Implementing Proper Hand Washing with The Help of Persuasive Technology

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Quick Background

Foodborne illness and Nosocomial infections

➤ Research shows that many of the disease-causing germs and bacteria are directly associated with poor hand washing hygiene habits of food service employees and healthcare professionals, which in turn bring about food borne illnesses and Nosocomial infections.

➤ Foodborne illnesses occur due to poor hand washing compliance of workers in the food industry.

➤ Nosocomial infections occur due to poor hand washing compliance of healthcare professionals.

➤ Objective of this proposal is to incorporate persuasive technology, in order to help alleviate the health and financial burdens associated with foodborne illnesses and Nosocomial infections.

Design Requirements

➢ The game that was created last year must now be taken a step further.

➢ Get the hardware side to connect and work

➢ The android tablet must have a security mechanism to shut off if the tablet is ever unplugged. It should also be protected inside of the security tablet holder.

➢ For all the different things that we may implement, the tablet and code must be able to record the frequency and duration of the person washing their hands.

➢ For each of the things we may create, they all must last for just 30 seconds and then shut off.

Related Works

➢ Some of the first experiments were conducted in hospitals, an industry which also struggles with lack of proper hand washing, in order to alleviate the effects of foodborne illnesses and nosocomial infections.

➢ Using location, data, and monitoring systems, they were able to track if and for how long a nurse or doctor washed their hands.

➢ Vitalacy company created the Vitalacy wristband, to keep track of hand washing practices. Wristband is worn by employees at all times so that if an employee approaches a hand washing station, a sensor connects with the wristband and keeps track of statistics like duration and hand movement.

Facilities and Equipment

- ➢ Android SDK: The app, already programmed in C#, will be using Unity.
- Unity: Is a 3D cross-platform engine which is used to make games and applications.
- UofA Kitchen: This is the main facility which the testing will be held to see if they should continue to work on this idea.
- USB foot pedal: As employees wash their hands, they will have to push the foot pedal whenever they want their character to jump or go under a certain object.
- Soap Dispenser Sensor: Attached to the Soap Dispenser, the sensor will start up the game once the employee put their hands under the soap dispenser.

- ➢ Android tablet: A tablet will be used for debugging and running the application. This will allow the quick detection of any problems in the code. It will also be used to extend the ideas of the app.

- ➢ Security Tablet Holder: To protect the tablet from theft, and will be fastened on the wall.

Technical Steps

➢ Set up git repository.

➢ Get the previous project running in unity.
1. Create image assets.
2. Create project files.
3. Link image assets to code.

➢ Push the base project to GitHub.

➢ Install the game onto the tablet.

➢ Check for performance optimization opportunities using Android Studio monitor.

➢ Do some durability testing to make sure the game doesn't crash from memory leaks or other long-running operations.