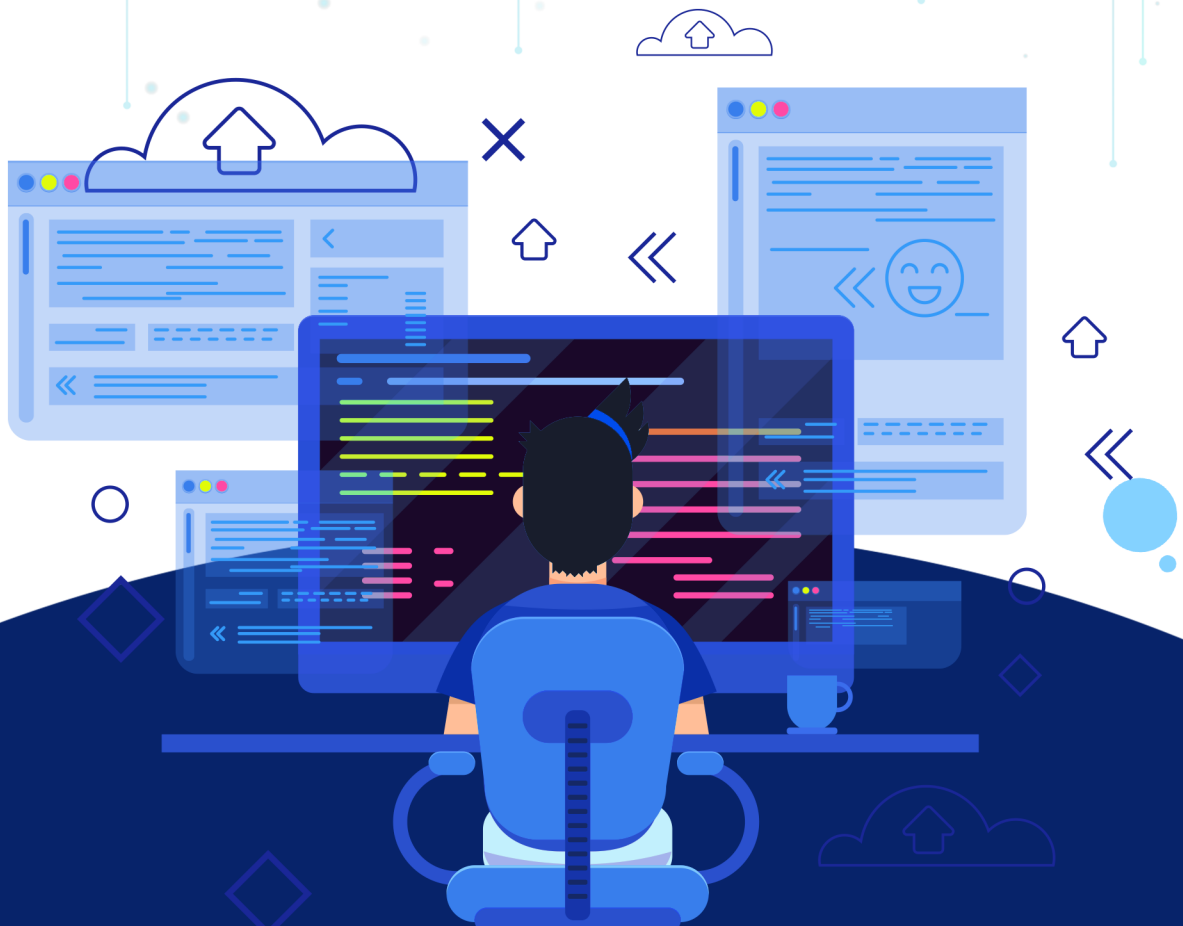# NOBLE ACADEMY

Gifted and Talented Education

Coding Creativity:

A FIVE-WEEK INTERACTIVE COURSE AT NOBLE ACADEMY

Introduction

WELCOME TO THE FEBRUARY CODING COURSE AT NOBLE ACADEMY!

This course is designed for students who are passionate about exploring the digital world through programming. Over the next five weeks, we will dive into various projects that combine creativity with coding skills, allowing students to create interactive animations and designs. Each week focuses on different aspects of coding, from understanding variables to designing custom code blocks, culminating in a final project that showcases all the learned skills. Whether you're a beginner or have some experience, this course will strengthen your coding abilities and spark your imagination.

WEEK 1: FOUNDATIONS OF CODING

Project: Designing the "Paper Plane"

Kickstart your coding journey by designing a digital "Paper Plane." This project focuses on creating simple yet effective animations and understanding the physics behind a flying paper plane using basic coding principles.

Materials: Global and Local Variable Management

Learn the importance of variables in coding, focusing on when and how to use global and local variables effectively. We'll also explore strategies to structure programs that are scalable and easy to update.

Lesson Learned:

- Understand the difference between global and local variables and their uses.
- Learn the basics of scalable program design.
- Gain skills in maintaining and updating code efficiently.

