A Project on Eid Festival (Scenario)

Course: Computer Graphics

Section – F

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Name: Tarif Sadman

ID: 18-36466-1

American International University -Bangladesh

Objective

Scenario With Eid festival is a computer graphics project where a city is designed in two modes “Day Mode " and “Night Mode”. This project is about to be introduced with the city Eid Environment. Though it is a graphic based project, I designed it as an animation. It is functional, colorful and animated. I have created some artifacts on this project like- sun, eid moon, clouds,rain, rivers,train,festive mode etc. Some animations are automatic and some are keyboard pressable .

Methodology / System Implementation Method

I have written the code blocks in C++ and made the project with OpenGL & GLUT basics. OpenGL is a type of low-level graphics rendering API. It generates high-quality color images composed of geometric and image primitives. I have used RGB color codes as element color. I have used different primitives to make different shapes.

Different algorithms such as DDL algorithm mid Point Line algorithm mid-point circle algorithm have been used to make perfect pixel elements. Again Translation Scaling Rotation (Clockwise and Anti-Clockwise) has been used to increase, decrease, move and rotate elements. Also Homogeneous 2D, Transformation, Mirror Reflection, Scan conversation, clipping, Bezier Curves and RGB Colors were used in our project.

I have added some Keyboard pressable animation such as by pressing ‘n’ the scenery changes from day to night in our night version the color of the sky changes. stars are added, eid moon rises.Again by pressing the key ‘d’ the train will go forward and moving, with 'a' trains moving to backward.With 's' Train will stop . By pressing ‘R’ rain will start.By pressing ‘E’ it will stop.

Significant of the Project

I have learnt a lot of graphics features during this course and project. I came to know about GLUT, OpenGL, all the graphics libraries, utilities and toolkits. I came to know the use of primitive, RGB color code through this project. I leant different types of algorithms and their uses. Now I know how to animate, make shapes, move or rotate elements with codes. Also come to know about pixels, resolutions, rasterization, different clipping, 2D transformation, mathematical function for animation and their uses.

Conclusion

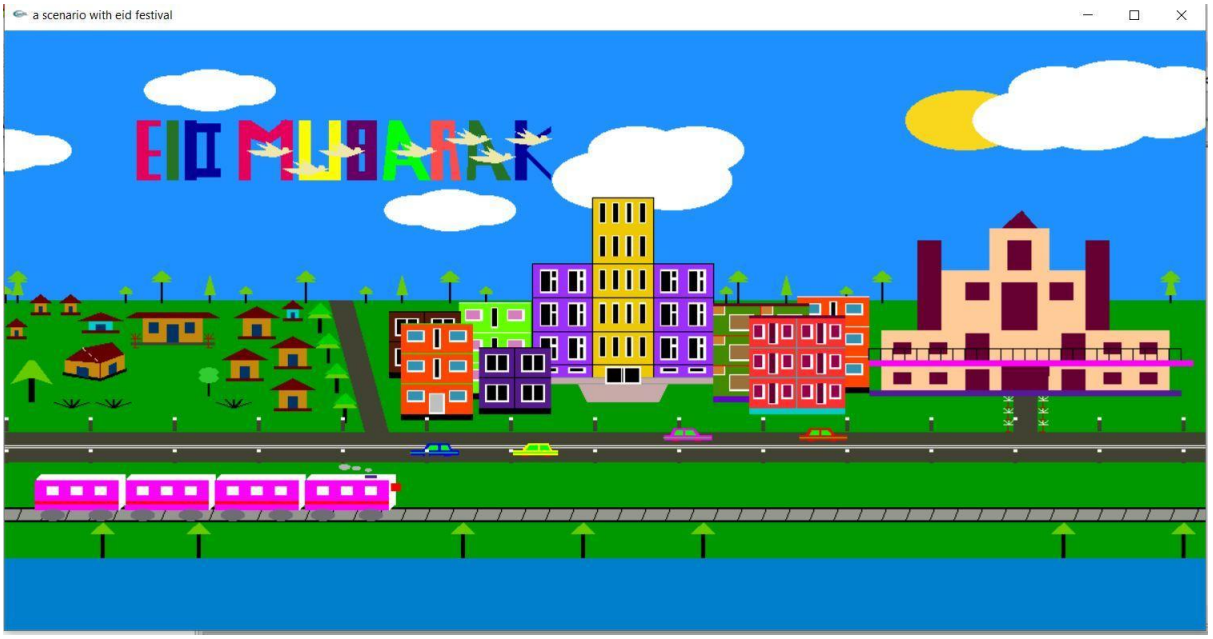
Without any doubt it was a very amazing and knowledgeable course. I have learnt and am able to use all the functions to create a graphics interface using GLUT and C++. It was a very fruitful project as I got a chance to implement all the knowledge from the computer graphics course. Through this project I came to know about our limitations and abilities. I will definitely implement and increase our knowledge and skills in future.

Referencing

- Course slide
- Sample Project 2
- https://www.youtube.com/watch?v=aG9VLRFa-2k
- https://www.youtube.com/watch?v=RGB-wlatStc
- https://en.wikipedia.org/wiki/Rasterisation
- https://www.tutorialspoint.com/computer_graphics/line_generation_algorithm.htm
- https://www.gatevidyalay.com/2d-transformation-in-computer-graphics-translation-examples/
- https://en.wikipedia.org/wiki/B%C3%A9zier_curve
- https://en.wikipedia.org/wiki/Clipping_(computer_graphics)
- https://www.onlinestudy.xyz/2019/06/clipping-in-computer-graphics.html
- https://rgbcolorcode.com/color/dirt

Screenshot of the System

Day view of city



Night view of city