Final Report

Thermal Scanning App

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Senior Design 1
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1 Introduction

Corserva is a managed IT service provider that develops and sells custom software and hardware solutions. Corserva's customers include hospitality and other in-person focused related businesses. Official CDC guidelines to businesses encourage taking steps to prevent the spread of Covid-19 among employees and customers, including temperature checks. Corserva has sponsored this project to produce a thermal screening solution capable of processing people quickly and without requiring user interaction to minimize additional contact.

The scope of this project is to produce an application and companion mobile application to measure and report high temperatures of people passing through the system. The thermal camera will use an auto calibration system to increase accuracy of readings. Mobile application to smooth the onboarding process and provide reports to users.

The business scope is to provide business with a kiosk and mobile app system that will make it easier for them to maintain safety precautions during the current Covid 19 pandemic while also increasing the speed in which staff and customers can enter their place of business.

2 Functional Decomposition

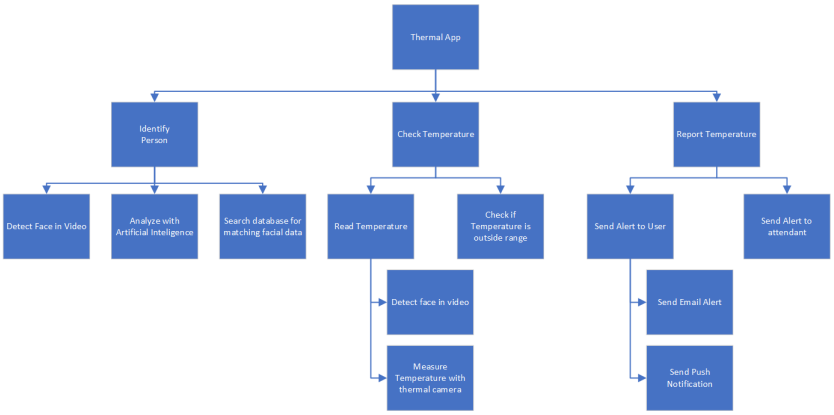

Figure 1: Functional Decomposition Diagram - Thermal scanner

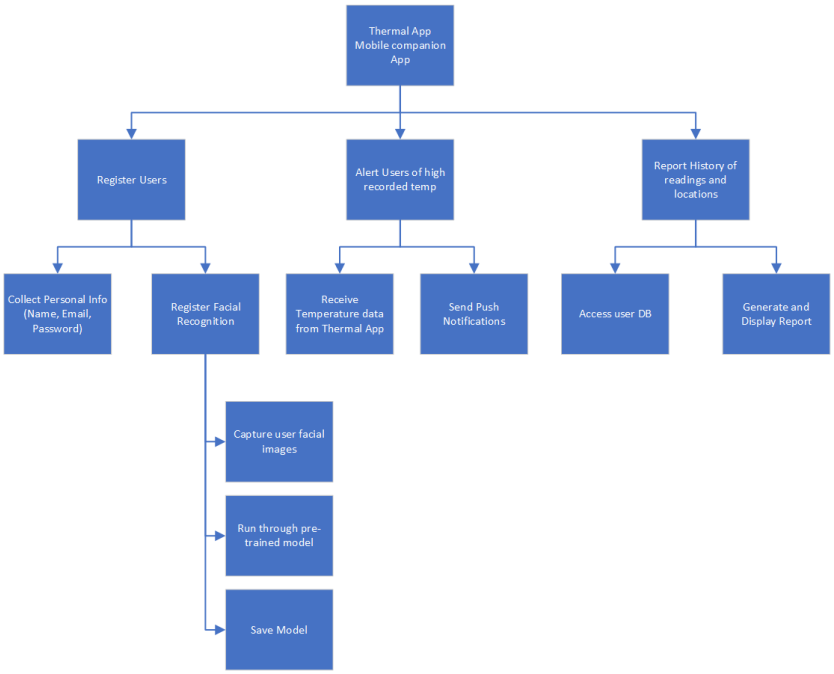

Figure 2: Functional Decomposition Diagram - Comapanion App

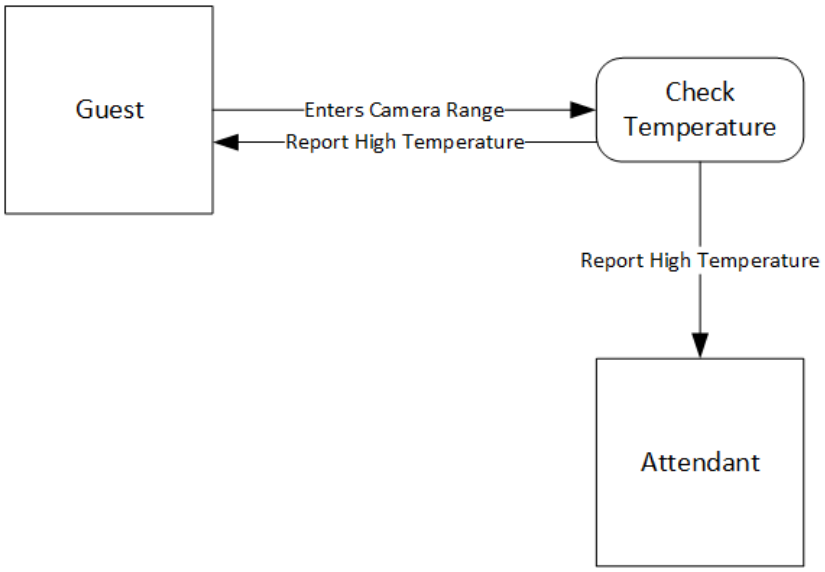

Figure 3: Top Level Data Flow Diagram

