The SimTech Group

Deliverable E – Project Plan and Cost Estimate

GNG1103 (A00) – Engineering Design

Fall 2024

University of Ottawa

Group #17

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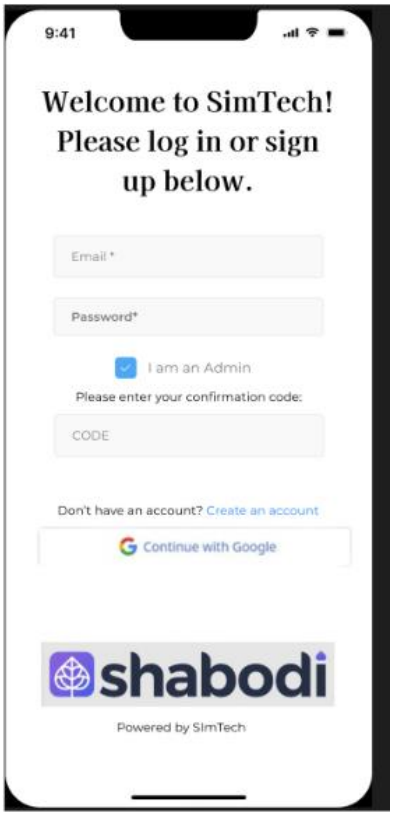
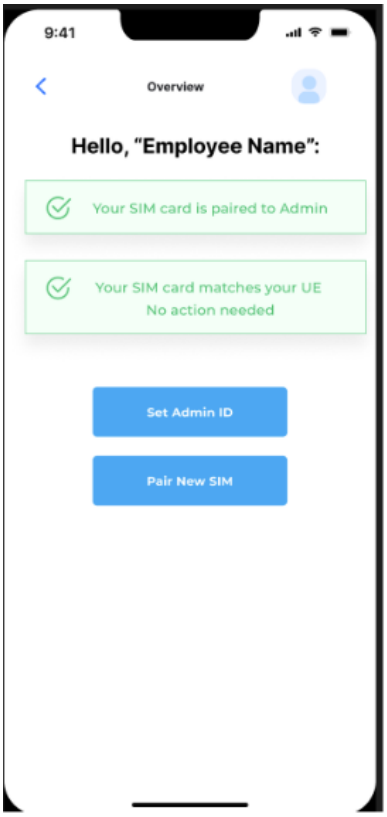
1 - Introduction

After agreeing upon a finalized design concept for each of our subsystems, this document will set out a plan for prototyping and testing our design. A list of tasks to complete as well as a cost spreadsheet are also included. Finally, a list of possibly risks is included, as well as contingency plans associated with each risk.

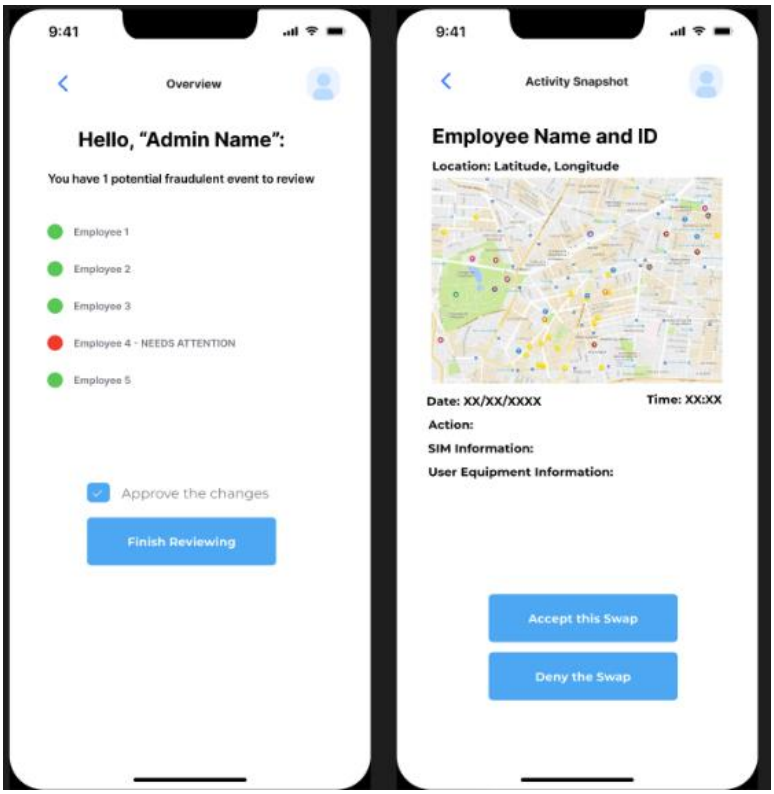
2 - Refined Final Concept:

