Homework 2

178 359 Simulation and Modeling

Due: Friday, 18 December 2009

Problem 1: Given a set of control points of $(0,0)$ $(1,3)$ $(3,4)$, $(4,2)$ and $7,-1$. Suppose that this is the control points for Hetmite curve. Consider the curve as Bezier curve then find Bezier control points from the given Hermite control points.

Problem 2: Consider the set of control points from Problem 1. Suppose that the control points are for Ball curve. Consider the curve as Hermite curve then find Hermite two control points and two Hermite tangent lines.

Problem 3: Consider the set of control points from Problem 1. Suppose that the control points are for Ball curve. Consider the curve as Bezier curve then find Bezier control points from Ball control points.

Problem 4: Consider the set of control points from Problem 1. Suppose that the control points are for Said-Ball curve. Consider the curve as Bezier curve then find Bezier control points from Said-Ball control points. (hint: It will be easier if you use the formula in Lecture 8)

Problem 5: Consider the set of control points from Problem 1. Suppose that the control points are for Wang-Ball curve. Consider the curve as Bezier curve then find Bezier control points from Wang-Ball control points. (hint: It will be easier if you use the formula in Lecture 8)

Problem 6: Consider the set of control points from Problem 1. Suppose that the control points are for Bezier curve. Find polar form of all control points.

Problem 7: Consider the set of control points from Problem 1. Suppose that the control points are for Wang-Ball curve. Find a transformation matrix that will convert the control points to Bezier control points. And suppose the control points are for Bezier curve. Find a transformation matrix that will convert the control points to Wang-Ball points.