Name: Muhammad Gul Zain Ali Khan Class: BESE-5A Reg#32099 CMS-ID:110990

Introduction:

In this lab we were supposed to create a smart searching program for cities. We were provided with a CSV file containing country code, latitude and longitude of the countries. Purpose of this lab was to introduce us to hibernate and we were supposed to build mysql client using hibernate.

Approach:

For this lab a fairly simple approach was used. Hibernate was downloaded and all the jars files were extracted to one folder which was later on added to the netbeans project. To generate hibernate mapping file for POJOs, Hibernate Reveng configuration file and Hibernate default configuration file, netbeans plugin was used. Hibernate connects to the mysql database hosted on LAMP server on the local machine.

Design:

There are three classes.

1) CatalogueAdder:

Purpose of this class is to add all the cities from CSV file into mysql database using hibernate. There are three functions in this class:

1) private void readFile(String s):

This function reads the CSV file and extracts all the values of column in an array.

2) private void writeFile(String[] array):

This function writes all the values read by readfile function into mysql using hibernate

3) public void startProgram():

This function is the main entry of this class and checks for whether mysql database have been filled or not if it is not, then this function calls readfile() function which then fills the mysql database with data from CSV file.

2) Search:

This class does smart search given the latitude and longitude it shows the nearest countries to the user. This class uses hibernate to extract data from MYSQL and does extra processing on this data then.

1) private void extractData(double lat, double lng)

This function extracts data from mysql and adds it into array using hibernate

2) private String[] doProcessing():

This function does appropriate processing on the array and displays 5 nearest countries and returns them

3) public void startSearch():

This program is the main entry point of this class which calls extractData(double lat,double lng) which then calls the doProcessing() function to do the processing and returns the and display the nearest countries.