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TREE – LAB 05

EC 4070

DATA STRUCTURES AND ALGORITHMS

01.

**Code:-**

package lab06;

public class CityDatabaseN {

double[][] cityDetails = new double[10][3];

String[][] cityNameArray = new String[10][2];

int arraySize = 3;

double longitude;

double latitude;

String cityName;

int root;

int leftNode;

int rightNode;

int idNumber = 1;

public void setCityDataDetails(String cityName , double latitude , double longitude)

{

if(root == 0)

{

cityDetails[1][0] = idNumber;

cityDetails[1][1] = latitude;

cityDetails[1][2] = longitude;

cityNameArray[1][0] = String.valueOf(idNumber);

cityNameArray[1][1] = cityName;

idNumber++;

System.out.println(cityName + " added.");

}

else

{

this.cityName = cityName;

this.latitude = latitude;

this.longitude = longitude;

cityDetails[1][0] = idNumber;

cityDetails[1][1] = latitude;

cityDetails[1][2] = longitude;

cityNameArray[1][0] = String.valueOf(idNumber);

cityNameArray[1][1] = cityName;

idNumber++;

}

}

public void insertion(String cityName , double latitude , double longitude)

{

this.cityName = cityName;

this.latitude = latitude;

this.longitude = longitude;

root = 1;

findArrayIndex(root);

}

public boolean alphabeticalOrder(String city01 , String city02)

{

return city01.compareTo(city02)>0;

}

public void findArrayIndex(int i)

{

boolean city02High = alphabeticalOrder(cityNameArray[i][1],cityName);

if(city02High == true)

{

if(cityNameArray[2\*root][1] == null)

{

cityNameArray[2\*root][1] = cityName;

System.out.println(cityName + " added.");

return;

}

else

{

findArrayIndex(i++);

}

}

else

{

if(cityNameArray[2\*root+1][1] == null)

{

cityNameArray[2\*root+1][1] = cityName;

System.out.println(cityName + " added.");

return;

}

else

{

findArrayIndex(i++);

}

}

}

public void printDetails()

{

for (int i = 1; i < arraySize; i++)

{

for (int j = i + 1; j < arraySize; j++)

{

if(cityNameArray[i][1].compareTo(cityNameArray[j][1]) > 0)

{

String temp = cityNameArray[i][1];

String temp2 = cityNameArray[i][0];

cityNameArray[i][1] = cityNameArray[j][1];

cityNameArray[i][0] = cityNameArray[j][0];

cityNameArray[j][1] = temp;

cityNameArray[j][0] = temp2;

}

}

}

for(int i =0; i<cityNameArray.length;i++)

{

if(cityNameArray[i][1] != null)

System.out.println(cityNameArray[i][1]);

}

}

public void deleteItem(String cityNameToDelete)

{

int i =0;

for(; i<arraySize; i++)

{

if(cityNameArray[i][1] == cityNameToDelete)

{

System.out.println(cityNameArray[i][1] + " deleted.");

cityNameArray[i][0] = null;

cityNameArray[i][1] = null;

arraySize--;

}

}

}

public static void main(String[] args) {

CityDatabaseN newObject = new CityDatabaseN();

newObject.setCityDataDetails("Colombo",6.927079,79.861244);

newObject.insertion("Chicago",41.881832,-87.623177);

newObject.insertion("Sydney" , -33.865143 ,151.20990);

newObject.printDetails();

newObject.deleteItem("Colombo");

newObject.printDetails();

}

}

**Output:**

