Mips Project Demonstration 1

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1 Memory

We plan on storing several pieces of data in memory, some of these for convenience and others as more of a necessity.

The necessary items are the address of the keyboard and display. As well as information related to the ball and paddle which are stored as an array. The items of convenience are colours, unit size and other constants that may be variables in the future.

We have stored these simply by using .word followed by the value.

We will also be accessing the memory used by the display for purposes of collision detection and whatnot, we felt no need in storing a separate map of the game when we can just look for colours in the display address.

```
# Colours are fun!
PADDLE_COLOUR:
    .word 0x7851a9 # This is Royal Purple

MY_COLOURS:
    .word   0xff0000    # red
    .word   0x00ff00    # green
    .word   0x0000ff    # blue
    .word   0x808080    # gray

VOID_BLACK:
    .word 0

##############################################################
# Mutable Data
##############################################################

Ball:
    .word 16 # Ball X
    .word 24 # Ball Y
    .word 0  # Current X direction
    .word 1 # Current Y direction

Paddle:
    .word 14 # Paddle X
    .word 30 # Paddle Y
    .word 6 # Paddle Length
```

Figure 1: An example of some data laid out in memory

2 The scene

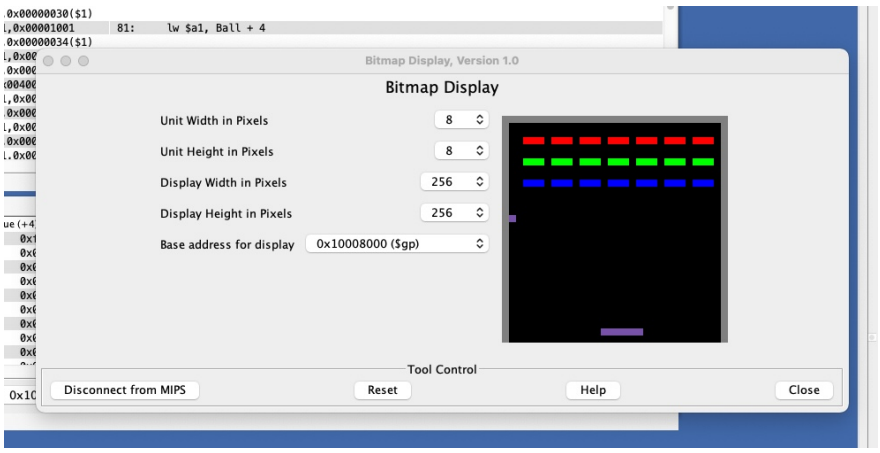

Figure 2: The scene when the game starts

3 collision

- If the ball hits the top, it should basically just reflect down but keep its original X direction. - If the ball hits the bottom, well, it should go into the abyss as the user's soul is consumed by Steve Harvey's ghost - If the ball hits the left, it should basically reflect right but keep going in its original Y - If the ball hits right, it should reflect left but keep going in its original Y. - If the ball hits the paddle, more or less, go left on the left side (AND UP). Or if it hits the right side, go right on the right side (AND UP). - If the ball hits a brick the Y direction reverses, the brick should also be erased.