

# **CAB202 - Microprocessors and Digital Systems**

## Assignment 1

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## Executive Summary

## Program Overview

Things to talk about  
change\_state



## Border

The border is simply a rectangle that is drawn on the edge of the terminal. It supports every terminal size. The `draw_borders()` function is the last one called before `show_screen()` in the draw step of the game loop. This ensures that no other graphics ever block the border.

## Globals

```
// zombiemountain.h
#define BORDER_CHAR 46
```

The character that will be used to represent the border. The number 46 represents the ASCII character ”.” (full stop).

## Functions

```
// main.c
void draw_borders();
```

Draws 4 lines that form a rectangle on the edge of the screen. The length of these lines are calculated by using the screen width and height in order to make the borders work on every screen size.

## Testing

The game is started in different sized terminals and the borders are verified to have been drawn correctly.

**Screen: 80x24**

```
.....
.
. Screen Width:  80
. Screen Height: 24      Race to Zombie Mountain
.
.
.
.
.
. INSTRUCTIONS          CONTROLS
. Reach the finish line  a/d : Move Left/Right
. Collisions reduce car  w/s : Accelerate/Decelerate
. condition is 0,
. collides with fuel station or
. runs out of fuel
. Drive with low speed next to fuel station to refuel
.
.
.
. Press any key to play...
.
.
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.
.....
```

Figure 2: The border with screen dimensions of 80x24



## Dashboard



## Race Car

## Horizontal Movement

## Acceleration and Speed

## Scenery and Obstacles

## Fuel Depot

## Fuel

## Distance Travelled

## Collision



## Game Over Dialogue

## Part B - Highscore Screen

## References