



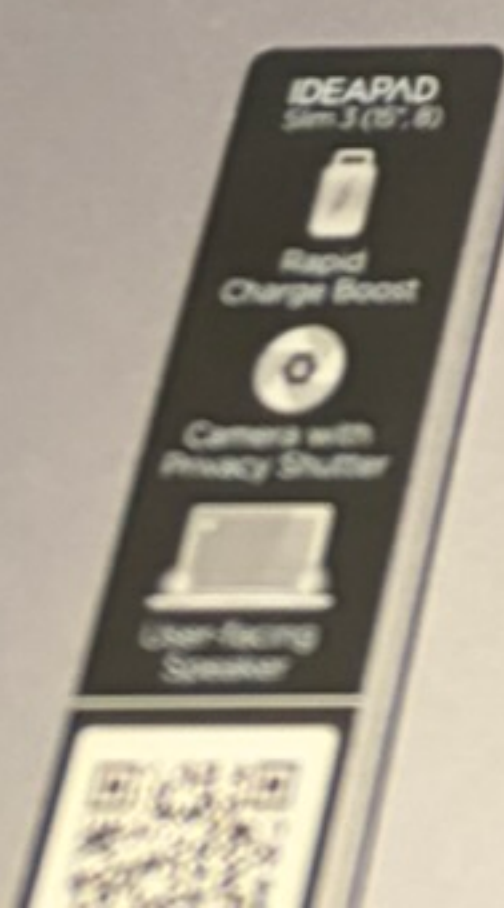
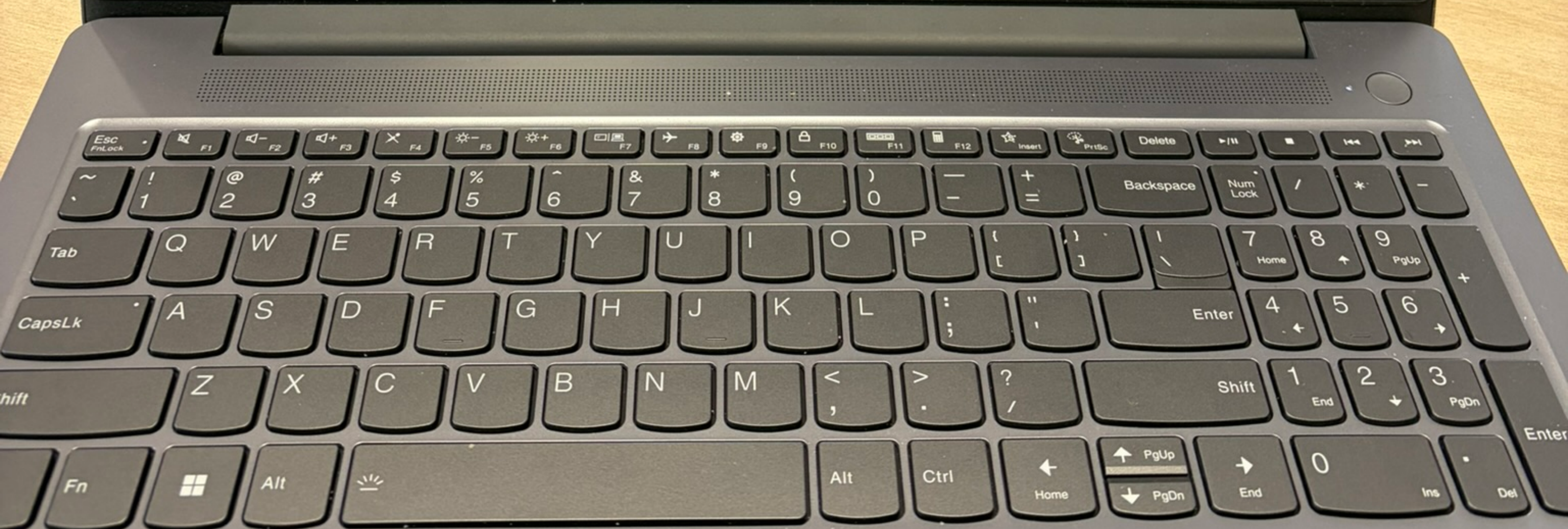
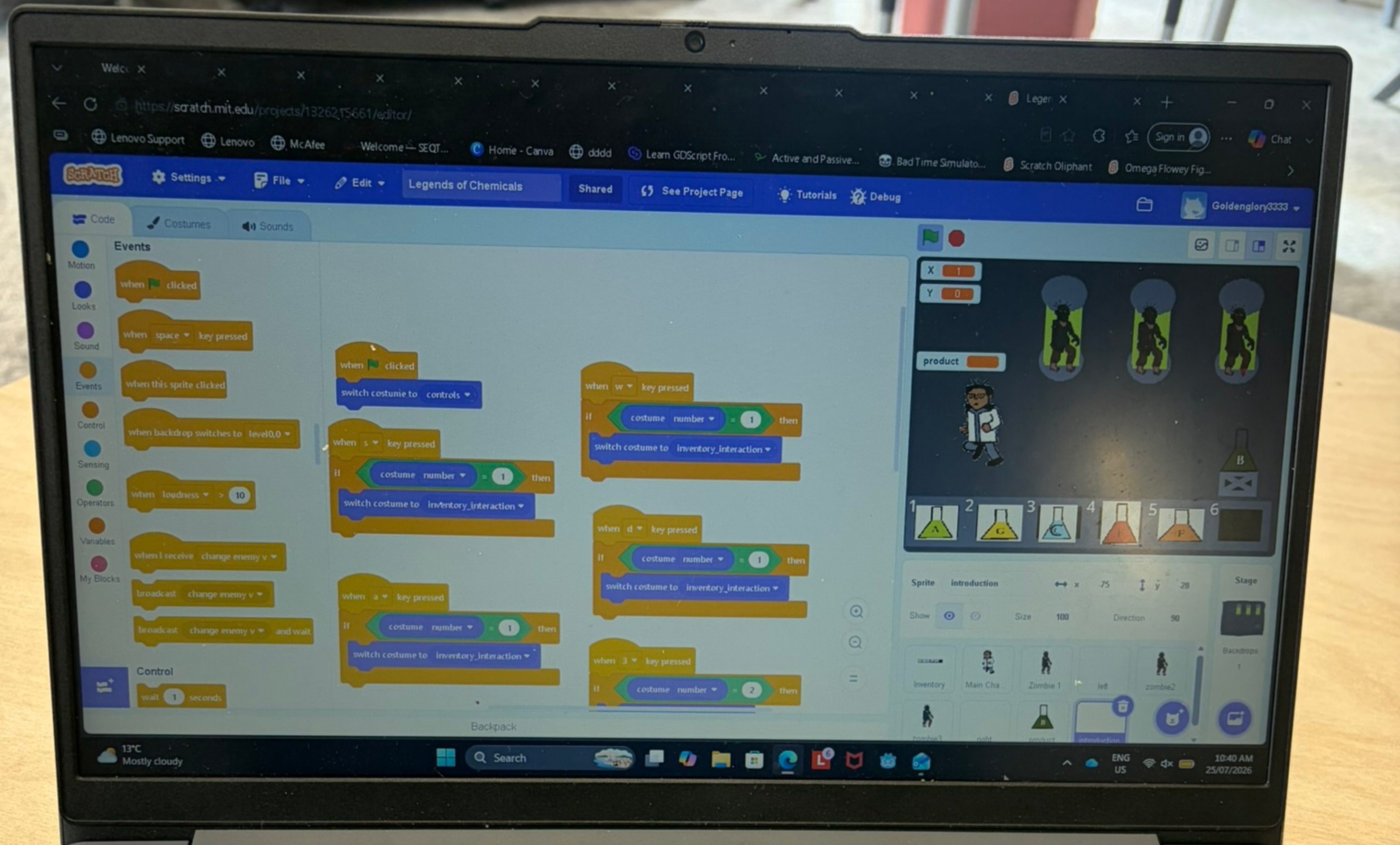
Highly Commended

