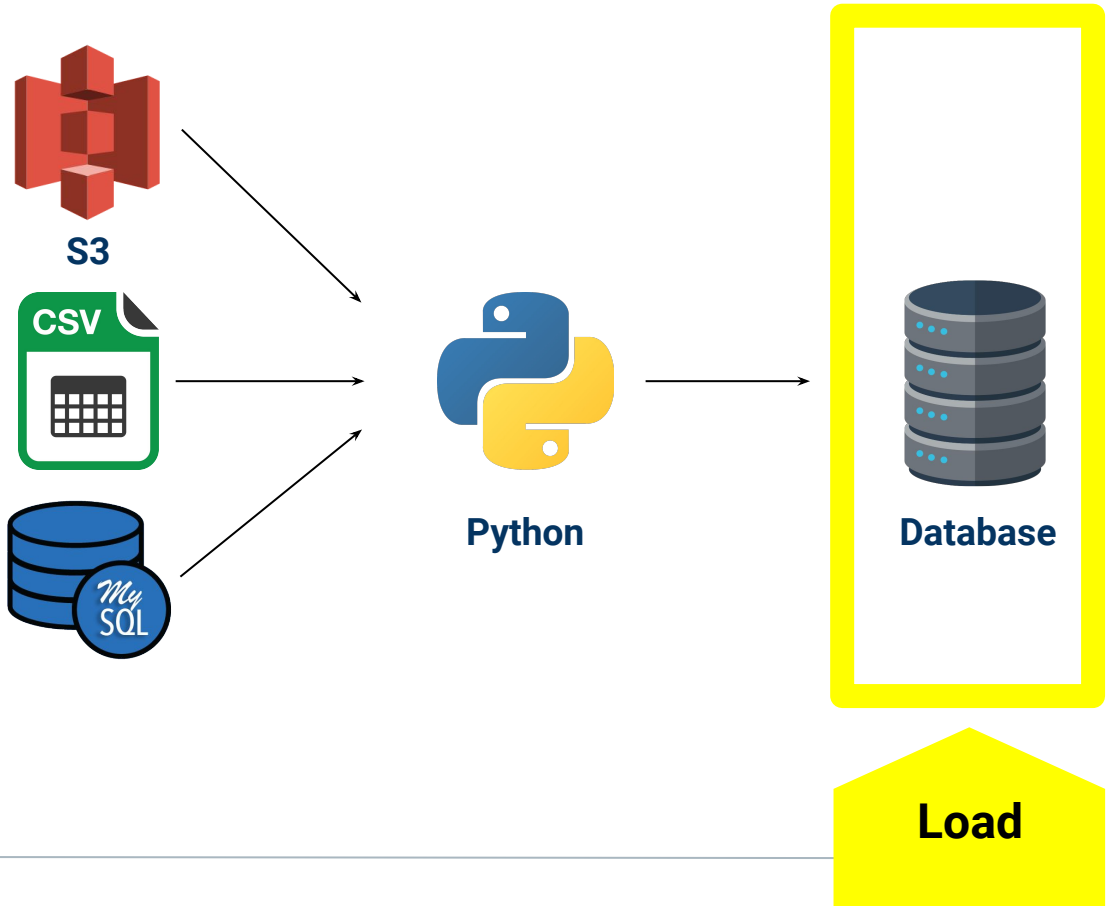


Note: We will use Python and Pandas for transformation, which can also be done with SQL or a specialized ETL tool.

Introduction to ETL: Load

Load the data into a final database that can be used for future analysis or business applications:

- Can be a relational or non-relational database
- Can be local or in the cloud
- Can be a data lake or data warehouse



Questions?

Data Transformation and Cleaning

Instructor Demonstration

Data Transformation and Cleaning

Questions?

Activity: Transform and Clean Online Orders

In this activity, you'll transform and clean a dataset that consists of online orders.

Suggested Time:

15 minutes

Time’s Up! Let’s Review.

Questions?

List Comprehensions

Instructor Demonstration

List Comprehensions Review

Questions?

Activity: List Comprehensions Review

In this activity, you'll practice using list comprehensions.

Suggested Time:

15 minutes

Time’s Up! Let’s Review.

Questions?

Break

Group Programming Activity:

Transform and Clean Grocery Orders

In this activity, you'll transform and clean grocery order data and then merge the data with another dataset.

Suggested Time:

15 Minutes

Questions?

Basic Regex Pattern Matching

Instructor Demonstration

Basic Regex Pattern Matching

Questions?

Group Programming Activity:

Regex Matching with Pandas

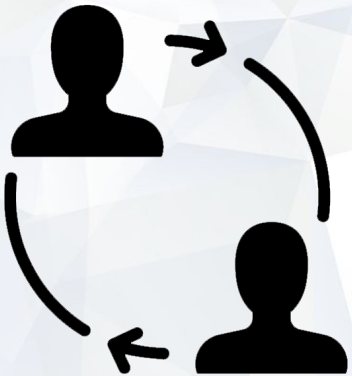
In this activity, you'll load a text dataset from *The Adventures of Sherlock Holmes* and then use regular expressions to find matching text.

Suggested Time:

15 Minutes

Questions?

ETL Mini Project



Partner Activity: ETL Mini Project

For this mini project, you'll practice building an ETL pipeline by extracting and transforming a crowdfunding dataset and then loading the data into a PostgreSQL database.

Suggested Time:

20 minutes

Questions?

The End