

makeGraph.php Alexander Dean

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<?php
    $date = new DateTime('now'); #gets current date and time
    $db = new SQLite3("/home/pi/Documents/ECE331/templogger/temp.db"); #opens database
of temperature values
    header("Content-type: image/png"); #tells the HTML page to prepare
for a PNG image
    $img = imagecreate(1600, 800); #creates template for 1600x800
pixel image ((Obviously not supported by all systems))
    imagecolorallocate($img, 255,255,255); #sets background of image
to white
    $prevTemp = 0; #initializes previous temperature value
    $linecolor = imagecolorallocate($img, 0, 0, 0); #initializes black color
for use in grid and labels
    $faren = imagecolorallocate($img, 255, 0, 0); #initializes red color
for use in graph

    imageline($img, 1520, 0, 1520, 700, $linecolor); #create right border of
graph area
    imageline($img, 80, 0, 80, 700, $linecolor); #creates left border of
graph area
    imageline($img, 80, 700, 1520, 700, $linecolor); #creates bottom border
of graph area
    imagestring($img, 5, 760, 780, "Time", $linecolor); #labels x-axis
    imagestring($img, 5, 1, 400, "Temp.", $linecolor); #labels y-axis
    imagestring($img, 5, 1, 420, '(F)', $linecolor); #y-axis label unit
    imagestring($img, 5, 540, 10, "Temperature in Alex's Room over the Last 24 Hours", $linecolor);
    $i = 0; #sets title of graph

    imagestring($img, 4, 1525, 700, "NOW", $linecolor);
    $tempDate = new DateTime('now'); #get current date and time that will not be used for graphing
    do {
        imageline($img, 1520 - (60 * $i) - $date->format('i'), 700, 1520 - (60 * $i) - $date->
format('i'), 720, $linecolor); #sets notches on x-axis for each hour
        imagestring($img, 4, 1520 - (60 * $i) - $date->format('i') - 20, 730, $tempDate->format('H') . ':' . $date->format('i') . ':00', $linecolor); #labels notches with 24-hour time
        $tempDate->modify('-1 hour');
        $i++;
    } while ((1520 - (60 * $i) - $date->format('i')) > 80);
#continues until left border is reached

    for ($i = 0; $i < 10; $i++) {
        imageline($img, 80, ($i + 1) * 80 - 100, 60, ($i + 1) * 80 - 100, $linecolor);
        #sets notches on y-axis for temps in increments of 10
        imagedashedline($img, 80, ($i + 1) * 80 - 100, 1520, ($i + 1) * 80 - 100, $linecolor);
        #gridlines for easier reading
        imagestring($img, 4, 40, ($i + 1) * 80 - 110, (9 - $i) * 10, $linecolor);
        #labels notches with Fahrenheit temperature
    }

    for ($i = 0; $i < 1440; $i++) { #24 hours
        * 60 minutes
        $return = $db->query('SELECT * FROM data where date=\'' . $date->format('m/d/Y') . '\''
and time=\'' . $date->format('H:i') . '\'''); #gets row from database for provided date
and time
        if ($return != FALSE) {
            $data = $return->fetchArray(); #separates
database returned row into an array
            if ($data != FALSE) {
                $x1 = 1520 - $i; #shifts x coordinate
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tes each iteration
    $x2 = 1520 - ($i + 1);
    if ($prevTemp != 0) {
        #will not make
        a line if last read was unsuccessful. If this is ever used in winter, will error at freezing
        temperature
        imageline($img, $x2, 700 - $data[1] * 8, $x1, 700 - $prevTemp * 8, $faren)
;        #makes a line from provided x values and previous and current temperature values
        }
        $prevTemp = $data[1];
    } else {
        $prevTemp = 0;
    }
}
$date->modify('-1 minute');
#decrements on
e minute in time
}
imagepng($img);
#creates the image
imagedestroy($img);
#frees memory spac
e from image
?>
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