2.1 - Detection

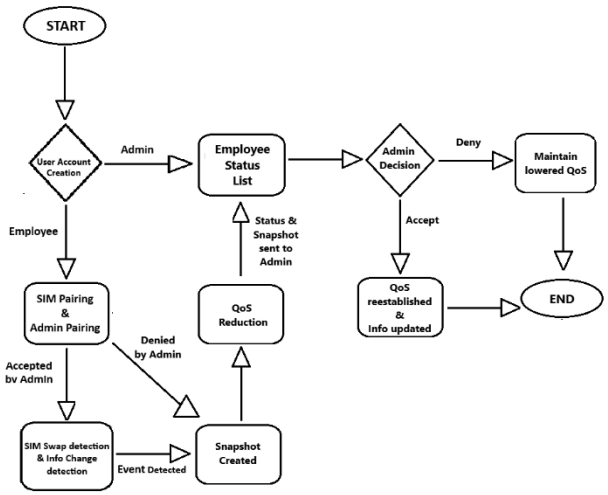




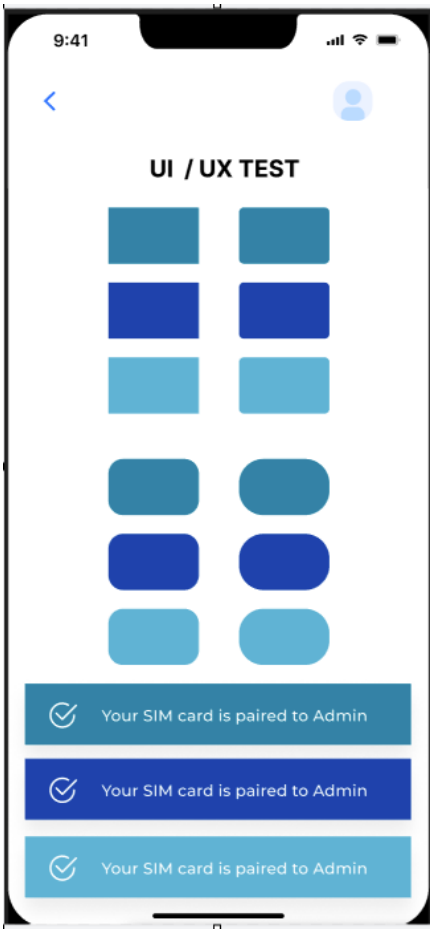
2.2 - Alert/Snapshot



2.3 - QoS Reduction:



2.4 - UI/UX:


9:41
UI / UX TEST
Your SIM card is paired to Admin
Your SIM card is paired to Admin
Your SIM card is paired to Admin

3 – Tasks to be Completed

Task	Description	People Involved	Due Date
Set up Shabodi Sandbox account	Set up NetAware for the team and get familiar with system	All group members	October 29th, 2024
Familiarity with Shabodi APIs	All group members have limited knowledge with regards to APIs, and we should learn how to integrate APIs to the application	All group members at various levels depending on expertise	November 7th, 2024 (2 weeks)
Program the Detection System	Utilize the NetAware Sandbox to write a program that detects when fraudulent activity takes place	Nour	November 15th, 2024
Program the Alert/Snapshot System	Program application to save all relevant information (location, time, SIM numbers, etc), and send it to admin account.	Pavithra	November 15th, 2024
Program the QoS Reduction system	Utilize the NetAware Sandbox to write a program that reduces a UE's QoS when requested	Stephane	November 15th, 2024
Work on UI/UX integration	Change colors of buttons, background, etc., to match Shabodi's website.	Kushal	November 26th, 2024
Design day presentation + in-class presentation	Prepare materials and rehearse for design day presentation	All team members	November 27th, 2024

4 - Project Risks

Risk	Severity	Likelihood	Associated Contingency Plan
SandBox doesn't work / no access	Severe	Medium	Come up with physical mockups or simulations instead
Data Corruption / Loss of Data	Severe	Low	Take weekly back-ups and use them to recover the data
Malfunction (un-fixable bug)	Medium (depends on situation)	Medium	Debug, request assistance from TA, or other classmates

5 - Project Costs

5.1 - BOM for Project

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$
Heavy Weight Construction Paper	Possible creation of Various IoT props to simulate SIM swapping	2.49$/ 50 sheets	2.49$
Color Markers	Possible creation of Various IoT props to simulate SIM swapping	6.99/pack	6.99$

Subtotal: 9.48$

Taxes (ON): 9.48$ * 0.13 = 1.23$

Final Cost: 10.71$

6 - References for costs

Product	Resource
Heavy Weight Construction Paper	https://www.michaels.com/product/9-x-12-construction-paper-by-creatology-50-sheets-10625491?michaelsStore=9181&inv=5
Color Markers	https://www.michaels.com/product/broad-line-washable-mini-markers-by-creatology-10633447?michaelsStore=9181&inv=1

7 - Prototyping Testing Plan

Test number	Test Objective	Description of prototype and test method	Results	Estimated test duration
1	Test snapshot location accuracy	Trigger a fraudulent activity detection at various locations and determine accuracy of resulting snapshot	Quantitative: Longitude + Latitude coordinates of taken snapshot, compare to actual location	45 minutes
2	Test snapshot info accuracy	Trigger fraudulent activity detection of different types and determine the accuracy of the snapshot info	Quantitative: Snapshot info (time, SIM ID, UE ID, action, etc...) can be compared to actual values	45 minutes
3	Admin notification accuracy testing	Trigger multiple types of fraudulent activities and determine accuracy of notifications	Quantitative: Number of notifications relative to number of fraudulent triggers	45 minutes
4	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
5	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

8 – Trello Board Link

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