Problem Statement: People with memory loss problems (both short and long term) often forget to maintain sanitization particularly hand washing.

Project Idea description:

Project title and overview

**Handwashing reminder system and indicator:** A watch or band type of device that will detect the moisture while washing hands and then send the time data to the mobile application. The mobile application will then remind the user to wash hands after a certain interval of time. Also, there will be an indicator with a timer of 20 seconds which will start automatically once the user starts washing their hands and it will notify the user to wash his/her hands for at least 20 seconds as advised by the Centers for Disease Control and Prevention (CDC). This will ensure that the user maintains proper sanitization of hands.

Purpose of the project

According to the Centers for Disease Control and Prevention (CDC), “*Keeping hands clean is one of the most important steps we can take to avoid getting sick and spreading germs to others. Many diseases and conditions are spread by not washing hands with soap and clean, running water.*”

But the problem is that most of the people with memory loss problem or even common people, do not follow the idea of washing hands properly because of which they usually get infected by communicable diseases like COVID-19. Not only it affects the person who doesn’t maintain sanitization of his/her hands but also it is a driving force to spread the virus. So to solve this problem proper technical assistance is required that will help the people to maintain their handwashing habit properly.

Significance

Concerning the current situation and problems, our “**Handwashing reminder system and indicator”** will play a significant role to maintain the hygiene and proper health of the user. It will also help to control infectious diseases.

According to the study of CDC, about 1.8 million children under the age of 5 die each year from diarrheal diseases and pneumonia, the top two killers of young children around the  
world. Handwashing with soap could protect about 1 out of every 3 young children who get sick with diarrhoea, and almost 1 out of 5 young children with respiratory infections like pneumonia. Washing hand with soap remove germs much more effectively. Good handwashing early in life may help improve child development in some settings. Estimated global rates of handwashing after using the toilet are only 19%.

Approach and Methodology

Our project is based on the application of water sensor which will detect the presence of water on the hands of the user while handwashing. The data will be then transmitted to a mobile application with the help of a NodeMCU. The mobile app will then save the time of handwashing so that it could remind/notify the user to wash hands after a certain interval of time. It will also trigger a 20 seconds timer as soon as it detects water and help to keep the track of time while washing his/her hands. The whole system i.e., the water detector, the NodeMCU and the batteries will be together packed in the form of a wearable device (watch/band).