Lab 5

**Step A1:** Done

**Step A2:**

...

double dx = x2- x1;

double dy = y2-y1;

double distance = Math.sqrt(Math.pow(dx,2) + Math.pow(dy,2));

System.out.println("The distance is " + distance);

}

}

**Step A3**: Done

**Step B1:** Done

**Step B2:**

public class Distance2

{

private double rEarth = 3961.3;

private double latitude1;

private double longitude1;

private double latitude2;

private double longitude2;

//constructs the actual longitudes and latitudes of the two points on Earth

public Distance2(double lat1, double lon1, double lat2, double lon2)

{

latitude1 = Math.toRadians(lat1);

longitude1 = Math.toRadians(lon1);

latitude2 = Math.toRadians(lat2);

longitude2 = Math.toRadians(lon2);

}

public double getDistance()

{

double dis= rEarth\*Math.acos(Math.sin(latitude2)\*Math.sin(latitude1)+Math.cos(latitude1)\*Math.cos(latitude2)\*Math.cos(longitude2-longitude1));

return dis;

}

along with a tester  
public class Distance2Tester

{

public static void main(String[] args)

{

Distance2 SF\_SJ = new Distance2(37.754937,-122.428894, 37.318553, -121.957855);

System.out.println(SF\_SJ.getDistance());

}

}

}

**Step B3:** Done

**Step C1:** public String front22(String str)

{

int x = 2;

if (x > str.length())

{

x = str.length();

}

String front= str.substring(0,x);

return front + str + front;

}

**Step C2:** public String missingChar(String str, int n)

{

String front = str.substring(0,n);

String back = str.substring(n+1,str.length());

return front + back;

}

**Step D1:**

public class StringScrambler

{

public String scramble(String word)

{

String last = word.substring(word.length()-1,word.length());

String first = word.substring(0,1);

String middle = word.substring(1,word.length()-1);

String newWord= last + middle + first;

return newWord;

}

**Step D2:** Done

**Step D3:** Done

**Step D4:** Done

**Step D5:**

public class StringScrambler

{

public String scramble(String word)

{

String second = word.substring(1,2);

String third = word.substring (2,3);

String first = word.substring (0,1);

String end = word.substring (3,word.length());

String newWord= first + third + second + end;

return newWord;

}

**Step D6:** Done

**Step D7:** public class StringScrambler

{

private int i;

public String scramble(String word)

{

i = randomInt(0,word.length());

String first = word.substring (0,1);

String yep = word.substring(0,i);

String lol = word.substring (i, word.length());

String end = word.substring (word.length() -1 ,word.length());

String newWord= first + lol + yep + end;

return newWord;

}

**Step D8: Done**