Deliverable 3: Design report

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Table of Contents

[Introduction 2](#_Toc129910129)

[Feedback for Deliverable 2 2](#_Toc129910130)

# Introduction

For this short design report, we will be discussing the simulation results with respect to the hardware design and the required system functionalities. This will include the state machine that we made in Multisim, the voltage regulator circuit, the switch debouncing circuit, the 2 timing circuits that we decided to implement (the one responsible for handling the 8-second delay between the fall being detected and the alert being sent out to allow time to specify that it is a false alarm and the one responsible for handling the 30-second delay to allow confirmation of the emergency contact responding to the alert) and the progress on the TinkerCad circuit that we made of the system. We will also include a section that focuses on the feedback that we received for the previous deliverable and how we responded to it.

# Feedback for Deliverable 2

As part of the feedback for our previous deliverable, we were asked to test the Multisim state machine as the previous design of the state machine would prove to be erroneous. We handled this by detailed analysis and made some edits to the circuit by adding an extra input and changing the output for 2 of the states in the circuit. This ended up changing the outputs and the transition equations in the state machine and required some time to make the changes, but it turned out to be the solution to our problem, as we tested the circuit after this, and the circuit operated without any errors. The only issue with the circuit was the timing issue, which we needed to implement the timing circuits to rectify. We were also asked to expand on the marketing section of our report, as it looked unfinished. This problem was settled in the design presentation that we had to do last week, as we not only included a list of potential clients but also improved the section on the marketing strategies to be more specific and concise.