Python Data Types - Practice Tasks

Basic Tasks (Understanding & Syntax)

1. **Create 5 variables using different naming conventions (snake_case, camelCase, PascalCase, etc.).**
2. **Try creating invalid variable names and observe the errors.**
3. **Create one variable of each type: int, float, str, bool. Print their type and id().**

Intermediate Tasks (Manipulation & Conversion)

1. **List Practice:**
   players = ["Rohit", "Virat", "Gill", "Dhoni"]
   - Replace "Gill" with "Surya".
   - Add "Jadeja" at the end.
   - Print the length and second last player.
2. **Tuple Practice:**
   laptop_info = ("HP", "16GB", "512GB SSD", 2024, True)
   - Try modifying one value — explain the result.
   - Access and print the last 2 elements.
3. **Set Practice:**
   countries = {"India", "USA", "India", "Canada", "UK", "USA"}
   - Print the set (observe duplicates).
   - Add "Germany", remove "UK".
4. **Frozenset Practice:**
   frozen_marks = frozenset([90, 85, 75, 85])
   - Try to add or remove values and observe the error.
   - Print its type.

Advanced Tasks (Nesting & Real-time)

1. **Dictionaries:**
   car_info = {
   "brand": "Tesla",
   "model": "Model S",
   "price": "1.5Cr",
   "features": ["Autopilot", "Electric", "Sunroof"]
   }
   - Add "color": "white".
   - Update "price" to "1.7Cr".
   - Add nested key "insurance" with {"provider": "HDFC", "valid_till": "2026"}.
1. **List of Dictionaries:**
   books = [

{"title": "Atomic Habits", "author": "James Clear"},
{"title": "Ikigai", "author": "Héctor García"},
{"title": "Zero to One", "author": "Peter Thiel"}
]
- Add a new book.
- Find and print title of the book by "Peter Thiel".

2. **Nested Dictionary Print:**
   laptop = {
   "brand": "Apple",
   "specs": {"ram": "16GB", "storage": "1TB SSD", "chip": "M2"},
   "price": "2L"
   }
   - Print "chip" value.
   - Print: Apple laptop comes with M2 chip and costs 2L.

🧠 Challenge Tasks (Think & Solve)

1. **Movie Tracker:**
   ott_data = [
   {"platform": "Netflix", "shows": ["Stranger Things", "Wednesday"]},
   {"platform": "Prime", "shows": ["Mirzapur", "Farzi"]},
   {"platform": "Hotstar", "shows": ["Special Ops", "The Freelancer"]}
   ]
   - Add a new show to Prime.
   - Print all shows in Netflix.
2. **Memory Check:**
   - Assign the same value to 2 variables.
   - Print their id() — are they same?