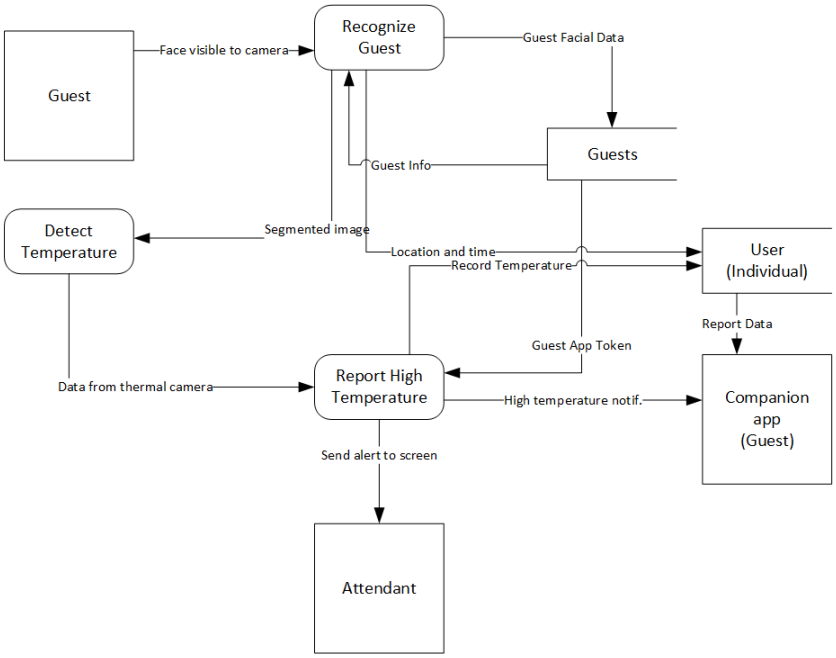

Figure 4: Level 1 Data Flow Diagram

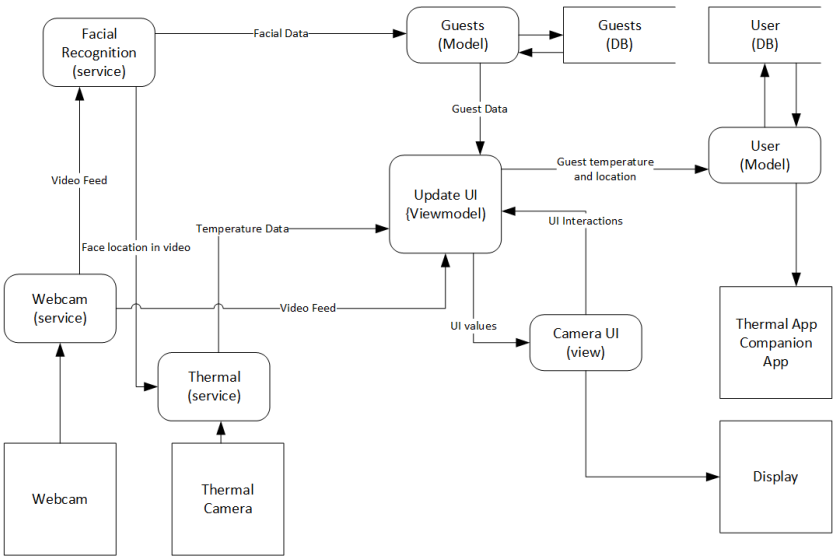

Figure 5: Level 2 Data Flow Diagram

3 Data Flow and Application Structure

4 User Stories and Tasks

5 Pseudocode

6 Reflection

7 Conclusion

8 Team Member Participation

Participation was split as follows:

- Colter Roche: 50%
- Jose Bastardo: 50%

Epic	User Story
Provide facial recognition for user identification and measure user temperature	As a user, I want the system to recognize me in under 2 seconds so I can save time
	As a kiosk attendant, I want to see a confirmation that the user is recognized, for security purposes
	As a kiosk attendant, I want temp measurements to be accurate withing a degree, so I do not have to check extra people/miss people
	As a kiosk attendant, I want the thermal camera to self-calibrate, to avoid the need for time consuming troubleshooting
Provide notifications and reports to users and attendants	As a kiosk attendant, I should be alerted if a registered user is detected with a high temperature to perform a manual temperature check
	As a kiosk attendant, I should be alerted if a person is not recognized as a registered user
	As a user, I should be alerted if my temperature is too high
Provide a user onboarding system	As a user, I want to register through a mobile app, for easier remote registration
	As a user, I want to register facial data through the app, so I can skip in person registration
	As a system admin, I want to have control over what information is collected from users and how long the data is stored, to increase security

Table 1: Epics and User Stories