



LET'S PLAY!

Creating a Game Utilizing an Inverted Pendulum, MATLAB®, & Simulink®

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BACKGROUND

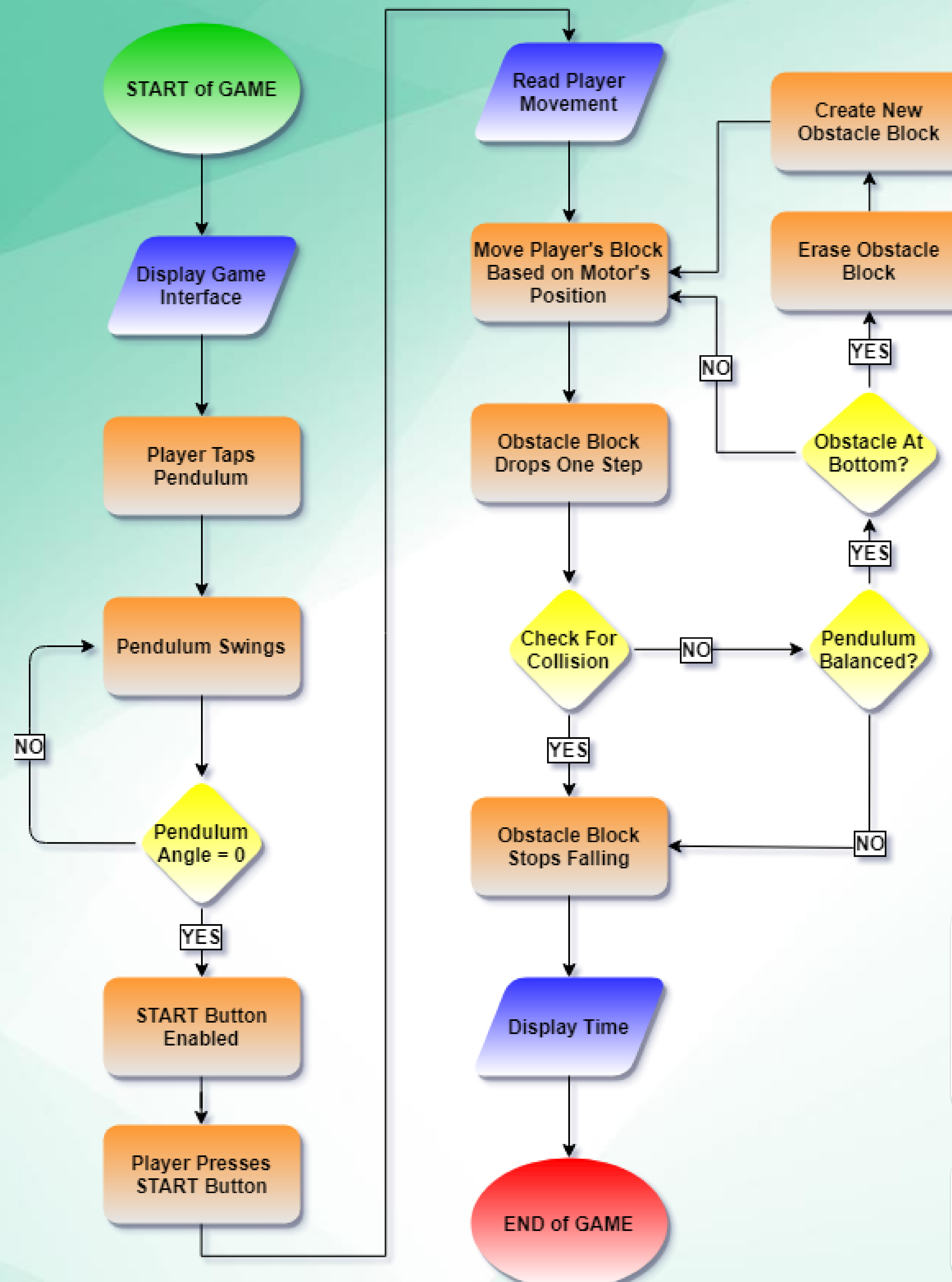
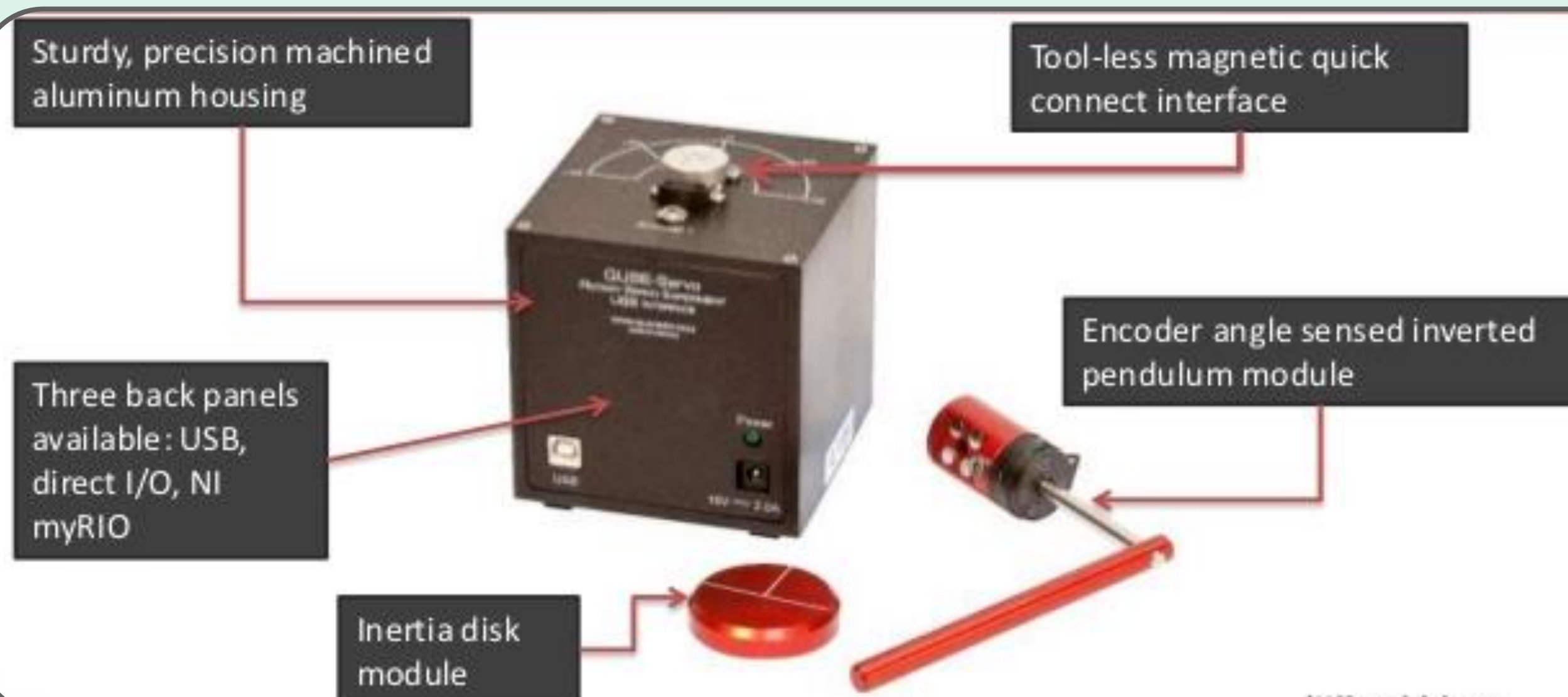
- An inverted pendulum is a pendulum that has its center of mass above its pivot point. It is unstable and without additional help, it will fall over.
- Inverted stability is achieved using control systems to monitor the pole's angle; moving the pivot point horizontally under the center of mass.
- It is used as a popular demonstration of utilizing feedback control to stabilize an open-loop unstable system.

