

# Assignment 1: Cartoonify

Loyola Marymount University

CMSI-371: Introduction to Computer Graphics

Professor Alex Wong

Given a headshot photo of an individual (e.g. the headshot of Ed Sheeran), generate the cartoon version of the photo by sketching it using Chaikin's or Bézier curves.

The assignment is due **11:59 PM February 7, 2020**. A skeleton is provided in assignment1.cpp.

I have provided you with a simple Vertex class that allows you to specify the x and y values of a point. You will utilize this class for modeling the control points of your sketch.

**\*\*Note:** the C++ vector class is equivalent to a list in most other languages.

You will complete the following functions for the assignment:

- 1) `generate_points` : a function that generates the set of control points for a curve  
parameters: `vector<Vertex>`  
returns: `vector<Vertex>`
- 2) `draw_curve` : calls `generate_points` to generate the set of points for the Chaikin's or Bézier curve algorithm and connects the points with lines  
parameters: `vector<Vertex>`, `int`  
returns: `none`

Submission:

You will submit the following to Bright Space

- 1) "assignment1.cpp"
- 2) Your sketch in JPEG, JPG, or PNG: `results.{jpeg, jpg, png}`
- 3) The photo your sketch was based on in JPEG, JPG or PNG: `photo.{jpeg, jpg, png}`

Grading:

I will be compiling the assignment using the following command:

```
gcc -o assignment1 assignment1.cpp -lGL -lGLU -lglut
```

Your code must compile for me to assign points!

Your assignment will be graded on:

- 1) the correctness of your implementation of Chaikin's or Bézier's algorithm
- 2) effort placed recreating the subject via your sketch  
e.g. a simple happy face does not do Ed Sheeran justice

Late Policy:

For each day the assignment is late, 50% of its worth will be deducted, e.g. 100% on time, 50% 1 day late, 25% 2 days late, etc.