**Lab #2: "Cartesian Products and Relations"**

**Objective:** Understand and implement the Cartesian product of sets and related operations.

1. **Basic Cartesian Product (Score: 60-74)**
   * **cartesianProduct(setA, setB)**: Generates the Cartesian product of two sets.
     + Input: ([1,2], ['a','b'])
     + Output: [(1,'a'), (1,'b'), (2,'a'), (2,'b')]
2. **Relation Testing and Advanced Operations (Score: 75-89)**
   * **isRelationValid(relation, setA, setB)**: Validates if a given relation (list of ordered pairs) is valid for the Cartesian product of two sets.
     + Input: ([(1,'a'), (2,'b')], [1,2], ['a','b'])
     + Output: True
   * **findRelations(setA, relationFunc)**: Finds all the relations for a given set based on a relation function.
     + Example function: "All numbers divisible by another number in the set".
     + Input: ([1,2,3,4,6], isDivisible)
     + Output: [(2,1), (4,1), (4,2), (6,1), (6,2), (6,3)]
3. **Advanced Cartesian Product with Filters (Score: 90-100)**
   * **filteredCartesianProduct(setA, setB, filterFunc)**: Generates the Cartesian product, but only includes pairs that satisfy the filter function.
     + Example function: "Only pairs where a number from setA is less than a number from setB".
     + Input: **([1,2,3], [3,4,5], filterFunction)**
     + Output: [(1,3), (1,4), (1,5), (2,3), (2,4), (2,5)]