OBJECTIVES

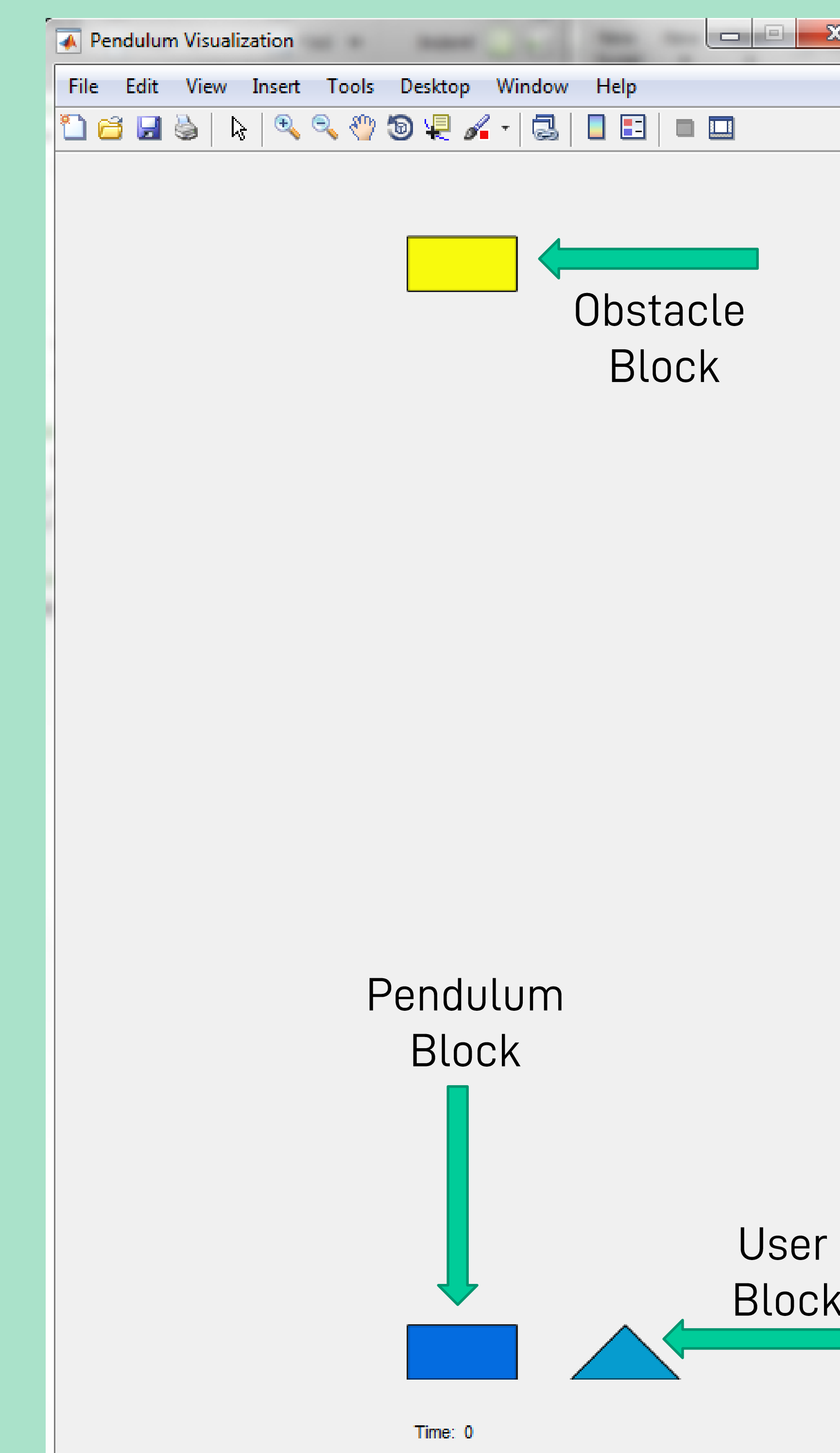
- Create a block avoidance game that incorporates the QUBE-Servo's inverted pendulum module and MATLAB®/Simulink®.
- The game will require the player to avoid falling obstacle blocks and keeping the pendulum balanced.

HARDWARE

Quanser QUBE-Servo



USER INTERFACE



APPLICATIONS

- Teaching control systems using hands-on methods which allow undergraduate college students to test theory in real time.
- Introduce younger students in middle & high school to ideas and concepts involving engineering disciplines using an interactive game to enhance engagement.

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