

clockDisplay.h

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/*
 * clockDisplay.h
 *
 * Created on: May 19, 2015
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 */

#ifndef CLOCKDISPLAY_H_
#define CLOCKDISPLAY_H_

#include <stdbool.h>

void clockDisplay_init(); // Called only once - performs any necessary inits.
void clockDisplay_updateTimeDisplay(bool forceUpdateAll); // Updates the time display with
latest time.
void clockDisplay_performIncDec(); // Performs the increment or decrement, depending upon
the touched region.
void clockDisplay_advanceTimeOneSecond(); // Advances the time forward by 1 second.
void clockDisplay_runTest(); // Run a test of clock-display functions.

#define WIDTH 320 //width of board
#define HEIGHT 240 //height of board
#define HALF_HEIGHT HEIGHT/2 //half the height
#define HALF_WIDTH WIDTH/2 //half the width
#define ONE_THIRD_WIDTH WIDTH/3 //1/3 the width, or in between hours and mins
#define TWO_THIRD_WIDTH 2*WIDTH/3 //2/3 the width, or in between mins and seconds

#define SIZE 5 //YOU CAN CHANGE THIS IF YOU WANT - this is the size of each block. usable
values 1-6
#define CLOCK_CENTER 4 //4 characters is half the clock "##:##:##"
#define TEXT_WIDTH_BLOCKS 6 //Each text has 6 blocks in pixels
#define TEXT_HEIGHT_BLOCKS 7 //Each text has 7 blocks in height
#define TEXT_WIDTH TEXT_WIDTH_BLOCKS * SIZE //width = width in blocks * block size
#define TEXT_HEIGHT TEXT_HEIGHT_BLOCKS * SIZE //height= height in blocks * block size

#define CENTERING_CONSTANT TEXT_WIDTH * CLOCK_CENTER //the centering constant is half the
clock * each char's width
#define START_X HALF_WIDTH - CENTERING_CONSTANT //the start x point is the center -
centering constant
#define START_Y HALF_HEIGHT - (TEXT_HEIGHT / 2) //to center in y- y center- half of text
height.

#define TRIANGLE_VERTICAL_SPACE TEXT_HEIGHT / 2 //We want a space the size of half the text
height

#define HOURS_OFFSET 0 //the hours are printed to the far left of the time
#define MINS_OFFSET 3 * TEXT_WIDTH //the minutes are printed 3 characters in (2 for hours
and 1 for colon)
#define SECS_OFFSET 6 * TEXT_WIDTH //the seconds are printed 6 characters in (2 hours, 2
mins, 2 colons)

#define SEC_MAX 59 //no more than 59 secs
#define MIN_MAX 59 //no more than 59 mins
#define HOUR_MAX 12 //no more than 12 hours (should be 23)

#define TEXT_COLOR DISPLAY_CYAN //cool color
#define GOOD_LOOKING_CLOCK_NUMBER 10; //good looking number
```

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```
#endif /* CLOCKDISPLAY_H_ */
```