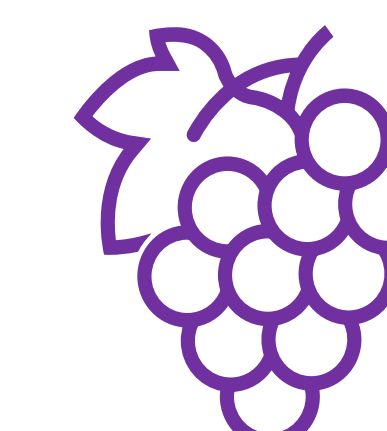


# Tangible Fruits and a Reconfigurable Game Engine for Technology Outreach



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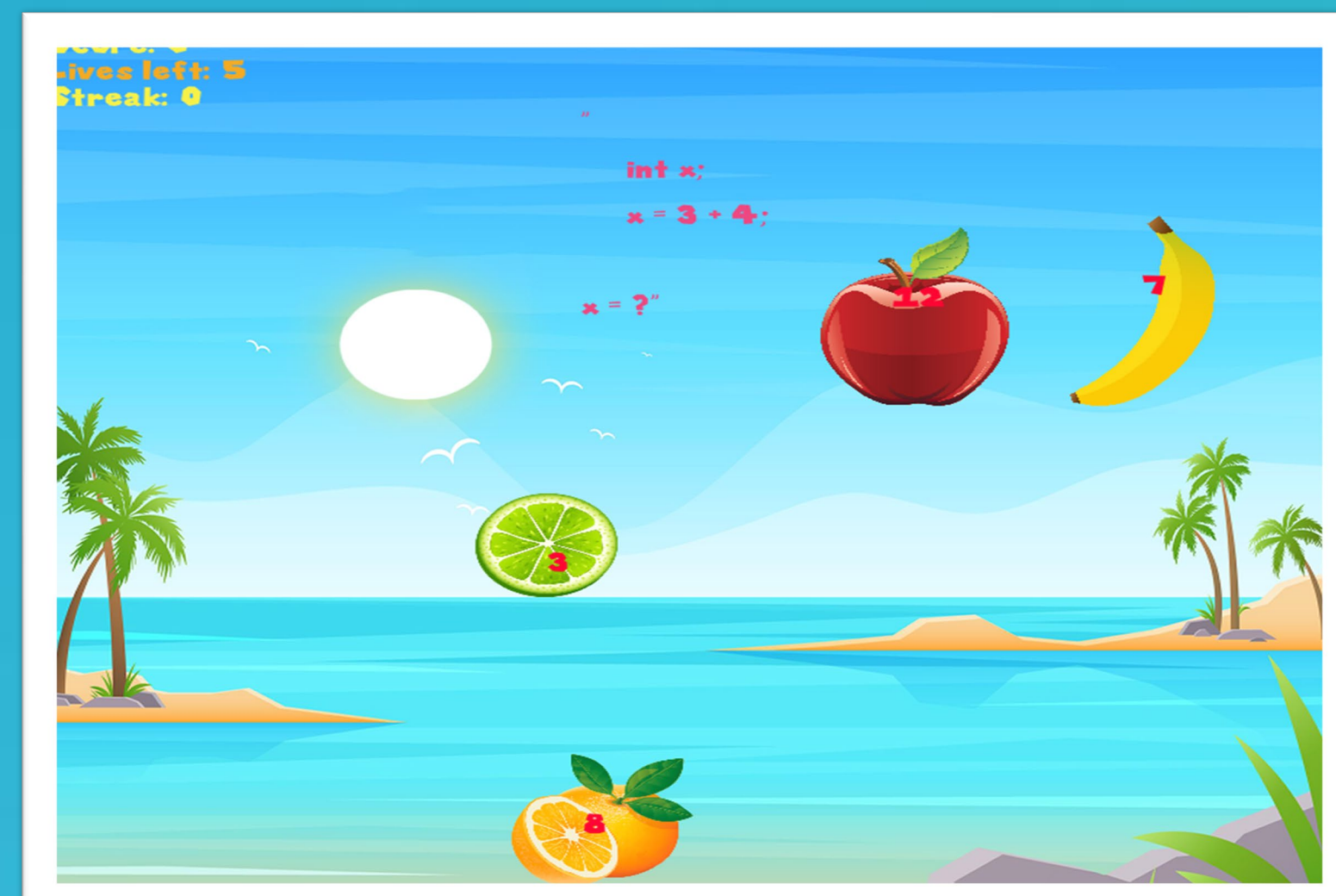
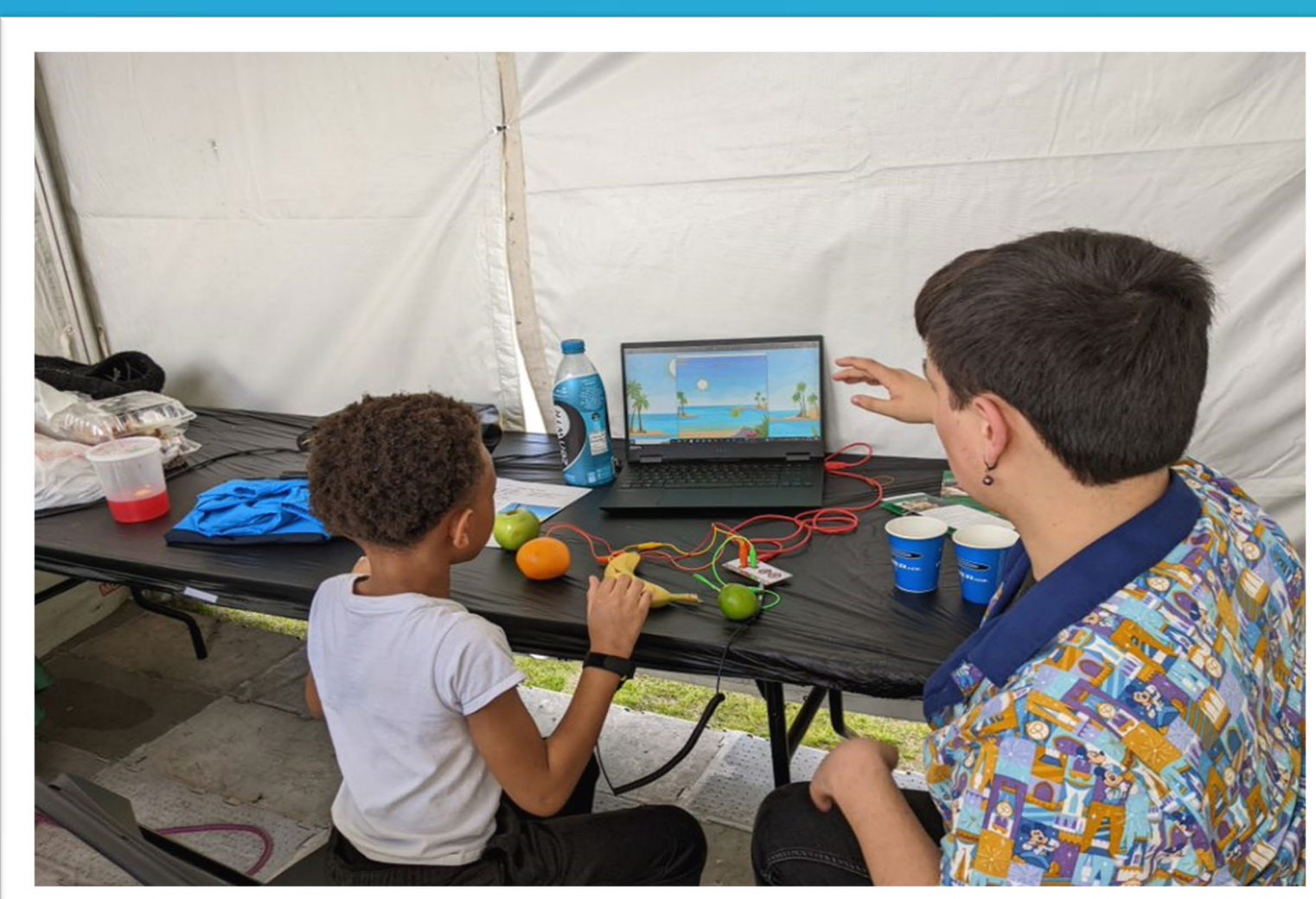
Georgia Gwinnett College | Spring 2023

## Introduction: What is TAP?

- **Technology Ambassador Program (TAP):** a movement within the culture of technology at GGC that breaks down the stigmas surrounding technology.
- A service-learning & outreach course.
- Simulating real-world scenarios: building projects, teamwork, leadership, and meeting project deadlines.

