FLAT MAP EASY:

(1) Extracting Hashtags from Tweets?

Input:

```
List<String> tweets = Arrays.asList(
        "I love #Java",
        "Programming in #Python is great"
);
```

Output: [#Java, #Python]

(2) Flattening Nested Lists of Integers?

Input: [[1, 2], [3, 4], [5]]

Output: [1, 2, 3, 4, 5]

(3) Flattening Nested Lists of Strings?

Input:

[["apple", "banana"], ["cherry"], ["date"]]

Output: [apple, banana, cherry, date]

(4) Mapping and Flattening to Integer Lists?

Input: [["1", "2"], ["3", "4"]]

Output: [1, 2, 3, 4]

(5) Flattening a List of Optional Values?

Input: [Optional.of("a"), Optional.empty(), Optional.of("b")]

Output: [a, b]

(6) Flattening a List of Lists with Different Sizes?

Input: [[1], [2, 3, 4], [5, 6]]

Output: [1, 2, 3, 4, 5, 6]

(7) Flattening a List of Characters?

Input: [['a', 'b'], ['c', 'd']]

Output: [a, b, c, d]

(8) Flattening and Removing Duplicates?

Input: [[1, 2], [2, 3], [3, 4]]

Output: [1, 2, 3, 4]

(9) Flattening Nested Maps?

Input: [{"a": [1, 2]}, {"b": [3, 4]}]

Output: [1, 2, 3, 4]

(10) Flattening a List of Lists of Booleans?

Input: [[true, false], [false, true]]

Output: [true, false, false, true]

(11) Flattening a List of Integer Ranges?

Input: [[1, 2, 3], [4, 5]]

Output: [1, 2, 3, 4, 5]

MEDIUM:

(1) Flattening a List of Lists and Converting to Strings?

Input: [[1, 2], [3, 4]]

Output: [1, 2, 3, 4]

(2) Flattening and Summing Nested Lists of Integers?

Input: [[1, 2], [3, 4]]

Output: 10

(3) Flattening a List of Student Subjects?

Input: [{name: "John", subjects: ["Math", "Science"]}, {name: "Jane", subjects: ["English"]}]

Output: [Math, Science, English]

(4) Flattening a List of User Roles?

Input: [{username: "user1", roles: ["admin", "editor"]}, {username: "user2", roles: ["viewer"]}]

Output: ["admin", "editor", "viewer"]

(5) Flattening a List of JSON Objects?

Input: [{id: 1, tags: ["java", "spring"]}, {id: 2, tags: ["python", "django"]}]

Output: ["java", "spring", "python", "django"]

(6) Flattening a List of Mixed Data Types?

Input: [[1, "a"], [2, "b"], [3, "c"]]

Output: [1, a, 2, b, 3, c]

(7) Flattening a List of Paths?

Input: [[“/home/user”], [“/etc”], [“/var/log”]]

Output: [/home/user, /etc, /var/log]

(8) Flattening a List of Recipes with Ingredients?

Input: [{name: "Cake", ingredients: ["flour", "sugar"]}, {name: "Pasta", ingredients: ["noodles", "sauce"]}]

Output: [flour, sugar, noodles, sauce]

HARD:

(1) Flattening Nested Optional Values?

Input: [Optional.of(Arrays.asList(1, 2)), Optional.empty(), Optional.of(Arrays.asList(3, 4))]

Output: [1, 2, 3, 4]

(2) Flattening a List of Maps with Multiple Entries?

Input: [{key1: ["val1", "val2"]}, {key2: ["val3"]}]

Output: [val1, val2, val3]

(3) Flattening a List of Product Attributes?

Input: [{name: "Laptop", attributes: ["16GB RAM", "512GB SSD"]}, {name: "Phone", attributes: ["128GB", "5G"]}]

Output: ["16GB RAM", "512GB SSD", "128GB", "5G"]

(4) Flattening Nested Hierarchical Data?

Input: [[{"id": 1, "name": "A"}, {"id": 2, "name": "B"}], [{"id": 3, "name": "C"}]]

Output: [A{id=1, name='A'}, A{id=2, name='B'}, A{id=3, name='C'}]

(5) Flattening and Grouping Tags from Articles?

Input: [{title: "Article1", tags: ["Java", "Programming"]}, {title: "Article2", tags: ["Java", "Spring"]}]

Output: ["Java", "Programming", "Spring"]