Computer Science Department
CPSC 453
Programming Assignment #3
Modeling
Due Date: Friday, November 21, 2003
Total Marks: 110 with bonus 35 additional points

Write a program for generating tensor-product surfaces from a net of control points and based on the following **subdivision curve** schemes:

1. Cubic Bezier
2. Chaikin with open conditions
3. Cubic B-spline with open conditions

The following features must be provided:

4. Appropriate user interface to insert and edit control points
5. Tools to control these parameters:
   the number of subdivision steps
   Bezier/Chaikin/Cubic B-spline
6. Option for changing view specification
7. Flat and smooth Shading (based on OpenGL)

Bonus

8. closed conditions for Chaikin and Cubic B-spline.
9. More sophisticated interface. (for example this might include: editing tools for the closed conditions, arbitrary 3D picking, multiple coordinated views, multi-level editing)

In addition, a document that includes algorithms, data structures, design decisions and a simple user manual must be provided.

Marking:

1. 20 points
2. 25 points
3. 30 points
4. 20 points
5. 5
6. 5
7. 5
8. 10
9. 25

Total=110 with bonus 35 additional points.

More details about this assignment will be covered in the labs.