Homework 3. IHS Loop Grids Assignment.

Due date: Monday, October 26, 10:59am.

Assignment

This assignment is designed to help you prepare for the lab quiz 2 which will take place during the week of October 26. The assignment asks you to solve a number of image generation problems within the IHS framework.

Assignment Preparation

READ THE INSTRUCTIONS FIRST. Please read this document completely **before** you start your work. This document explains to you how to use IHS, the Intelligent Homework Service system, which will provide you with a multitude of assignments for this lab, some future labs, and for the lab tests in this course.

The homework is **individual**.

Collaboration. No collaboration is allowed.

Purpose. The homework allows you to practice the use of `for` loops.

Programming Style. Unlike most other lab assignments, your use of the IHS system is NOT subject to programming style rules. Your submissions are automatically graded based on their correctness, and the grading program does not check for style. More importantly, since you will be writing only **fragments**, no complete C programs, there is no need to enforce style rules.

The Task

IHS, the Intelligent Homework Service

The Intelligent Homework Service (IHS) is located at the following URL:

http://ihs.dynalias.com/IHS

There is a student help web page located at

http://ihs.dynalias.com/IHS/Docs/StudentManual.html

Both pages are linked to from the course web page. Before starting your work on this assignment, please **read carafully** the instructions on this page, as well as the explanatory notes on the problems you will be working on, located at

http://ihs.dynalias.com/IHS/Docs/IfGridExpl.html

Loop Grids

Tiers and Grading

For this homework you will be working on the assignment number 4, titled Loop Grids: Homework in your CPE 101 workbook.

Just as the If-Grids assignment consisted of 10 tiers of problems, with each tier containing two problems, the Loop Grids assignment contains 10 tiers as well. The table below shows the tiers and their weight towards the homework grade:

Tier	Name	Cost	Cumulative
1	Warmup Loop Grid problem.	10%	
2	Basic Loop Grid problem.	10%	20%
3	Basic Plus Loop Grid problem.	20%	40%
4	C Level Loop Grid problem.	20%	60%
5	C Level Advanced Loop Grid problem.	20%	80%
6	B Level Loop Grid problem.	20%	100%
7	A Level Loop Grid problem.	25%	125%
8	Extra Credit Loop Grid problem.	25%	150%
9	Extra Credit Plus Loop Grid problem.	25%	175%
10	Extra Credit for the Crazy Loop Grid problem.	25%	200%

As before, you are expected to complete Tiers 1-5 to receive 80% of the homework grade. Complete Tier 6 (B-level problem) for 100%. Complete Tiers 7 through 10 for 25% extra credit each.

Loop Grids: what to do

Each Loop Grid assignment shows you a 2-dimensional pixelated image similar to those you worked with during the If-Grid assignment. You goal for a Loop Grid assignment is to write C code that draws the image. Your code is expected to use a number of `for` loops, and, for the most part, prohibits the use of conditional statements.

Unlike If-Grid assignments, you are expected to declare all variables you use in your code. IHS provides for you a function `draw(<row>,<col>,<color>)` where `<row>` and `<col>` identify the row and the column of the square and `<color>` is a `char` value representing the color of the square. This function paints the appropriate square of the image with the given color.

Some squares on the image are blank (white), they should not be drawn using the `draw()` function.

Earlier Tiers of the assignment offer images constructed out of multiple rectangular blocks. Starting with Tiery 5 (C Advanced), you can encounter "jagged" lines separating colored regions. Your goal is to establish how to represent these lines in your code.

Submission

Complete all Tiers you intend to complete by the beginning of the class on Monday, October 26. Your success with this assignment, as reported by the IHS to the instructor, will be used to assign the appropriate grade (**NOTE: this is a graded assignment and it goes towards your final grade!.**)