STRINGFEST
ANALYTICS

Pandas: Half-day workshop

Lesson 1: Up and running with NumPy

Lesson 2: Introduction to Pandas

Lesson 3: Exploring DataFrames

Lesson 4: Basic DataFrame manipulation

Lesson 5: Intermediate DataFrame manipulation

Recommended prior training: Python half-day workshop

Learning Objectives

- **Student can create and operate on NumPy arrays**
- **Student can import and create Pandas DataFrames**
- **Student can inspect and explore Pandas DataFrame**
- **Student can perform basic operations on Pandas DataFrames**
- **Student can perform intermediate operations on Pandas DataFrames**

Lesson 1: Up and running with NumPy
Objective: Student create and operate on NumPy arrays
Description:
- Installing NumPy
- Creating arrays
- Inspecting arrays
- Reshaping arrays
- Array mathematics
- Random numbers

Exercises: Drills
Assets needed: None
Time: 35 minutes

Lesson 2: Introduction to Pandas
Objective: Student can import and create Pandas DataFrames
Description:
- Installing NumPy
- NumPy and Pandas
- Series and DataFrames
- Columns and indices
- Creating DataFrames
- Importing: CSV, Excel

Exercises: Drills
Assets needed: Baseball records
Time: 25 minutes

Lesson 3: Exploring DataFrames
Objective: Student can inspect and explore Pandas DataFrames
Description:
- Inspecting columns
- Printing rows
- Descriptive statistics
- Checking for missing values
- Retrieving columns

Exercises: Drills
Assets needed: Baseball records
Time: 40 minutes

Lesson 4: Basic DataFrame manipulation
Objective: Student can perform basic operations on Pandas DataFrames
Description:
- Sorting and filtering rows
- Modifying columns
- Removing columns
- Manipulating missing values
- Removing duplicates
- Aliasing modules

Exercises: Drills
Assets needed: Baseball records
Time: 45 minutes

Lesson 5: Intermediate DataFrame manipulation
Objective: Student can perform intermediate operations on Pandas DataFrames
Description:
- Creating new columns
- Reshaping: melting and pivoting
- Aggregating
- Merging DataFrames
- Exporting DataFrames: CSV, Excel

Exercises: Drills
Assets needed: Baseball records
Time: 45 minutes