**Modern Education Society’s**

**College of Engineering, Pune**

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| **NAME OF STUDENT:** Prathamesh Kalyan Sable | **CLASS:** SE Comp 1 |
| **SEMESTER/YEAR:** Sem-3 / 2022-23 | **ROLL NO:** 015 |
| **DATE OF PERFORMANCE:**  / /2022 | **DATE OF SUBMISSION:** / /2022 |
| **EXAMINED BY:** Prof. R. H. Shende | **EXPERIMENT NO: C-7** |

###### TITLE : Implemention of Associative container using stl

**PROBLEM STATEMENT :**  Write a program in C++ to use map associative container. The keys will be the names of states and the values will be the populations of the states. When the program runs, the user is prompted to type the name of a state. The program then looks in the map, using the state name as an index and returns the population of the state.

### **OBJECTIVES:**

1. Provide programming insight using OOP constructs.
2. To lay a foundation for STL programming.

### **OUTCOMES:**

1. Develop programming application using object oriented programming language C++.
2. Analyze the strengths of object oriented programming.

**PRE-REQUISITES:**

* 1. Knowledge of template.
  2. Knowledge of Standard Template Library

**APPARATUS:**

Working Computer system with g++ installed

**QUESTIONS:**

1. What is associative container, explain any two associative containers with their functions.
2. Explain iterator and operations performed by iterator.

**Source Code:**

#include <iostream>

#include <map>

using namespace std;

class stateList {

    map<string, int> list;

   public:

    stateList() {

        list["andaman nikobar"] = 400000;

        list["andhra pradesh"] = 52787000;

        list["arunachal pradesh"] = 1533000;

        list["assam"] = 35043000;

        list["bihar"] = 123083000;

        list["chandigarh"] = 1208000;

        list["chhatisgarh"] = 29493000;

        list["dadra nagar haveli and daman & diu"] = 1078000;

        list["delhi"] = 20571000;

        list["goa"] = 1559000;

        list["gujarat"] = 69788000;

        list["haryana"] = 29483000;

        list["himachal pradesh"] = 7394000;

        list["jammu kashmir"] = 13408000;

        list["jharkhand"] = 38471000;

        list["karnataka"] = 66845000;

        list["kerala"] = 35489000;

        list["ladakh"] = 297000;

        list["lakshadweep"] = 68000;

        list["madhya pradesh"] = 84516000;

        list["maharashtra"] = 124437000;

        list["manipur"] = 3165000;

        list["meghalaya"] = 3288000;

        list["mizoram"] = 1216000;

        list["nagaland"] = 2192000;

        list["odisha"] = 44033000;

        list["puducherry"] = 1572000;

        list["punjab"] = 30339000;

        list["rajasthan"] = 79281000;

        list["sikkim"] = 677000;

        list["tamil nadu"] = 76402000;

        list["telangana"] = 37725000;

        list["tripura"] = 4071000;

        list["uttar pradesh"] = 230907000;

        list["uttarakhand"] = 11399000;

        list["west bengal"] = 98125000;

    }

    int getPopulation(string state) { return list[state]; }

    void displayAll() {

        cout << "All states data available is" << endl;

        for (pair<string, int> state : list) {

            cout << state.first << " - " << state.second << endl;

        }

    }

};

int main() {

    string str;

    int population;

    stateList database;

    retry: //retry block start point

    cout << "Enter state name(0 for all)" << endl;

    cin >> str;

    if (str == "0") {

        database.displayAll();

    } else {

        population = database.getPopulation(str);

        if (population == 0) {

            cout << "No such state is present, Please Try Again" << endl;

            goto retry;

        } else {

            cout << "Population of " << str << " is " << population << endl;

        }

    }

    cout << "Thank you" << endl;

    return 0;

}

**Output:**