WEEK 2: ANIMATION TECHNIQUES

Project: Creating a Conversational Animation

Develop an animated conversation between two characters, utilizing coding blocks to bring the dialogue to life with timing and emotional expressions.
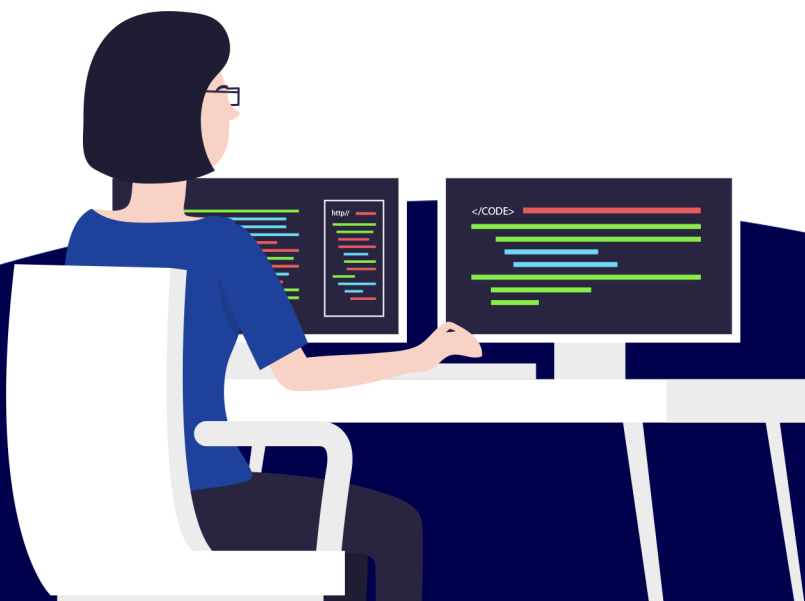
Materials: Organizing Code with Broadcasts and Messages

Master the art of dividing and organizing code into manageable sections using broadcasts and message passing, essential for complex animations.

Lesson Learned:

• Discover how to break down a project into smaller, manageable parts.
• Learn to synchronize events and actions in animations.
• Enhance your ability to debug and refine animation sequences.

WEEK 3: STORYTELLING WITH CODE

Project: Crafting an Animated Storyline

Create a compelling animated story, applying coding techniques to develop a narrative arc with characters, settings, and plot developments.
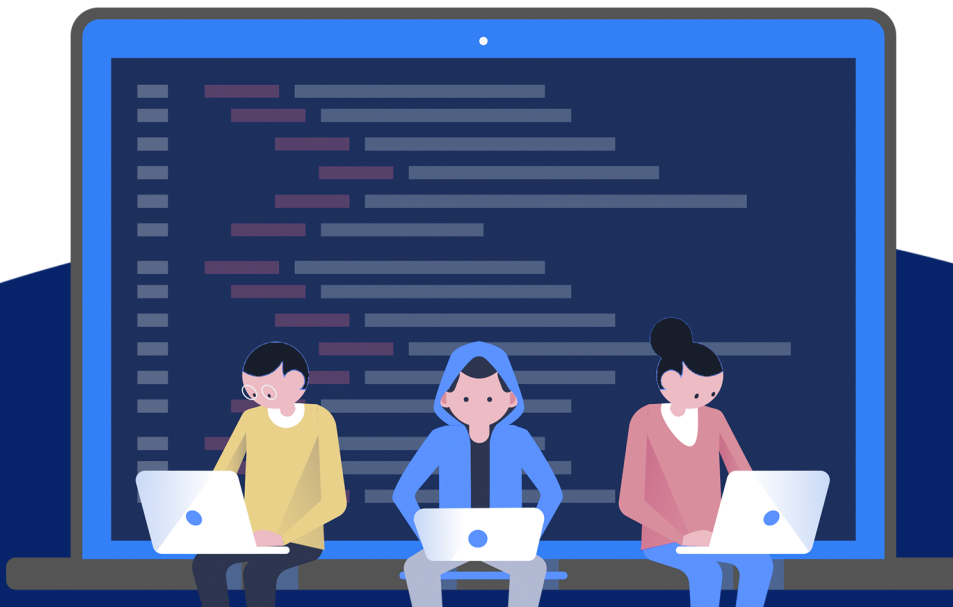
Materials: Advanced Variable Techniques

Dive deeper into the use of global and local variables to enhance control over your animation projects, enabling more dynamic and responsive story elements.

Lesson Learned:

- Apply variables strategically to control narrative elements.
- Develop an understanding of timing and pacing in storytelling.
- Enhance storytelling through interactive elements.

WEEK 4: ADVANCED CONVERSATIONAL ANIMATIONS

Project: Final Conversational Animation

For the final project, students will create a sophisticated conversational animation, integrating everything learned in the previous weeks.

Materials: Integrating Multiple Projects

Learn to manage and integrate multiple coding projects, a key skill for developing larger and more complex software applications.

Lesson Learned:

- Gain experience in project integration and management.
- Develop advanced debugging and problem-solving skills.
- Learn to enhance user interaction within animations.

WEEK 5: INDEPENDENT CODING PROJECTS

Project: Independent Code Crafting

In the final week, students will develop a project from scratch, applying custom-coded functions and procedures to solve unique challenges.

Materials: Building Custom Functions and Reusable Code

Master the creation of custom functions and reusable code blocks, focusing on efficiency and modularity to streamline your coding projects.

Lesson Learned:

- Develop custom functions to simplify complex coding tasks.
- Learn the importance of writing reusable and maintainable code.
- Understand how to utilize custom blocks for efficient coding.

Conclusion

Throughout this course, students will have transformed their initial curiosity into tangible coding skills, ready to tackle any digital challenge. By the end, you will not only have created multiple projects but also gained a deeper understanding of how coding can be a tool for expression and innovation. We look forward to seeing how these new skills will shape your future creations!