Assignment: Working with Collections in Swift

Objective: The goal of this assignment is to help you understand how to create, manipulate, and update collections (Arrays, Sets, and Dictionaries) in Swift. The focus is on performing operations without using loops or conditional statements like if-else.

Tasks:

Easy Tasks

1. **Array Creation and Access:**
   Create an array of five different fruits. Access and print the third fruit in the array.
2. **Set Creation and Manipulation:**
   Create a set of your favorite numbers. Add a new number to the set and print the updated set.
3. **Dictionary Creation and Access:**
   Create a dictionary with three key-value pairs where the keys are names of programming languages and the values are their release years. Access and print the release year of Swift.
4. **Array Element Update:**
   Create an array of four colors. Update the second color to a new one and print the updated array.

Medium Tasks

1. **Set Intersection:**
   Create two sets of integers. The first set contains the numbers [1, 2, 3, 4] and the second set contains [3, 4, 5, 6]. Find and print the intersection of the two sets.
2. **Dictionary Update:**
   Create a dictionary with three student names as keys and their scores as values. Update the score of one student and print the updated dictionary.
3. **Array Merge:**
   You have two arrays: one contains [“apple”, “banana”] and the other contains [“cherry”, “date”]. Merge the two arrays into one and print the result.

Hard Tasks

1. **Dictionary Key Addition:**
   Create a dictionary with names of countries as keys and their populations as values. Add a new country to the dictionary and print the updated dictionary.
2. **Set Union and Subtract:**
   Create two sets. The first set contains [“cat”, “dog”], and the second set contains [“dog”, “mouse”]. Perform the union of these two sets, then subtract the second set from the result. Print the final set.

3. **Nested Collection:**
   Create a dictionary where each key is a student's name, and the value is an array of the grades they received in different subjects. Access and print the second grade for a specific student.

Note:

- Do not use loops (for, while, etc.) or conditional statements (if, else, etc.) in this assignment.
- Focus on using collection operations like append, updateValue, intersection, union, subtracting, and direct element access to solve these problems.