The SimTech Group

Deliverable G – Prototype II & Customer Feedback

GNG1103 (A00) – Engineering Design

Fall 2024

University of Ottawa

Group #17

Nour Mokdad

Pavithra Raj Mohan

Kushal Raveen Jayarathna

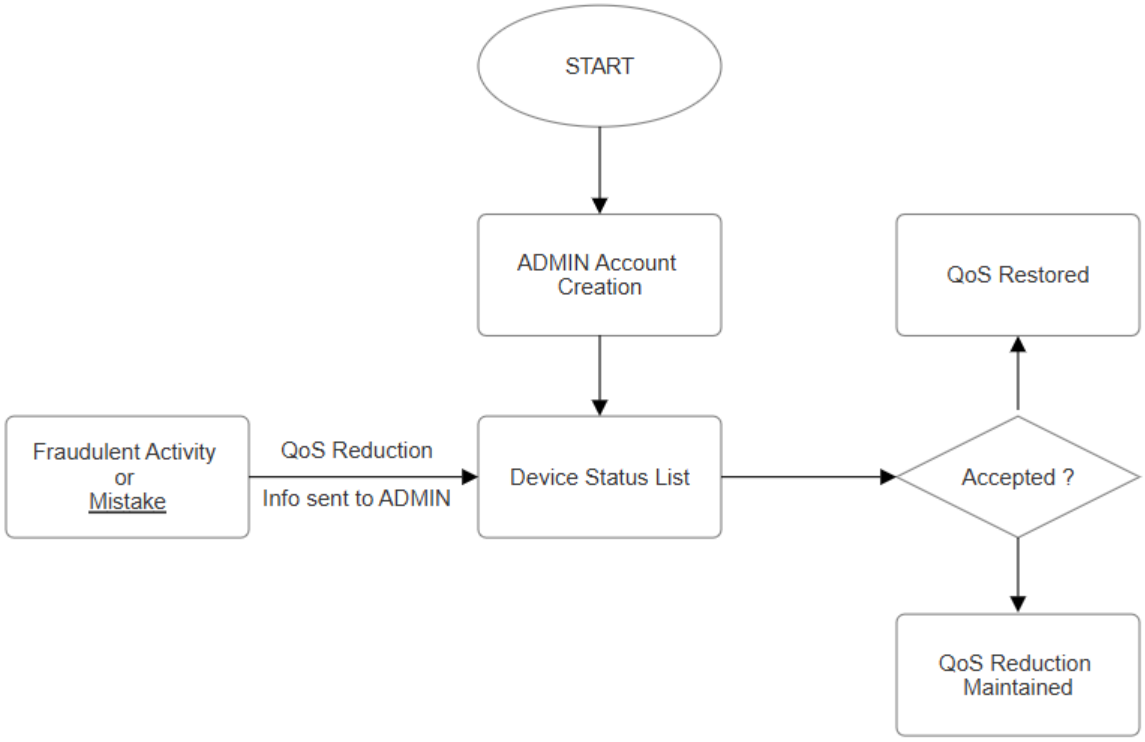
Stéphane Lauzon-Brisson

1 – Introduction

In this document, we continue our prototyping with our second prototype. This prototype will request the location of the device using the Location API, and record the time, Device ID, Longitude and Latitude.

2 – Client Meeting III Feedback

The third client meeting was a pitch presentation and went by very quickly. We presented an updated flow diagram (see below) that they seemed to agree with, and at the end they did not have any comments for us so we will proceed as planned.



3 – Prototype II: Test Plan, analysis and results

3.1 - Plan:

The second prototype has as a goal to request the Location API for the location of a device, and then displaying the Device ID, location and time that the request was made on a simple UI. This should be all the information necessary to give to the admin when a fraudulent activity is detected, and a snapshot of the event is sent to the admin.

3.2 - Analysis & results:

The utilization of the AEP Sandbox is still not working properly for our team, so this prototype will once again be conceptual and hopefully we will be able to add the API calls to our final prototype. This prototype is a low fidelity focused prototype that compares 5 location values that would be requested from the API if it were working. The program returns whether the locations are the same or whether the device may have moved, as well as the device ID number and the time at which the location checking occurred. Ideally the program would receive the Device ID and time from the API request as well.

4 – Prototyping Test Plan (no changes)

Prototype	**Test Objective**	**Description of prototype and test method**	**Results**	**Estimated test duration**
Prototype I	Test snapshot location precision	Request the location of device via Location API multiple times and compare results for precision	Quantitative: Longitude + Latitude coordinates of device	45 minutes
Prototype II	Test snapshot info accuracy	Request device info via API multiple times and compare results accuracy	Quantitative: Snapshot info (time, UE ID) can be compared to actual values	45 minutes
Prototype III	QoS reduction efficiency testing	Trigger a QoS reduction and determine if the bitrate matches the required reduction	Quantitative: Compare bitrate to the bitrate that we are supposed to be receiving after QoS	30 minutes
Prototype IV (if time permits)	UI / UX user feedback testing	Design a mockup of different interfaces and ask people (students, TA, prof?) what they think (maybe present to client next meeting if finished)	Qualitative: User feedback from various people will help us determine what color schemes are more popular with users, button shapes, etc...	1-2 hour

5 – BOM (no changes)

Item	Purpose	Cost per Unit ($)	Quantity Subtotal ($)
Shabodi NetAware Sandbox	Needed to learn and utilize Shabodi's APIs	0$	0$
Python 3.12.7	Needed to code the subsystems of our product	0$	0$
Microsoft VSCode	Needed to code to code in python outside of the NetAware Sandbox	0$	0$
Tkinter GUI library	GUI library for python that is easy to use and accesss and has a lot of documentation and tutorials	0$	0$

6 – Prototype III – Future Work

Prototype III will be a comprehensive prototype. We will be adding the functionalities of Prototype I and prototype II, as well as utilizing the Quality-of-Service API. The app will request the location and information of a device on the network, while also reducing the Quality of Service of the Device. Before design day it would be ideal to add the functionality of returning quality of service to the device if the admin sees fit.

7 – Conclusion

To conclude, after receiving little feedback during Client meeting III, we will continue following our prototype testing plan. Likewise, our BOM remains the same. We will be finishing a comprehensive prototype for next week's deliverable, and we will attempt to have everything finalized by design day.

8 – Trello Board Link

https://trello.com/b/u6dVFniw/gng1103-project