```c
    /*
     * cclock.c
     *
     * Author: Michael Kepple
     * Date:    28 Mar 2013
     * Description: Digital clock implentation through curses.
    */
    #include "cclock.h"

    int main()
    {
        initscr();
        curs_set(CURSOR_OFF);
        time_t curTime;
        struct tm *localTime;
        int hourPos, minPos, secPos, cenY, cenX;
        for (;;)
        {
            time(&curTime);
            localTime = localtime(&curTime);
            hourPos = localTime->tm_hour;
            minPos = localTime->tm_min;
            secPos = localTime->tm_sec;
            cenX = MAX(0,((COLS-CLOCK_WIDTH)/2));
            cenY = LINES/2-HALF_HEIGHT;
            printTime(hourPos, cenX, cenY);
            cenX+=TIME_WIDTH;
            printColon(cenX, cenY);
            cenX+=COL_WIDTH;
            printTime(minPos, cenX, cenY);
            cenX+=TIME_WIDTH;
            printColon(cenX, cenY);
            cenX+=COL_WIDTH;
            printTime(secPos, cenX, cenY);
            refresh();
            sleep(1);
        }
        refresh();
        getch();
        endwin();
    }

    /*
     * Function: printTime
     * Description: prints out two digits at specified location representing time.
     * Params: time, beginning x-coordinates and y-coordinates.
     * Returns: Nothing.
     * Modifies: stdscr
    */
    void printTime(int time, int x, int y)
    {
        int firstDig = (int)(time/BASE);
        int secDig = time % BASE;
        int i;
        for (i = 0; i<HEIGHT;i++)
            mvwprintw(stdscr, (y+i), x, "%s",clockChars[firstDig][i]);
        for (i = 0; i<HEIGHT;i++)
            mvwprintw(stdscr, (y+i), (x+COL_WIDTH), "%s",clockChars[secDig][i]);
    }

    /*
     * Function: printColon
     * Description: displays a large colon character to the screen at specified
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```c
 *     location.
 * Params: x-coordinate and y-coordinate to begin displaying colon.
 * Returns: Nothing.
 * Modifies: stdscr
 */
void printColon(int x, int y)
{
    int i;
    for (i = 0; i<HEIGHT;i++)
        mvwprintw(stdscr, (y+i), x, "%s", clockChars[COL_INDEX][i]);
}
/*
 * File: cclock.h
 * Author: Michael Kepple
 * Date:   28 Mar 2013
 *
 */
#ifndef CCLOCK_H
#define CCLOCK_H
#include <curses.h>
#include <time.h>
#define MAX(a,b) (((a)>(b))?(a):(b))
#define CURSOR_OFF 0
#define CLOCK_WIDTH 160
#define HALF_HEIGHT 5
#define TIME_WIDTH 40
#define COL_WIDTH 20
#define BASE 10
#define HEIGHT 11
#define COL_INDEX 10
char *zero[] = {" .---------------. ","| .-------------. |",
"| |    _____    | |","| |   .'     '.  | |","| |   |   .--.  | |",
"| |   | |    | |  | |","| |   |  '--'  | |","| |    '.____.'  | |",
"| |               | |"," '---------------' "};
char *one[] = {" .---------------. ","| .-------------. |",
"| |      __     | |","| |    /   |    | |","| |    '| |    | |",
"| |     | |     | |","| |     _| |_    | |","| |    |_____|  | |",
"| |               | |"," '---------------' "};
char* two[] = {" .---------------. ","| .-------------. |",
"| |    _____    | |","| |   / ___ '.   | |","| |    _/___) |   | |",
"| |   .'____.'   | |","| |   / /___    | |","| |    |_____|   | |",
"| |               | |"," '---------------' "};
char* three[]= {" .---------------. ","| .-------------. |",
"| |    _____    | |","| |   / ___ '.   | |","| |     '' __) | | |",
"| |    _   |__ '.  | |","| |   | \\\\____) |   | |","| |    \\\_____.'  | |",
"| |               | |"," '---------------' "};
char* four[] = {" .---------------. ","| .-------------. |",
"| |    _   _     | |","| |   | | | |    | |","| |   |___| |    | |",
"| |    |____   _| | |","| |       _| |_  | |","| |      |_____|  | |",
"| |               | |"," '---------------' "};
char* five[] = {" .---------------. ","| .-------------. |",
"| |    _____   | |","| |   | |   ____| | |","| |   | |  |____   | |",
"| |   '_.____''.  | |","| |   | | \\\\____) |   | |","| |    \\\_____.'  | |",
"| |               | |"," '---------------' "};
char* six[] = {" .---------------. ","| .-------------. |",
"| |    _____    | |","| |   .'  ___  \\\\  | |","| |   | | |__\\\\_|  | |",
"| |   | '___''.  | |","| |   | (___) |   | |","| |    '._____.'  | |",
"| |               | |"," '---------------' "};
char* seven[]= {" .---------------. ","| .-------------. |",
"| |    _____   | |","| |   |  ___  |   | |","| |   |_/ / /    | |",
"| |     / /     | |","| |    /_/      | |","| |              | |",
"| |               | |"," '---------------' "};
char* eight[]= {" .---------------. ","| .-------------. |",
```

```
    "| |      _____       |  |","|  |      .’ __ ’.    |  |","|  |      |  (__)  |    |  |",
    "| |    .‘_____’.     |  |","|  |      | (___) |    |  |","|  |      ‘._____.’     |  |",
    "| |                  |  |","|  ‘--------------’ |","| ‘----------------’ "};
char* nine[] = {"  .----------------.  ","|  .--------------.  |",
    "| |     _____       |  |","|  |      .’ ___ ’.    |  |","|  |      |  (___) |    |  |",
    "| |    ’_.____. |     |  |","|  |      |  \\\\___| |    |  |","|  |      \\\_____,’    |  |",
    "| |                  |  |","|  ‘--------------’ |","| ‘----------------’ "};
char* colon[] ={"  .----------------.  ","|  .--------------.  |",
    "| |                  |  |","|  |        _       |  |","|  |       (_)      |  |",
    "| |        _         |  |","|  |       (_)      |  |","|  |                |  |",
    "| |                  |  |","|  ‘--------------’ |","| ‘----------------’ "};
char ** clockChars[] = {zero, one, two, three, four, five, six, seven, eight,
    nine, colon};
void printTime(int time, int x, int y);
void printColon(int x, int y);
#endif
#
# Makefile for cclock
# Author: Michael Kepple
# Date:   28 Mar 2013
#
cclock: cclock.h cclock.c
        gcc cclock.c cclock.h -lncurses -o cclock
```