ECE441: Project Executive Summary

20 Second Motion Triggered Countdown Timer

Group 04
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The purpose of this project is to aid the general public's health by ensuring that the user of this device is following the proper CDC guidelines for washing hands which states that a minimum of 20 seconds must be used for washing one's hands. The primary stakeholder and project partner Mark Van Der Pol is a Internet of things software engineer who will be taking the technical lead on this project being responsible for any engineering decisions that come up and along with insight from their business partner Adrienne Fritze who will look into the marketing aspects along with user personas and team dynamics. The project will serve not only the common people in their households but will also be an asset within the sanitation stations of hospitals, restaurants and local businesses where each person can follow the proper standards of hand washing with the aid of this small timer that provides you the exact time needed to wash your hands.This project in its simplest form is a timer that can be used to monitor the time we wash our hands, the benefit of this is that it will do so without the push of a button. With the dangers of COVID personal contact with a stranger is to be avoided as best as possible while maintaining good hygiene. With its motion triggered ability the timer will be able to initiate a 20 second hand washing countdown by simply waving our hands near it therefore not being in contact with any germs/bacteria present or made present due to contamination through another user. The device should be easy to use for most people and should be self intuitive with little to no instructions such that 9/10 people between the ages of 15-45 should be able to use this timer with ease and no hassle. The goal of this project is to promote proper hand washing protocols and make the 20 second habit more convenient and less annoying rather than attempting to sing happy birthday twice or any other odd tricks. This will be an affordable and economical method that will be able to get integrated into the routines of all people. The aim is for this to be a tool for all be they children, normal adults or differently abled people. Along with its digital display to show the 20 second countdown the aim is to develop a product that will have some form of audio signal for those with visual disabilities or blindness thus providing multiple methods of integrating the hand washing protocol.It will be a low budget item with an aimed market price of lesser than $10 with the convenience of a rechargeable battery and waterproofing to ensure protection from the most vigorous of hand washing. The final significant result of this project as a whole for its stakeholders is that they will have the satisfaction of knowing they played a part in improving the health care routines of multiples of people with the aid of this simple tool showing how this device demonstrates how we can use technology to make a difference for humanity and we can accomplish this by sharing our efforts and skills with the world without being consumed by a profit motive. This is the utter essence and core mission of their company RemarkableArts that they wish to share with others.

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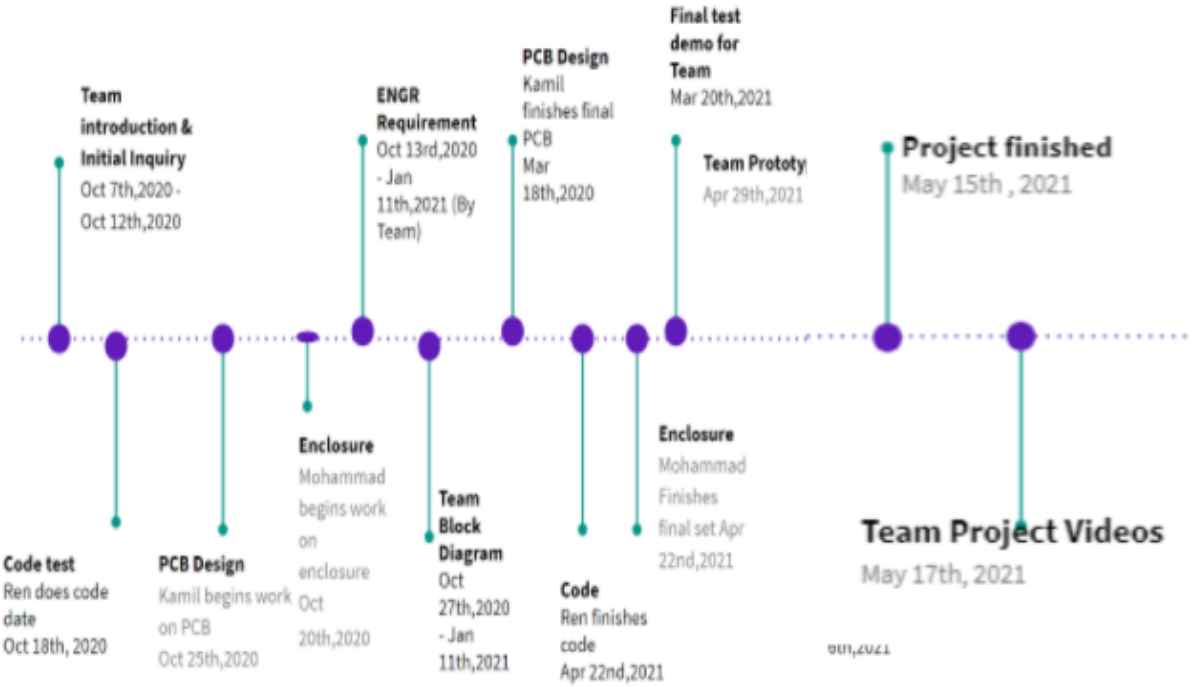
External Timeline:



Key lessons:

In this project, we learned that communication is very important for a team. Especially in the COVID-19, communication is harder than normal. That makes us feel more about how important good communication is for a team. Due to COVID-19, it is very hard to meet with team members because we are not all in the United States. We just could meet with Zoom or use WhatsApp to communicate. Thus sometimes we would misunderstand the other guys' ideas. For example, in the first version of PCB, we have some misunderstandings with the circuit design because the first version PCB connected the wrong wire and we got a useless board and we had to remake and order it again. If we communicate well with each other, that problem could be avoided.That is the most important lesson we learned from this project.