

## Hong Kong Student Science Project Competition 2023

Template of Extended Abstract (Invention)  
(Word Limit: 1,600 words, Pages: 3 pages only)

**Team Number: JAPE016**

**Project Title: A Crowd Controller**

**Project Type: Invention**

*To our best knowledge, there are / are no \* similar works in the market; (if there are, ) related product links are as below:*

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**The enhancement our project made / the difference with related products are:**

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*\*Please delete if not applicable. The competition values the originality of works. Students must do enough literature research to ensure that their works are unique and list relevant reference materials before starting research or invention.*

### I. Background

- Provide background information as to learn about the audience for whom the project is addressing
- Provide highlights of **literature review** and/or related technologies or devices, with the support of pertinent and reliable references
- Provide an overview of work, create a point of view as to define the needs and insights of the audience and mention the **research or technology gap the project is trying to fill**

An accident occurred last year and it was called the Seoul Halloween crowd crush. At least 159 people were killed and 196 others were injured. The victims were mostly young adults. It was due to many people staying in the same place with insufficient police force.

### II. Objectives

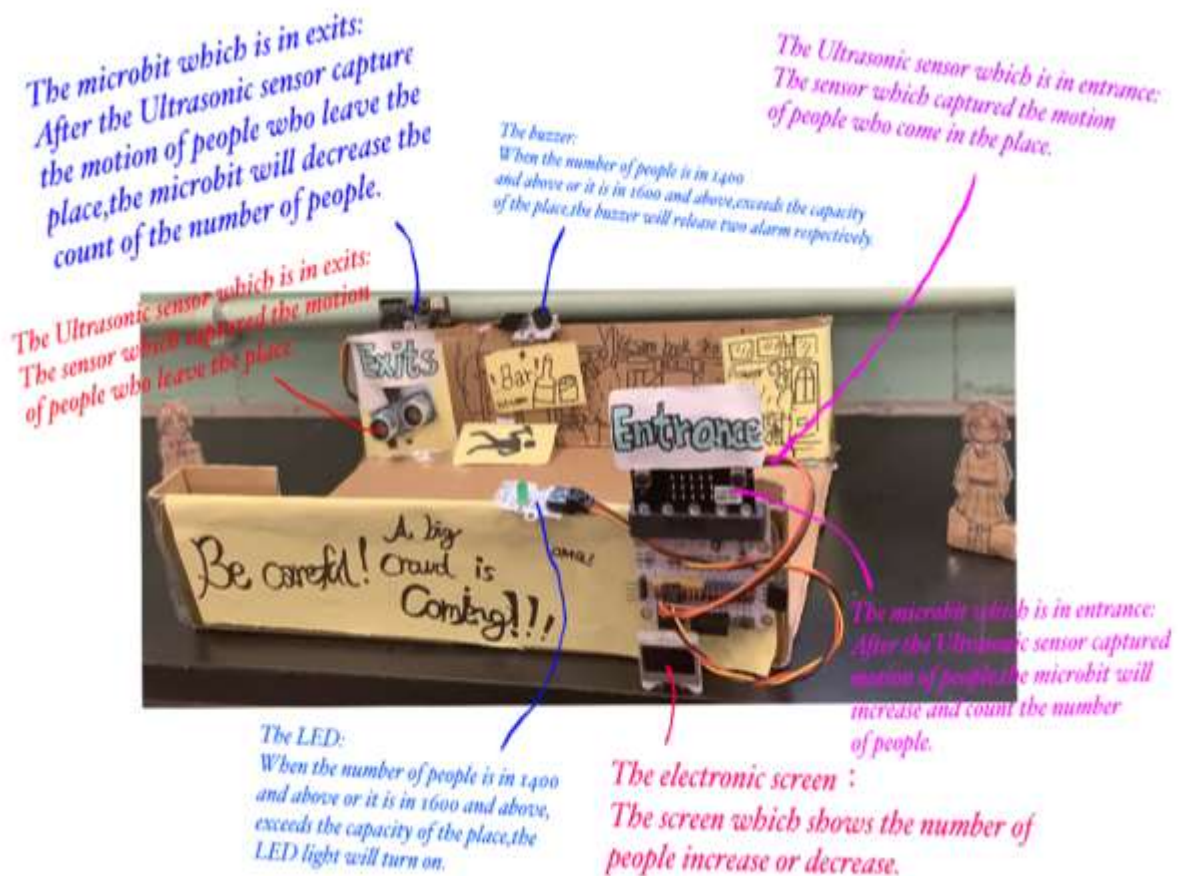
- State the **aim(s)** of project
- As we saw what happened, the crowd got crushed again and again. Now, we need to control it. The purpose of this project, “A Crowd Controller”, is to prevent the uncontrolled crowd from stepping on people, and to easily evacuate and control the flow of people.

### III. Methodology

- Briefly describe the **approaches** used e.g. use of equipment, materials, tests and experiments
- Explain the selected implementation strategies with the **scientific theory**

#### IV. Design of Invention

- Describe the **design** and the **principle** of invention (e.g. The ideation of the projects, the prototypes or creative solution as far as applicable)
- Provide sketches / drawings / photos of the invention



#### V. Application / Market Need

- Explain the area of **application** and function of invention
- Indicate the market need and impact of invention
- Discuss **limitation** and compare with existing related works (if any)

“A Crowd Controller” is to prevent the uncontrolled crowd from stepping on people, and to easily evacuate and control the flow of people. Since our product needs time to detect people one by one, it is waste of time to let people line up.

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**VI. If your team will compete the Sustainable Development Award, please indicate the specific sustainable development goal the project is related to, and provide justification for competing for this award. (Word limit: 300 words)**

**VII. If your team will compete the Social Innovation Award, please list the target group or social issue the project focuses on, and provide justification for competing for this award. (Word limit: 300 words)**

**VIII. Conclusion**

- Make a **data-driven** conclusion of the project and the way forward of the invention process
  - Justify if the proposed project meets the objective(s)

Overall, our product provides a simple solution to prevent crowd crush and the casualties it may cause. By counting the number of people in the area, we may know whether the place exceeded capacity. It will not affect normal life but ensures that people are safe in crowded areas and allows people to enjoy festivals safely.

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