

CS 2123
Data Structures
Assignment 1
Due Friday February 5

1. (100 pts) Write a program to create a pgm file with 8x8 checkerboard pattern. Image dimensions will be 800x800 pixels and each black and white cell will be 100x100 pixels. Consider the following figure for details. In the figure B denotes black cells and W denotes white cells.

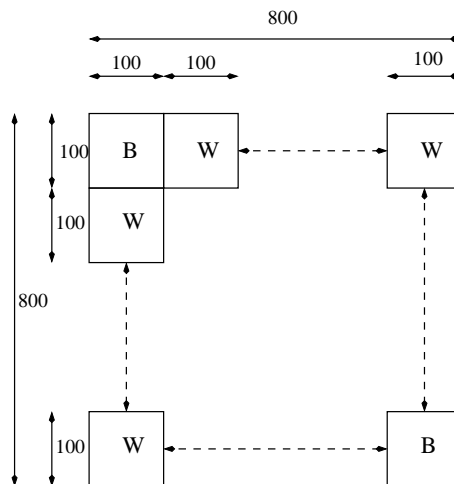


Figure 1: Checkerboard

PGM file format is as follows

```
P2
Width Height
MaxGray
Data
```

Width and height are width and height of the image. MaxGray is the maximum gray value. This will be 255 in our case. Data is grayscale pixel values (0 for black, 255 for white) separated by space. When your program produces the pgm files, you can use *gpicview* or *gimp* to open pgm files on machines running Linux. Use *pgm* extension for your files.

Sample pgm file is given below

```
P2
7 5
255
255 255 255 255 255 255 255
200 200 200 200 200 200 200
150 150 150 150 150 150 150
100 100 100 100 100 100 100
50 50 50 50 50 50 50
```

Submit your program electronically using the blackboard system

The program you submit should be your own work. Cheating will be reported to office of academic integrity. Both the copier and copiee will be held responsible.