## Fruit Rain & Its Reconfigurability

- **Fruit Rain:** an interactive game (Java and Processing)
  - Help noveltists and coders of all levels improve their skills.
  - Use of Makey-Makey enables us to use the fruit as the controller.
- **Reconfigurability:**
  - The quiz questions are saved in a CVS file, which the game loads when a level is selected.
- Reconfigurability provides a high degree of flexibility:
  - Allowed us to reconfigure the game for different audiences on demand.



## Project Goal

- **Goal:** introduce basic programming fundamentals in a way that was fun, unique, and engaging.
  - variables, operators, and Boolean expressions,
- **Core philosophy:** if these fundamentals could be taught in a way that was easy to understand, and highly entertaining, it would succeed in showing students that programming is less intimidating than it initially appears.

## Outreach Workshops

- As part of TAP's outreach initiative, we conducted IT workshops in two freshman-level general education IT classes.
- Students were given a pre/post survey asking for:
  - Confidence towards programming
  - Rating of the workshop
  - Engagement
  - Learning Outcome
  - Would they consider taking a programming class

## Workshop Effectiveness

Figure 1A: Workshop Rating and Confidence Change from Participants

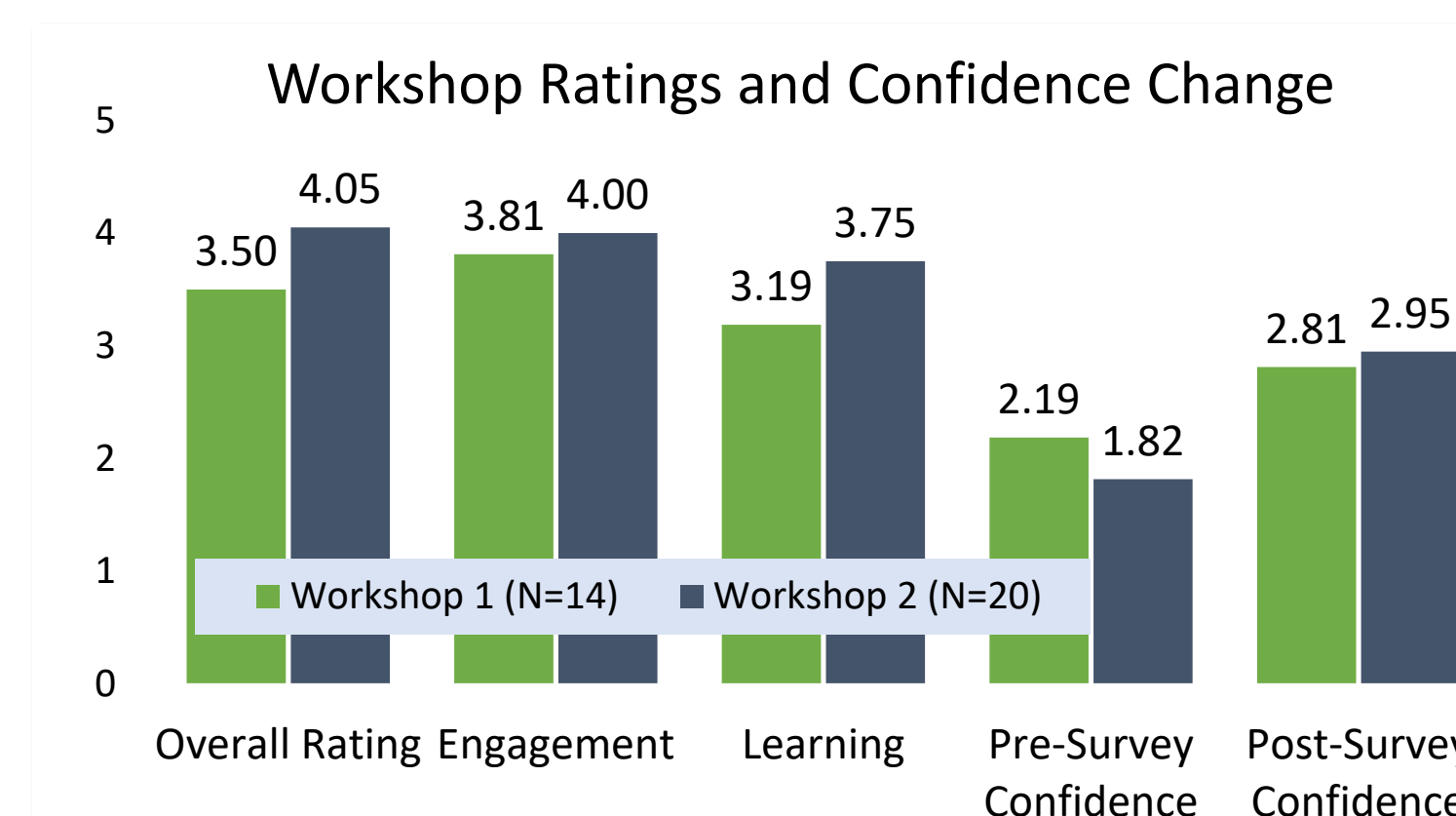


Figure 1B: Confidence Boost Between IT and Non-IT Majors

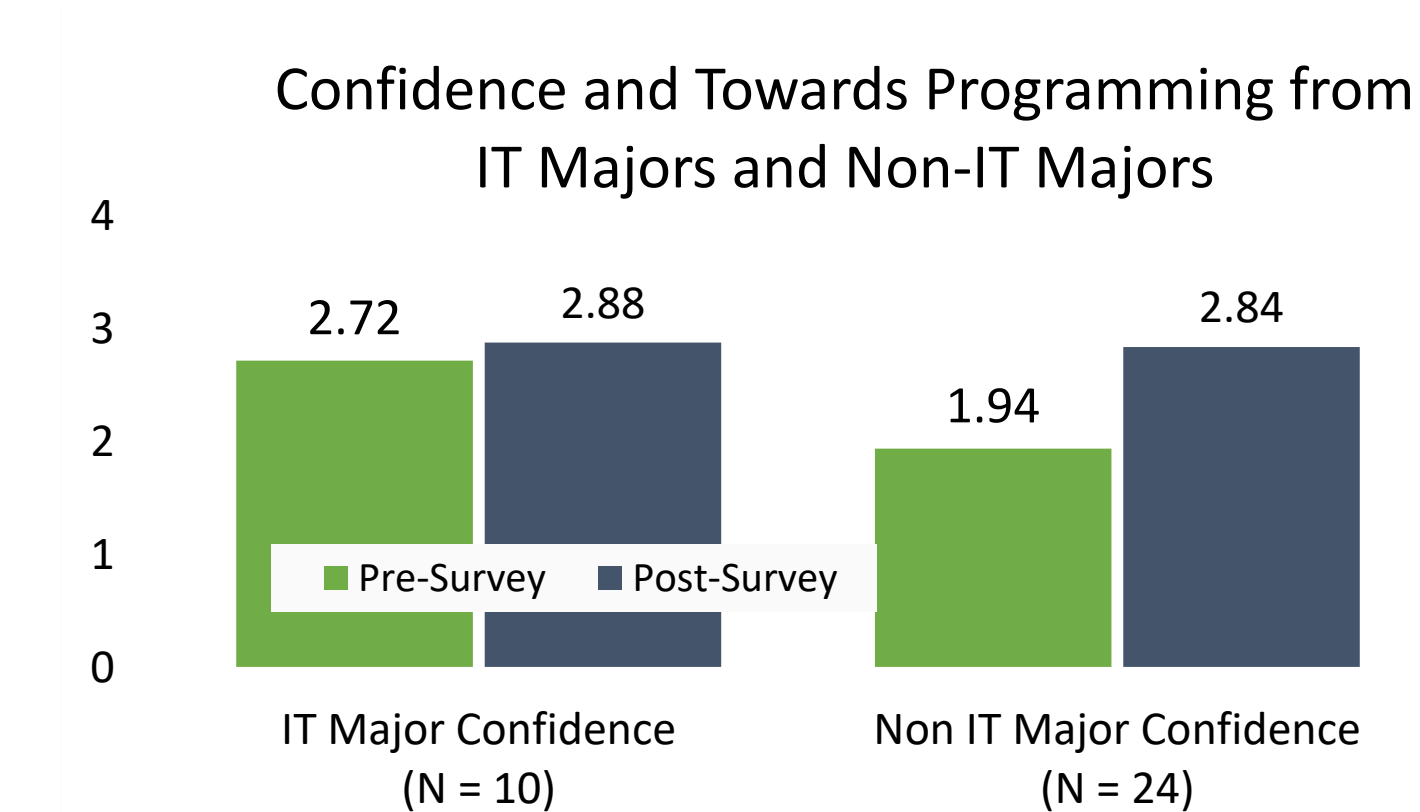


Figure 2: Students' Curiosity Towards IT Post-Workshop

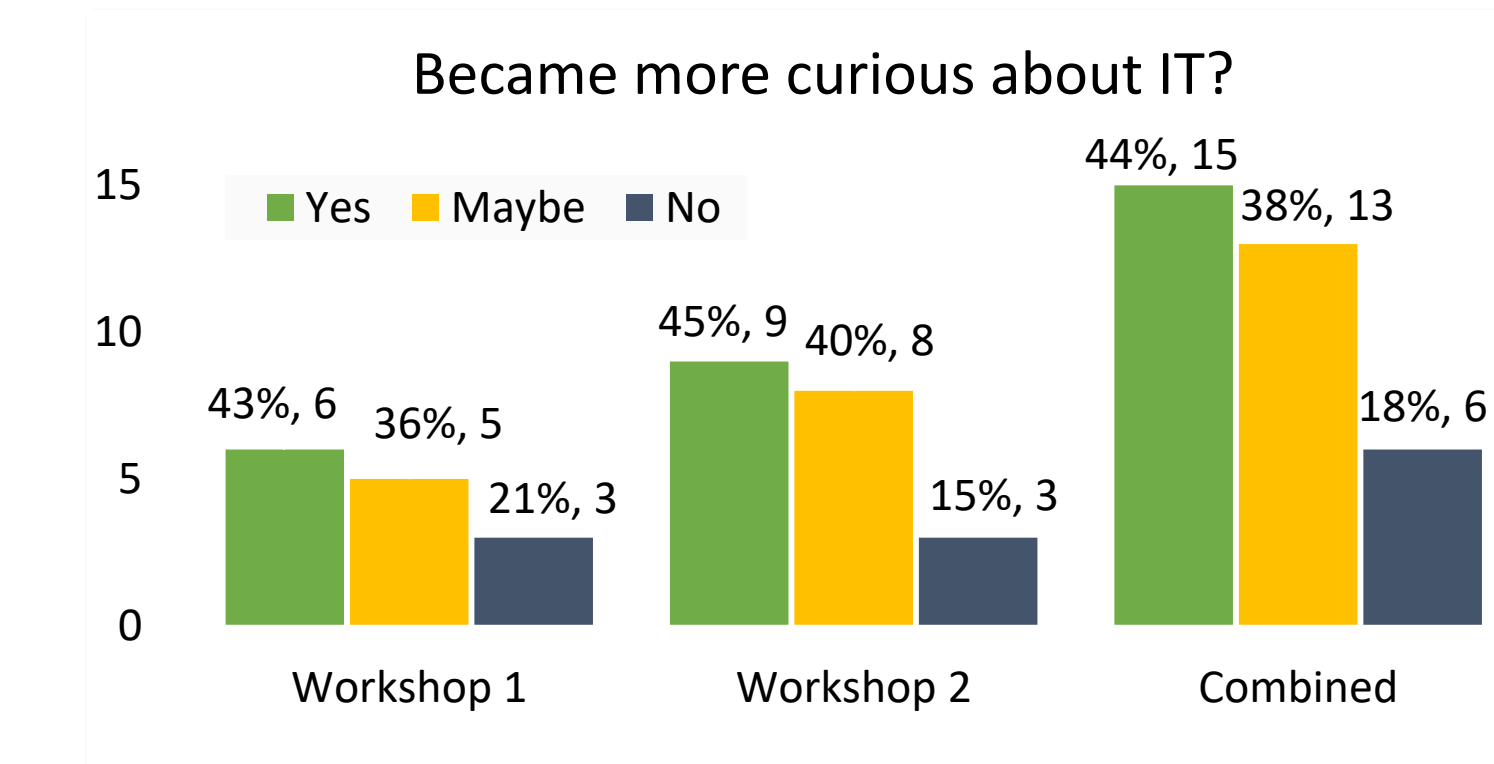
