**CSE 535 Assignment 2**

**Mobile Aided Contact Tracing**

**Deadline March 20th, 2022**

The objective is to develop an application that performs location logging of every user in a privacy preserving manner and it only allows you access to information when the user agrees after consultation with a contact tracing expert

Step 1: Make an UI for user log in with a password

There should be two fields one for username and another for password.

Step 2: Instantiate a database that is stored in the SD card of the smartphone. This is same as Assignment 1.

Step 3: Access the GPS for location data and obtain raw X,Y coordinates with time stamp.

Step 4: Collect location data every 15 mins. Collect signs and symptoms data three times per day. Fix a time may be at 9 am, then at 3 pm and then at 10 pm.

Step 5: For each data collected store it in the database that you created in Assignment 1. In assignment 1 your database had 12 attributes per entry. Now you will have 15 that includes all previous 12 entries plus location X, location Y, and time. Since you have location data every 15 mins and signs and symptoms data only three times a day, there will be cases where you have GPS data but no signs and symptoms data. For such cases mark the 12 signs and symptoms data as zeros.

Step 6: Password lock the database with the password provided by the user at login

Step 7: Install an Nginx server in your local machine

Step 8: Write a indexLoc.html file that takes a subject ID and day as input

It then calls a .js script that in turn calls process.php. The php file just takes the current database and replaces the old one in the local machine.

Step 9. Every 15 mins monitor the connection speed of you connection from your mobile phone / emulator to your server. (If you are doing this in an emulator then this will likely be same every time if you are not moving. Try to show at least three movements where the network connection changes. The rest can be same.) To monitor connection speed, just create a file approximately 50KB in size and upload to your server. Wait for the 200 OK signal. Monitor the time lapsed between sending the file and getting the 200 OK response. Log the connection speed in a text file along with the time stamps.

Step 10. Upload your database every 15 mins to your server.

Do this for at least 3 days (does not have to be continuous).

Grading mechanism:

Create a video demonstration of your application showing execution of each step.

Submit all code

Submit the database that was last uploaded in your server. Should have at least 3 days of data.

If all 8 steps are performed correctly 🡪 100

If only 7 steps are performed correctly 🡪 90

If only 6 steps are performed correctly 🡪 80

And so on