**Assisted Practice: 2.4 Map**

This section will guide you to:

* Create a Java project in your IDE
* Write a program in Java to create maps

This lab has three subsections, namely:

2.4.1 Writing a program in Java to verify implementations of maps

2.4.2 Executing the program and verifying it is working

2.4.3 Pushing the code to your GitHub repositories

**Step 2.4.1: Writing a program in Java to verify implementations of maps**

import java.util.\*;

import java.util.stream.\*;

import java.util.stream.Collectors;

public class Main {

    public static void main(String args[])  {

        //using Collections

        //create an empty map

        Map<String, String> emptymap = Collections.EMPTY\_MAP;

        //create unmodifiable map using Collections

        Map<String, String> unmodifiableMap = Collections.unmodifiableMap(emptymap);

        System.out.println("unmodifiableMap map values:" + unmodifiableMap);

        //singleton map

        Map<Integer, String> singleton\_map = Collections.singletonMap(10, " TEN");

        System.out.println("\n\nsingleton\_map Map values:" + singleton\_map);

        //using Java 8

        //1. toMap method of collectors class

        Map<String, String> map\_cities = Stream.of(new String[][]{

            {"MH", "Mumbai"}, {"CH", "Chennai"}, {"DL", "New Delhi"}

                        }).collect(Collectors.toMap(p -> p[0], p -> p[1]));

        System.out.println("\n\nmap\_cities values: " + map\_cities);

        //2. collectingAndThen method

        Map<String, String> capitals\_Map = Stream.of(new String[][]{

            {"MAH", "Mumbai"}, {"GOA", "Panaji"},   {"KAR", "Bangaluru"}

                        }).collect(Collectors.collectingAndThen

                        (Collectors.toMap(p -> p[0], p -> p[1]),

                    Collections::<String, String>unmodifiableMap));

        System.out.println("\n\ncapitals\_Map values: " + capitals\_Map);

        //double brace initialization

        Map<String, String> country\_map = new HashMap<String, String>();

        country\_map.put("USA", "Washington");

        country\_map.put("UK", "London");

        country\_map.put("IND", "Delhi");

        country\_map.put("GER", "Berlin");

        System.out.println("\n\nMap values:" + country\_map);

    }

}

**Output:**

