

Hangman Lives on MARS the game

Part 1

Project Summary

The project goal is to recreate the Hangman game in MARS. The game randomly selects a word from a word list txt file. A hangman scaffold is displayed on the bitmap display along with empty lines, which correspond to the number of letters in the word. The user is allowed six guesses before the game is over. An incorrect answer draws a body part on the bitmap display (head, body, left arm, right arm, left leg, and right leg). A correct answer draws the letter above the empty line.

Mars Configuration

The game will be displayed on the Bitmap Display, using the following configuration:

- Unit Width & Unit Height in Pixels = 1
- Display Width & Height in Pixels = 256
- Base Address for Display = 0x10040000 (heap)

The game requires the Keyboard and Display MMIO Simulator for user input, using the default setup settings.

Interface and Rules

The game starts with a welcome greeting on the Bitmap display. After a two second pause, the screen clears and a word list .txt file is opened/read, writing its contents to a word buffer. A single word is randomly selected from the word buffer listing and saved. Shortly thereafter, a hangman scaffold and empty lines appear on the display.

The 'how to play' rules prompt is displayed on the I/O display. The rules are simple: capital letters only and a maximum of six incorrect guesses are allowed. At this point, a message prompt notifies the player it's time to enter a capital letter into the Keyboard and Display MMIO Simulator. The game then checks to see if the player's selected letter is found in the word. An incorrect answer draws a body part on the bitmap display, while a correct answer draws the letter above the correct line. Also, all guesses, right or wrong, are displayed above the scaffolding as a reminder of what has been already chosen. This continues until either the player's guesses are exhausted, or the player successfully discovered the answer.