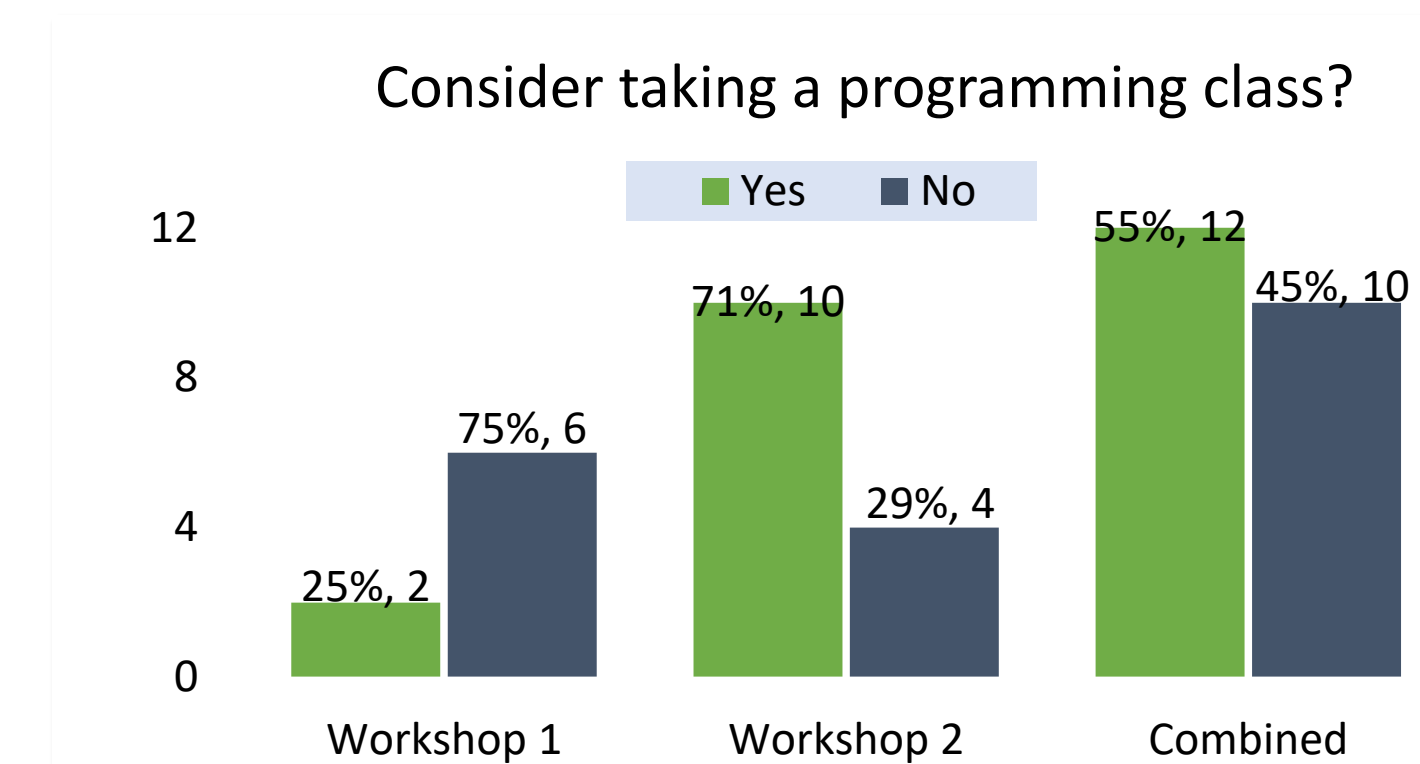


Figure 3: Students' Consideration of Taking a Programming Course



## Conclusion

- The workshops were highly effective at increasing students' curiosity and confidence towards IT.
- Non-IT majors found that the workshops were highly engaging and an excellent learning tool.
- Developed our own programming capabilities and team building, leadership, and communication skills.
- Reconfigurability allowed us to quickly adjust the game's content depending on the needs and audience of our outreach event.