Daniel Son

Progress Report 2

Program Usage Guide

# COMPILING AND RUNNING

The program is created using FreeGLUT in Visual Studio. Otherwise, it can also be compiled through CSIF using the compile command “g++ main.cpp -lglut -lGL”, and the corresponding display window can be displayed using “Xming”.

**USING THE PROGRAM 1. Menu and Display Windows**

The program displays an interactive display window and a menu window.

# 2. Control Point Manipulation

The display window has a size of 500 x 500. This means that control points can be placed within the domain and range of 0 < x < 499 and 0 < y < 499.

# 3. Utilizing the Menu

The menu is mostly self-explanatory. Enter the number of the wanted choice when prompted. Press “Enter” to finalize the choice input.

**Menu Functions**

**1. Degree-raising and degree-reduction algorithm**

Demonstration of a degree-raising and degree-reduction Bezier curve.

# 1. Manipulate points

Use the “DISPLAY” window to input, remove, and move control points as prompted in the instructions. Press “q” in the “DISPLAY” window to bring the menu up again.

**2. Change degree**

Change the degree by entering a positive or negative number.

# 3. Clear everything

Clears all data and starts the same program again.

**4. Exit program**

Go back to main menu.

**2. Aitken’s algorithm**

Demonstration of Aitken’s algorithm for polynomial interpolation

# 1. Manipulate points

Use the “DISPLAY” window to input, remove, and move control points as prompted in the instructions. Press “q” in the “DISPLAY” window to bring the menu up again.

1. **Change “t”**

Change “t” to observe differences in the curve.

1. **Clear everything**

Clears all data and starts the same program again.

# 4. Exit program

Go back to main menu.