

UNIVERSITÄT DES SAARLANDES
PROF DR. PHILIPP SLUSALLEK
LEHRSTUHL FÜR COMPUTERGRAPHIK
SVEN WOOP (WOOP@GRAPHICS.CS.UNI-SB.DE)
STEFAN POPOV (POPOV@GRAPHICS.CS.UNI-SB.DE)



MONDAY, 29ND JANUARY 2007

COMPUTER GRAPHICS I ASSIGNMENT 11

Submission deadline for the exercises: Thursday, 8th February 2007

11.1 Extended Bresenham (50 Points)

Consider the Bresenham algorithm for a line with a slope in the range of 0 to 1 and integer start and endpoint. Exploit symmetry in the computation of the decision variable to draw the line from both sides simultaneously using a single decision variable d only. You do not have to implement the algorithm, but to derive how to initialize x , y , and the decision variable d and how to update them in each case.

11.2 Bresenham for Parabola (50 Points)

Develop a mid-point algorithm to draw the fixed parabola $y = \frac{1}{12}x^2 + 2$ in the range of 0 to 6. Again derive the formulas to initialize and update x, y , and the decision variable d .