# Introduction to the project, Objectives and User Needs (15%)

# Design Solutions (40%)

The evolution of the product

The project started initially as a different product altogether (portable handrail to attach on during public transport use to avoid touching public transport handrails) - through the ideation process, it was eventually settled on making a sanitizer band. Further specifications, such as the target age group, and band specifications were determined throughout the design process and through obtaining user feedback.

Some of the earlier products that were ideated included:

* Multi-purpose band - containing tissues/wet wipes, mask holder, potentially UV light, sanitizer spray
* Portable disinfection machine - similar to the ones available in large shopping malls in Hong Kong, these were made for the purpose of on-the-go disinfection
* Portable handrail (as described above)

One the band sanitizer was settled, current competitors were researched. It was found that band sanitizer does already exist (see: Squeezyband™, multiple types available on Taobao, Amazon etc). It was realised this product must be more functional than currently available products, and that the target demographic must be narrowed.

The target demographic was narrowed down to young children (aged between 4 - 7). This is because through market research, it was found that young children have the worst hand hygiene out of all demographics; there is clear growing concern about hand hygiene for parents of young children during the COVID-19 pandemic. The pain points identified were the lack of hand hygiene of children, the growing concern and worry of parents sending their children back to school due to their poor hand hygiene, and the potential spread amongst young children due to poor hand hygiene.

Thus the current product was made with the following features: vibrational reminder system, light-up LED system and attractive/colourful watch with designs to appeal to children.

The evaluation of the final prototype

Technologies involved in the product

How it is meeting the needs of the end-user

The product meets the needs of the end-user through the following features:

* Vibrational reminder - the vibrational reminder happens every one hour to remind the child to sanitize their hands.
* Pressure sensor (piezoelectric) - this sensor can detect whether the child has successfully ‘pushed’ the sanitizer compartment to sanitize their hands. Upon successful sanitization, one of the ten LED lights will light up. With every subsequent time, another LED will light up.
* LED light-up - this not only ‘gamifies’ the product but also can tell parents how many times across the school-day the child managed to sanitize their hands, thus reducing parents anxiety about their child’s hand hygiene.
* Simple electronics - as many schools prevent children from bringing in high-tech mobile phones, watches and other electronics, the basic electronics here will not disrupt the child during the school day.
* Colourful/attractive designs - to further appeal to the child such that they feel more inclined to comply with regular sanitization.

Problems they had and how did they overcome those?

Sustainability

Sufficient information provided to carry this project in the future

Sufficient images and figures for explanations

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| User Experience (30%)  * How did they contact users to get feedback and comments? * How often did they contact them? * What are the changes they have done to the product based on user feedback? * How the user feedback helps to have a better, sustainable solution. |  |
| Implementation Plan/ Future plan, recommendations and conclusion (15%)  * What are the short term (less than 3 months) and long term plan for the project (Should have a clear and feasible timeline) * How is the product going to reach the end user? * In-line with local customs   Summer Implementation Plan  Briefing+timeline:  Social media:  As Facebook and Instagram are the most popular social media among middle-aged Hong Kong citizens, Facebook and Instagram pages would be created in June as the main platforms for propagation as well as communication with the local parents, who may become the purchasers. The parents who have participated in our parent survey and introductory workshops would be invited to follow us via email. After every outreach to the kids, we can give them a poster with the social media information such that the interested parents would follow us too.  On the pages, the demonstration video would teach the children how to sanitize their hands using our product and show the parents how to refill the container using the squeezing bottle attached. Once changing the battery or any new features is available in the latest version, we would put an additional demonstration video. When our team is going to conduct new workshops and offer retails somewhere, we could notify them via social media so as to keep updating our activities with the parents. For enquiries regarding our activities, difficulties in using our product, etc., parents can just directly message us via social media and our team will reply to the inquiries every day.  Networking in the community:  Many of our target users would like to join activities organised by the community center near their home during summer vacation in July. In our freshman year, we built certain networks with the community centers or even the children served thanks to the HLTH1000 requirement. If the community centers still open in July, we can do some voluntary services for a month and get along with the kids in the center. Then, we may request a time slot for an online introductory workshop on Zoom or Google Meet with social workers in-charge. If we have served the center for a long period of time, we can ask them directly.  Introductory workshops to the public:  In order to introduce our product by suggesting the importance of hand hygiene to the kids and their parents, we are supposed to hold at least two workshops in early August, adapting the same plan (please refer to the appendix) as the introductory workshop in the spring semester which seems to be fascinating for the kids. Hopefully, we can get around 20 children and parents from any two community centers each online session. |  |