



KIDS & TEENS FREELANCING TRAINING INSTITUTE

PANDAS Course Outline

Module 1: What is Pandas?

- Simple definition: Pandas is a Python library to manage and explore data
 - Think of it as a super-smart spreadsheet tool in Python
 - Real-life example: Like a librarian organizing books by subject and author
 - Activity: Show how messy data becomes neat using Pandas
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Module 2: Meet DataFrames and Series

- Series = one column of data, DataFrame = table of many columns
 - Real-life example: Series is like a grocery list, DataFrame is a full menu
 - Learn to create and understand both in Pandas
 - Activity: Make a mini table with paper showing a DataFrame
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Module 3: Reading and Writing Data

- How to load data from files like CSV and Excel
 - Saving your cleaned-up work back to files
 - Real-life example: Opening a messy report and fixing it
 - Activity: Open a simple CSV in Pandas and print it
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Module 4: Cleaning Data Made Easy

- Handle missing, duplicate, or incorrect data
- Real-life example: Fixing spelling errors in a class list
- Why clean data is important before analysis
- Activity: Use a dataset and clean up missing values

Module 5: Sorting, Filtering & Selecting Data

- Sort data by values, pick rows or columns, apply conditions
- Real-life example: Find top scorers in a test result sheet
- Learn how to filter only what you want
- Activity: Practice selecting and filtering a pretend dataset

Module 6: Grouping and Summarizing Data

- Group data by categories and get useful summaries
- Real-life example: Grouping students by grade and finding averages
- Pandas functions like `groupby()` and `describe()`
- Activity: Group a dataset and show summary stats

Module 7: Real-World Uses of Pandas

- Used in data science, analytics, finance, healthcare
- Real-life example: A company using Pandas to track sales
- Why analysts love Pandas for big projects
- Activity: Explore a sample dataset and find insights

Module 8: Pandas for Future Careers

- Careers: Data Scientist, Business Analyst, Python Developer
- Pandas is a base skill for machine learning and dashboards
- Real-life example: Analysts use Pandas before making AI decisions
- Activity: Draw or present a small data story using Pandas

Bonus Materials

- Sample CSV files for practice
- Pandas concept flashcards
- Real-world dataset mini projects
- Easy-to-follow code notebook
- Certificate of Completion for Pandas

