**#### Exercise 1: Reading a JSON File**

**1. Create a JSON file named `data.json` with the following content:**

**```json**

**{**

**"name": "John Doe",**

**"age": 30,**

**"city": "New York",**

**"skills": ["Python", "Machine Learning", "Data Analysis"]**

**}**

**```**

import json

with open('data.json', 'r') as file:

data = json.load(file)

print(data)

**2. Write a Python script to read and print the contents of the JSON file.**

**#### Exercise 2: Writing to a JSON File**

**1. Create a Python dictionary representing a person's profile:**

**```python**

**profile = {**

**"name": "Jane Smith",**

**"age": 28,**

**"city": "Los Angeles",**

**"hobbies": ["Photography", "Traveling", "Reading"]**

**}**

**2. Write a Python script to save this data to a JSON file named `profile.json`.**

**```**

import json

with open('profile.json', 'w') as file:

json.dump(profile, file, indent=4)

**#### Exercise 3: Converting CSV to JSON**

**1. Using the `students.csv` file from the CSV exercises, write a Python script to read the file and convert the data to a list of dictionaries.**

**2. Save the list of dictionaries to a JSON file called `students.json`.**

import csv

import json

students = []

with open('students.csv', 'r') as file:

csv\_reader = csv.DictReader(file)

for row in csv\_reader:

students.append(row)

with open('students.json', 'w') as json\_file:

json.dump(students, json\_file, indent=4)

**#### Exercise 4: Converting JSON to CSV**

**1. Using the `data.json` file from Exercise 1, write a Python script to read the JSON data.**

**2. Convert the JSON data to a CSV format and write it to a file named `data.csv`.**

import json

import csv

with open('data.json', 'r') as file:

data = json.load(file)

with open('data.csv', 'w', newline='') as file:

csv\_writer = csv.writer(file)

csv\_writer.writerow(data.keys())

csv\_writer.writerow(data.values())

**#### Exercise 5: Nested JSON Parsing**

**1. Create a JSON file named `books.json` with the following content:**

**```json**

**{**

**"books": [**

**{"title": "The Great Gatsby", "author": "F. Scott Fitzgerald", "year": 1925},**

**{"title": "War and Peace", "author": "Leo Tolstoy", "year": 1869},**

**{"title": "The Catcher in the Rye", "author": "J.D. Salinger", "year": 1951}**

**]**

**}**

**```**

import json

with open('books.json', 'r') as file:

books\_data = json.load(file)

for book in books\_data['books']:

print(f"Title: {book['title']}, Author: {book['author']}, Year: {book['year']}")