

# Hong Kong Student Science Project Competition 2022

Template of Extended Abstract (Invention)  
(Word Limit: 1,000 words, Pages: 2 pages only)

**Team Number: JAPE073**

**Project Title: Elderly Smart Ears**

**Project Type: Invention**

**To our best knowledge and after thorough literature research, as at 4/7/2022 , there ~~are~~ are no\* similar works. If there are, the reference links are as below:**

NIL

**The enhancement our project has made for the existing related products or research is summarized as below:**

NIL

**\*Please delete if not applicable. HKSSPC values the originality of works. Students must conduct literature research thoroughly to ensure that their works are unique, and to list relevant reference materials to complement the research or invention.**

## **I. Background**

The number of phone scams in Hong Kong is rising sharply. Elderly people are usually the main target of the scams. They suffered from financial loss and their mental health was affected after the fraud. Although the police have reminded them very often, they still fall into the trap out of their concerns and love to their family members.

## **II. Objectives**

To help prevent the elderly from falling into the trap of telephone or face-to-face scam.

## **III. Methodology**

By designing an apps with apps inventor 2 and using the IoT technology to help the elderly.

## **IV. Design of Invention**

Function 1: Contact list check

The apps would help check whether the incoming call number is in the contact list. This helps identify those anonymous call.

Function 2: Scam related words warning

While sensitive words such as “arrested”, “money”, e.t.c. are detected. During a conversation with an anonymous caller, if such sensitive words are detected, the apps will send a message to alert the users and their family members. The data base of the sensitive words will be updated regularly to help identify the risk for scams.

### Function 3: Smart wallet covers

When the compartment for large notes or ATM bank cards in the wallet is opened, a message will be sent to the family member of the elderly. A warm voice message reminder will be played to remind the elderly. If the elderly has received a telephone call which some sensitive calls have been mentioned, the relevant voice message will be played to give in-time reminder to the user.

## V. Application / Market Need

- To our best knowledge, there is no product target at scams in the market.
- The product has low cost. Only a microprocessor, a switch and a loudspeaker are required.
- It can give in-time reminders to the elderly.
- It helps keep the elderly's family member informed about the elderly and encourage them to take care of the elderly.

## VI. Conclusion

It is hoped that our product could help prevent the elderly from falling into the traps of phone and face-to-face scam and suffering from a huge financial loss. Admittedly, the database for sensitive words needs to be enriched and updated from time to time. Cooperation with the police or using speech A.I. technology could be ways to better our apps. Besides, our opening detection design in the wallet can easily be transferred into other containers holding expensive items such as security box to provide a wider range of protection to the elderly's properties.

Our project is developed based on previous project and the enhancement is below:

(This is a new product design with no similar product in the existing market to our best knowledge)