MICROREALMS SPECIAL EFFECTS CHALLENGE

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**YouTube Link to my Microrealm Game:**

<https://youtu.be/4VOWCIdUtYQ>

**Explanation of how my improvements work for the Microrealm Game:**

For my Microrealms game on the STM32L031K6 microprocessor, I have done a few modifications.

For the music part, I added in the c code a #define CPU\_FREQ 16000000, more #defines with music notes, the ‘Systick\_Handler’, ‘playNote’ and ‘SpringNotesOriginal’ / ’SpringNotes1’ / ’SpringNotes2’ functions in order to create a different frequency beep sound when the user presses for instance ‘w’ for “up” on the keyboard. Moreover, these functions change the sound when messages occur like “you find a magic charm”, as well as when the user chooses action such as a “(I)ce spell” at the end of the game.

For the light part, I added the ‘randomize’ and ‘ADCBegin’ functions. I used the ‘GPIOA -> ODR’ registers to turn on and off the LEDs throughout the game. For example, when the user begins the game and types ‘s’ and then types their name, the blue LED turns on, and it turns off when the user completes the game with the final ‘fight’. The yellow LED turns on every time the user presses the ‘w’ for “up” on the keyboard for instance. The yellow LED also flashes for the messages like “you find a shiny golden nugget’ for a few seconds. Furthermore, both yellow and green LEDs flashes for the “a rock blocks your path” message.

Additionally, I added the ASCII Art functions. Therefore, when a message like “a smouldering dragon blocks your way” comes up, a ‘Dragon ASCII Art’ function displays the dragon on the screen. On the other hand, if the user wins, the ‘Hero ASCII Art’ function displays the hero ASCII art on the screen.