Programming, Apps & Robotics Year 9 - 10

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Scratch Game report: zombie cure lab

Title: Legends of Chemicals

Zombie cure lab: Mixing chemicals to save the world.

The aim of this project is for educational purpose for the children to help them to learn about science, formulas and problem solving. In the game, the player must mix the chemicals formulas, the formulas are represented as A, B, C, D, E, F, G and X, in the game D is the cure and X is the kill. If the correct formula (being D) is created, the zombies are cured and the player wins, however, if the incorrect cure (being X) is created, then the zombies die and the player loses. We will be creating this in scratch, as all of us have minimal coding experience and scratch is by far the best beginner coding website to use.

The game teaches players that chemicals must be combined in the right correct order to produce a desired result. Even though the formulas in the game are made up, they show how actual scientists follow steps and procedures when working in a lab. The game helps improving problem solving ability and logical thinking and encourages an interest in chemistry and science.

This program was created using scratch and can be run on:

- A desktop or laptop
- A Chromebook

Requirements:

Internet browser like Google chrome, Microsoft edge or safari

Internet connection (if using the online scratch website)

Instructions for loading and using the program

1. Open the scratch project.
2. Click the green flag to begin.
3. Use controls to move such as WASD.
4. If the mixing table holds a light blue substance labelled as "D" press F to use on zombies
5. The zombies will be cured and turned back into normal humans

Program explanation

The scratch program is divided into several section such as:

Formula generator

- Display the chemicals formula the player must copy.
- Cure = A + G or G + A
- Killing Substance = C + F or F + C (Killing substance doesn't work entirely well)

Chemical buttons/Mixing System

- Each button represents a different chemical. However, to mix the selected chemicals, you press the slots in the inventory (1, 2) then, once the product is set too D, press E to insert it into the depositing chamber
- Once in the depositing chamber, press F to insert it into the zombie tubes

Checking system

- Compares the player's formula with the correct answer.
- If the zombies turn into regular humans, the player wins.

Acknowledgement of external support

The game was created by our group using the online coding platform "Scratch"

AI (ChatGPT) was used to support some minor coding decisions and the formulas for the cure and killing substance.

Bibliography

- Scratch team. <https://scratchl.mit.edu/>
- Open AI. ChatGPT. <https://chatgpt.com/>