ASSIGNMENT NO. 07

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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.

Code:

#include <iostream>

#include <map>

#include <string>

#include <utility>

using namespace std;

int main()

{

typedef map<string,int> mapType;

mapType populationMap;

populationMap.insert(pair<string, float>("Maharashtra", 127));

populationMap.insert(pair<string, float>("Uttar Pradesh", 227));

populationMap.insert(mapType::value\_type("Bihar", 122));

populationMap.insert(mapType::value\_type("West Bengal", 102));

populationMap.insert(make\_pair("Madhya Pradesh", 92));

populationMap.insert(make\_pair("Tamil Nadu", 82));

populationMap.insert(make\_pair("Rajasthan", 75));

populationMap.insert(make\_pair("Andhra Pradesh", 55));

populationMap.insert(make\_pair("Odisha", 49));

populationMap.insert(make\_pair("Kerala", 44));

populationMap.insert(make\_pair("Telangana", 39));

populationMap.insert(make\_pair("Assam", 39));

populationMap.insert(make\_pair("Jharkhand", 39));

populationMap.insert(make\_pair("Karnataka", 69));

populationMap.insert(make\_pair("Gujarat", 74));

populationMap.insert(make\_pair("Punjab", 35));

populationMap.insert(make\_pair("Chhattisgarh", 35));

populationMap.insert(make\_pair("Haryana", 34));

populationMap.insert(make\_pair("UT Delhi", 22));

populationMap.insert(make\_pair("UT Jammu and Kashmir", 16));

populationMap.insert(make\_pair("Uttarakhand", 17));

populationMap.insert(make\_pair("Himachal Pradesh", 11));

populationMap.insert(make\_pair("Tripura", 06));

populationMap.insert(make\_pair("Meghalaya", 5));

populationMap.insert(make\_pair("Manipur[", 4));

populationMap.insert(make\_pair("Nagaland", 3));

populationMap.insert(make\_pair("Goa", 5));

populationMap.insert(make\_pair("Arunachal Pradesh", 1));

populationMap.insert(make\_pair("UT Puducherry", 2));

populationMap.insert(make\_pair("Mizoram", 1));

populationMap.insert(make\_pair("UT Chandigarh", 1));

populationMap.insert(make\_pair("Sikkim", 9));

populationMap.insert(make\_pair("UT Dadra and Nagar Haveli and Daman and Diu", 1));

populationMap.insert(make\_pair("UT Andaman and Nicobar Islands", 1));

populationMap.insert(make\_pair("UT Lakshadweep", 0.0003));

populationMap.insert(make\_pair("UT Ladakh", 0.00006));

mapType::iterator iter = --populationMap.end();

populationMap.erase(iter);

cout << "Total state and UT of India with Size of populationMap: " << populationMap.size() << '\n';

for (iter = populationMap.begin(); iter != populationMap.end(); ++iter)

{

cout << iter->first <<":" << iter->second << " million\n";

}

char c;

do

{

string state;

cout<<"\nEnter that state you want to know the population of: ";

cin>>state;

iter = populationMap.find(state);

if( iter != populationMap.end() )

cout << state <<"'s populations is "

<< iter->second << " million\n";

else

cout << "State is not in populationMap" << '\n';

cout<<"Do you wish to continue?(y/n):";

cin>>c;

}while(c=='y'||c=='Y');

populationMap.clear();

return 0;

}

OUTPUT:

Total state and UT of India with Size of populationMap: 35

Andhra Pradesh:55 million

Arunachal Pradesh:1 million

Assam:39 million

Bihar:122 million

Chhattisgarh:35 million

Goa:5 million

Gujarat:74 million

Haryana:34 million

Himachal Pradesh:11 million

Jharkhand:39 million

Karnataka:69 million

Kerala:44 million

Madhya Pradesh:92 million

Maharashtra:127 million

Manipur:4 million

Meghalaya:5 million

Mizoram:1 million

Nagaland:3 million

Odisha:49 million

Punjab:35 million

Rajasthan:75 million

Sikkim:9 million

Tamil Nadu:82 million

Telangana:39 million

Tripura:6 million

UT Andaman and Nicobar Islands:1 million

UT Chandigarh:1 million

UT Dadra and Nagar Haveli and Daman and Diu:1 million

UT Delhi:22 million

UT Jammu and Kashmir:16 million

UT Ladakh:0 million

UT Lakshadweep:0 million

UT Puducherry:2 million

Uttar Pradesh:227 million

Uttarakhand:17 million

Enter that state you want to know the population of: Odisha

Odisha's populations is 49 million

Do you wish to continue?(y/n):