

CMP-5045B: Embedded Systems

Demo: Boop It

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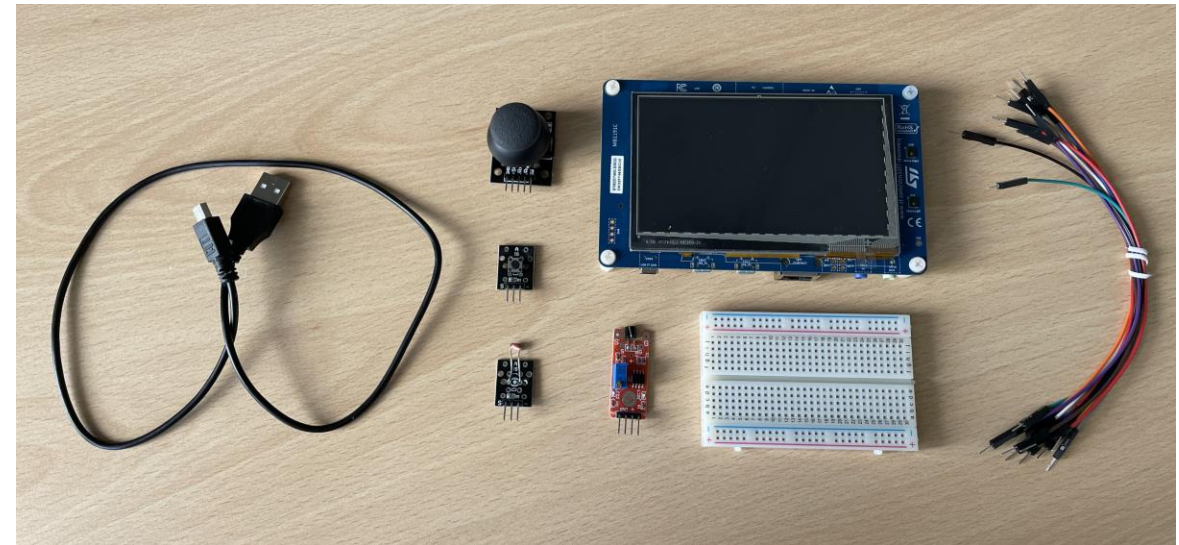
Application Scenario

- Boop It is a fun new game, to test your coordination and reaction time
- The player must complete tasks in a set time to score a point
- The player has a limited number of lives
- Variable difficulty

Hardware and Software

Hardware

- STM32f746G-Discovery board
 - GLCD
 - Touchscreen
- Joystick (analogue)
- Touch Sensor
- Photoresistor(light) Sensor (analogue)
- Button
- Breadboard



Software

- Keil::STM32F7xx_DFP (1.1.1)
- Keil::MDK-Middleware
- ARM::CMSIS (6.0.0)
- ARM::CMSIS-RTX (5.8.0)
- ARM Keil - MDKV6

How it works

3 Modes

1. Start screen
2. Game screen
3. End screen

Start screen

- Title screen
- Player uses the touch screen to select:
 - Difficulty
 - Enum
 - Changes number of lives the player has
 - Changes the time the player has to complete a task
 - Play game
 - Start a game
 - Go to game screen

Game screen

- Randomly select a task
- Player must complete task before time runs out or they lose a life
- A point is scored once the task is completed
- Time remaining, score and task are displayed

End screen

- Score is displayed
- Player uses the touch screen to select:
 - Main menu
 - Reset game
 - Back to title screen
 - Go again
 - Start a new game
 - Go to game screen