

CDS 301 Spring 2013
Scientific Information and Data Visualization

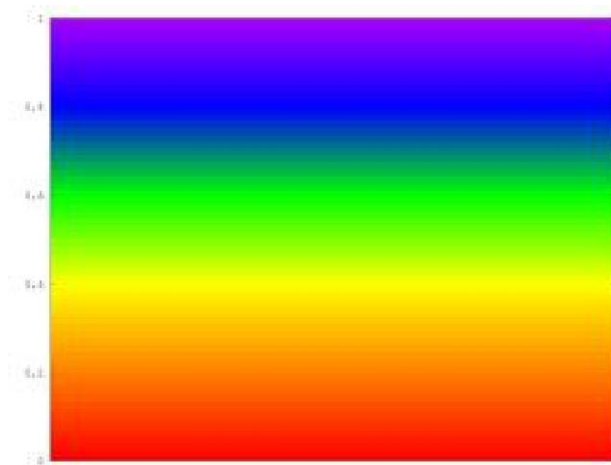
Homework Assignment 4

Assignment Date: February 19, 2013

Due Date: February 26, 2013

Create Your Own Rainbow In Matlab

The purpose of this homework is to learn the concept of colormap in visualization. You are asked to implement a Matlab program to create a rainbow map, similar to the one shown below. The algorithm of creating color attributes is shown in Listing 5.1., P133 of the Telea book.



The rainbow colormap shall have 128 colors, stored in a 128 by 3 matrix. The displayed image shall have 128 stripes, corresponding to the 128 colors. You can be creative in showing the stripes, either in row or in column. The dimensional size along the X and Y direction can also vary, based on your personal preference of showing the rainbow.

Submission: electronic submission only. You need to submit two files:

- (1) The actual Matlab program "your_program_name.m" that is ready to be run and free of errors. The rainbow image shall appear when program is called.
- (2) A WORD or PDF document that contains the image created, and a short description of the method.

Further, in the written document, provide the [R, G, B] color attribute value for $f = 0.3$ and $f = 0.8$, respectively, for a dataset with attribute value ranging between 0 and 1. Assuming the color margin $dx=0.8$.