

# ArduRUNo! - CPSC-42 Final Project

## Version Release Notes

### Version 1.0

- Implemented base code from the Arduino Project Gallery
- **NEW** feature enables the use of the joystick to start and play the game

### Version 1.1

- Removed some redundant code
- **NEW** blinking text functionality on game title screen for emphasis on how to start the game

### Version 1.2

- **NEW** buzzer functionality to game
  - Implemented code to have the buzzer make a sound that would resemble a "game over" scenario of the game
  - Implemented code to have the buzzer make a slight sound to let the player know the game has started

### Version 1.3

- **NEW** additional code that permitted the joystick to control the game in 2 ways
  - To start a game, it is still a press of the joystick
  - To make the "little man" jump, the player just moves the joystick up.

### Version 1.4

- **Implemented** the pitches.h tab into the program
- **NEW** melody for when each game starts
- **NEW** a melody for when each game ends

### Version 1.5

- **FIXED** gameOverBuzzer sounding awful towards the end of the tone melody
- **CHANGED** joystick axis activation requirement to permit a more convenient location on the mounting bracket
- **NEW** melody to emit when the game is over

### Version 2.0

- **NEW** code allows the usage of green, yellow, and red LEDs with the game
  - **NEW** Game start feature
    - ◆ Green, Yellow, & Red LED will flash each in one second intervals and

the buzzer will make a tone at each flash to inform the player to "get ready"

- ◆ Each time the the countdown gets closer to zero, the tone pitch will get higher
- ◆ LCD display will display "Get Ready!" and "3,2,1" each when a corresponding LED lights up.
  - ◆ EX: Barely starting, the LCD will display "Get Ready!" and "In 3.." followed by a flash of the Green LED.
- **IMPROVED** game over functionality with a red LED flashing 2 times in one second interval to give a cool "game over" effect
- **RESOLVED** various bugs in which resulted in some instructions not loading for a new game if the player had already played at least once.

## Version 2.1

- **NEW** game high score functionality that will activate a new congratulatory melody on the piezo buzzer, display the new high score to the player when a player achieves a high score, and flash a **NEW** blue led 4 times rapidly to alert the player
- **FIX** that resolved some minor game responsiveness issues as one variable that was not supposed to be utilized for other purposes was found to be used.

## Version 2.2

- **NEW** level increases for the game that occur over time as long as the player stays alive
  - The game will start at NORMAL speed until a player reaches 50 steps. Once a player reaches 50 steps, the game speed will increase (making the difficulty harder). After this initial game speed increase the game will increase in speed in 100 step intervals.

## Version 3.0

- **NEW** tones for the piezo buzzer to alert the player of a level increase.
  - General levels (MEDIUM, HARD, EXPERT, MASTER, & PROFESSIONAL) will all play the same tone melody to indicate a level up
  - If a player reaches the IMPOSSIBLE level, a melody that is set to the song named "The Final Countdown" by Europe is played
- **RESOLVED** a major bug that would cause game level increases to not function properly after the first level
  - This also has **RESOLVED** slightly noticeable game lag
- **INCREASED** difficulty of each level
- **RESOLVED** a minor bug that would cause the game to autostart when the Arduino board would first be powered on or reset
- **ENHANCED** internal code to provide better organization and optimization of the game

- **CHANGED** the graphics design of the terrain slightly