The Next Generation of Computer Science

Elizabeth Casey
College Park Scholars – Science & Global Change Program
Computer Science – ecasey1@umd.edu
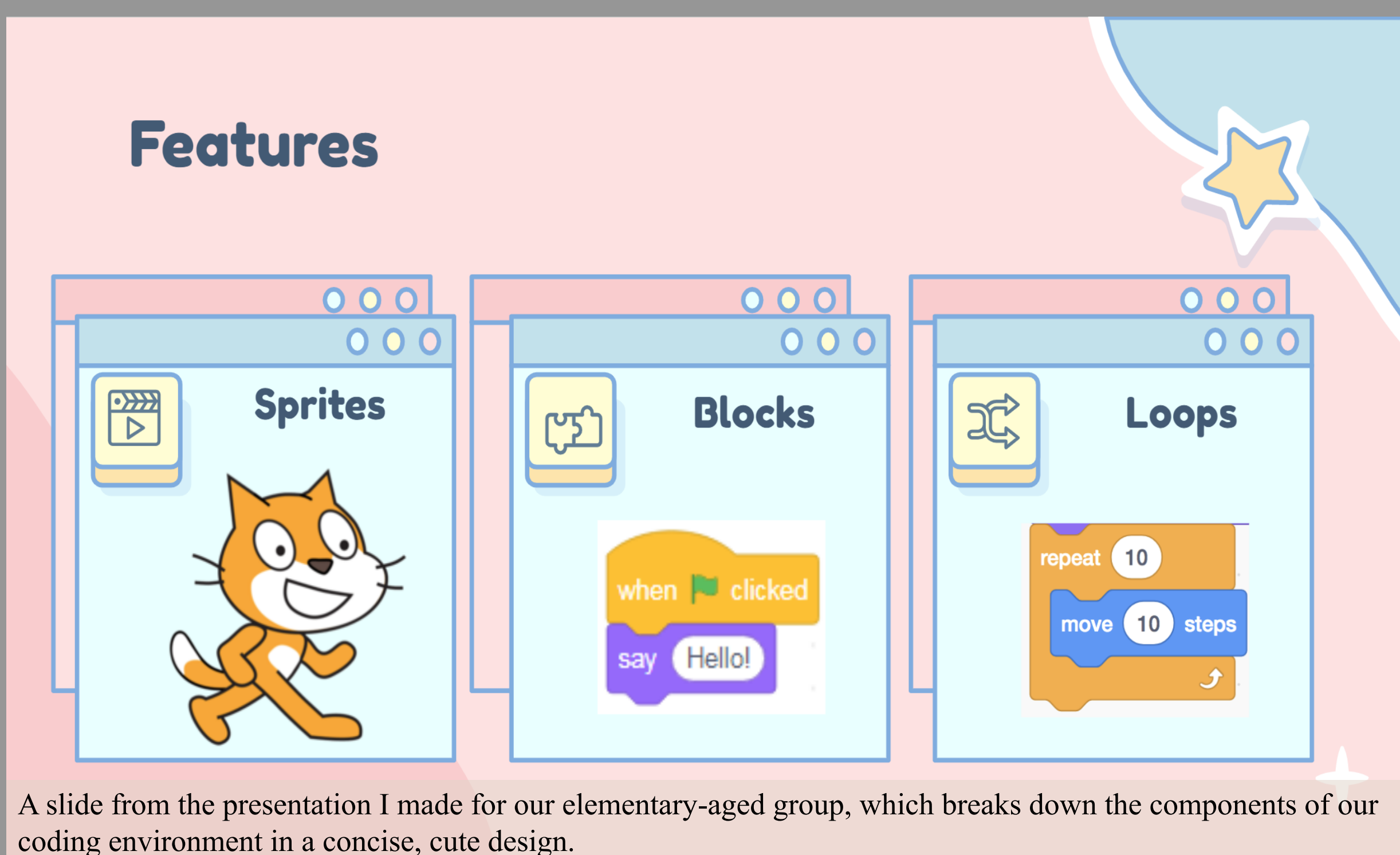College Park Scholars Academic Showcase, May 5, 2023

Iribe Initiative for Inclusion & Diversity Summer Academy

Brendan Iribe Center for Computer Science & Engineering, 8215 Paint Branch Dr, College Park, MD

Supervisor: Charlotte Avery

Mission: Teach the next generation of computer scientists.

-Create a sense of community among students and staff

-Monitor a fun and informative learning environment

-Inspire young children to pursue their passion in tech

Features

Sprites

Blocks

when ⚑ clicked
say Hello!

Loops

repeat 10
move 10 steps

A slide from the presentation I made for our elementary-aged group, which breaks down the components of our coding environment in a concise, cute design.

Issues Confronting Site:

One of the issues that we focused on was balancing our lessons across students with all different backgrounds. Specifically, creating a dynamic learning environment to account for vastly different knowledge bases the kids had coming in day 1.

Showing the elementary students projects from the older groups in table rotations.
This table showcased a rainbow LED touch-tone piano circuit.

Introduction

I worked with a team of instructors at a summer camp for elementary to high school aged students to teach basics of Scratch, HTML, CSS, JavaScript, Python, wearable technology with Adafruit circuit playground. Together we created a new curriculum for the Python/Wearable Tech course, lesson plans for each camp, and daily instructive and socializing activities.

Activities:

Before the courses started, the other instructors and myself collaborated to create lesson plans and slides for several different courses and practice healthy, productive teaching structures before the courses began.

For the first half of each course we taught our lessons and had a field trip to some museum, often in D.C. The second half of the session would be focused on a final project for the students to complete.

Each day would consist of 2-3 lessons or sessions of project work, broken up by social activities to get the students moving and socializing, a lunch break, and opening and closing activities.

Project Time!

Motion-Activated Light Up Bracelet

Check out the project in the modules section of our ELMS page for instructions!

Example of a project I came up with for students to integrate the skills they practiced with a fun activity!

Impact:

We tried to create an environment in which the next generation could have a positive experience in the tech field. We fostered knowledge and friendships with other like-minded students in order to instill confidence and passion into the future computer scientists.

Personal Impact:.

I was able to receive training and experience in teaching and round out my own knowledge with some of these coding languages and practices, as teaching required a deeper understanding in order to explain and re-explain these topics in several ways. I also gained experience working with a team of staff and balancing collaboration with taking initiative.

Acknowledgments:

SCIENCE AND GLOBAL CHANGE