scc0251/5830— Prof. Moacir Ponti

Assignment 1

Try to develop and implement alone, without any help.

Image generator

In this assignment you have to implement an image generator using mathematical functions. Read the instructions for each step.

Your program must allow the user to provide parameters in order to generate images by the following steps

1. **Parameter input**:
   a) filename for the image
   b) lateral size N (the image will be squared so that its size is $N \times N$),
   c) the function to be used f (1, 2, 3 ou 4),
   d) frequency parameter Q;
2. **Generate image** according to the selected function
3. **Show** the image in a window
4. **Store** the resulting image in the disk using png format

The functions f are

1. $f(x, y) = (x + y)$
2. $f(x, y) = |\sin(x/Q) \times 255|$
3. $f(x, y) = \left[(x/Q)^2 + 2(y/Q)^2\right] \times 255$
4. $f(x, y) = \text{rand}(0, 255)$

where $\text{rand}(0, 255)$ is a uniform random number generator between 0 and 255.

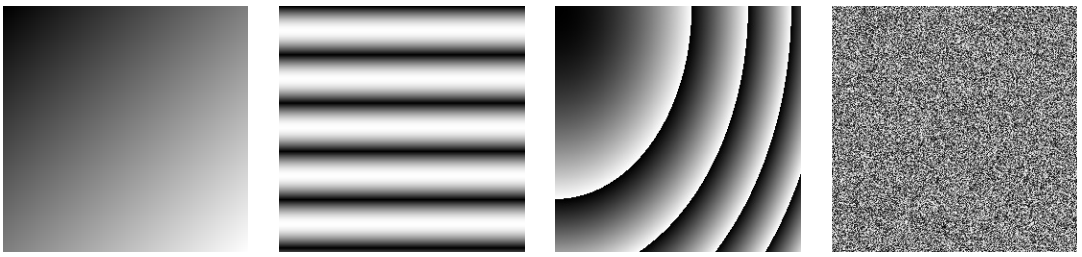
The following figure show some examples of images generated using those functions..

1 Instructions

- Individual
- Deadline: 23/03

Submission Use the Run.Codes system for submission, including ONLY the `.py` file

It is **obligatory** to comment your code. As a header, use **name and USP number** (your grading will be discounted if this is missing).



1 2 3 4