Tuple-Based Real-Life Python Problems with Solutions

1. Store student details (name, age, grade) using tuples and display them.

```
students = [("Alice", 14, "8th"), ("Bob", 15, "9th")]
for student in students:
    print("Name:", student[0], "| Age:", student[1], "| Grade:", student[2])
```

2. Store GPS coordinates as tuples and calculate distance between two.

```
import math
coord1 = (28.7041, 77.1025)
coord2 = (19.0760, 72.8777)
distance = math.sqrt((coord1[0] - coord2[0])**2 + (coord1[1] - coord2[1])**2)
print("Distance:", distance)
```

3. Store (account_no, amount, type) in tuples and extract only deposits.

```
transactions = [(101, 500, 'deposit'), (102, 300, 'withdraw'), (103, 1000, 'deposit')]
deposits = [t for t in transactions if t[2] == 'deposit']
print(deposits)
```

4. Each tuple has (day, temperature). Print the hottest day.

```
temps = [("Mon", 30), ("Tue", 35), ("Wed", 33)]
hottest = max(temps, key=lambda x: x[1])
print("Hottest Day:", hottest[0])
```

5. Extract all flight destinations from a list of flight info tuples.

```
flights = [("AI101", "Delhi", "London"), ("AI202", "Mumbai", "New York")]
destinations = [flight[2] for flight in flights]
print("Destinations:", destinations)
```