



AMERICAN INTERNATIONAL UNIVERSITY– BANGLADESH (AIUB)

COMPUTER GRAPHICS

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Topic: Sajek Scenario

Section: G

Group: 1

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1. Introduction

Sajek is a famous tourist attraction in Bangladesh. To create a virtual representation of Sajek, our computer graphics project has taught us a multitude of valuable skills and knowledge.

Firstly, we have gained a deeper understanding of the graphics pipeline, including the various stages involved in creating and rendering 2D models. We have also learned about different graphics libraries and tools, such as OpenGL and GLUT, which have enabled us to develop our project efficiently.

Moreover, our project has taught us about the importance of optimizing graphics performance, such as reducing the number of polygons, implementing efficient function techniques, and optimizing texture usage. These techniques have enabled us to create a smooth and immersive experience.

Additionally, we have learned about the importance of teamwork, communication, and project management. Working together, we have divided tasks, collaborated on code, and provided constructive feedback to improve the overall quality of our project.

Overall, our computer graphics project has been a valuable learning experience, providing us with practical skills and knowledge that can be applied to future projects and careers in computer graphics.

2. Problem Statement

The main problem faced during the development of our computer graphics project on creating a virtual representation of Sajek, also the time barrier, sudden changes in the project's requirements. Due to academic pressure, we had to work under tight deadlines, which made it challenging to implement all the desired features which optimize graphics performance. Additionally, our project's requirements were changed midway, which required us to recreate the entire project from the beginning which added more pressure on the team. Despite these challenges, we were able to successfully complete the project and acquire valuable skills and knowledge.

3. Objective of the Project

The objective of our computer graphics project is to create a virtual representation of Sajek, a famous tourist spot in Bangladesh known for its scenic beauty and natural surroundings. The main goal is to develop an immersive and interactive experience that allows users to explore and appreciate the beauty of Sajek from computer screens. The project aims to utilize various graphics techniques, such as rendering, lighting, and texturing, to create a realistic and visually appealing digital environment. Additionally, the project aims to provide a platform for us to acquire practical skills and knowledge in computer graphics development, including graphics pipeline, optimization techniques, and project management. Overall, the objective of our project is to showcase the potential of computer graphics in creating virtual environments and inspire others to explore the beauty of Sajek.

4. System Implementation Method





The implementation of our computer graphics project on creating a virtual representation of Sajek involved the following implementation method:

- ✚ **Environment Setup:** We first set up the development environment by installing the necessary software, including the C++ compiler, OpenGL library, and GLUT.
- ✚ **Project Planning:** We identified the project requirements, including the desired features, performance targets.
- ✚ **Coding:** Using the C++ programming language, we wrote the code to implement the system design, utilizing libraries such as "bits/stdc++.h", "GL/gl.h", and "GL/glut.h". We used various OpenGL functions such as "glPushMatrix()", "glTranslatef()", and "glBegin(GL_)" etc. to create 2D models, textures, and other graphics elements.
- ✚ **Testing:** We performed bug testing to ensure that all codes and functions of the system were working together correctly.
- ✚ **Debugging:** During the testing phase, we identified and fixed any bugs or errors in the code. We also optimized the code to improve graphics performance and reduce processing time.
- ✚ **Deployment:** We documented the project, including the system design, implementation details, and testing results. Finally, we deployed the system for viewers to access and experience the virtual representation of Sajek.

Overall, our implementation method involved a systematic and iterative approach, focusing on the development of a functional and optimized system that meets the project requirements.

5. Significant of the Project

The computer graphics project on creating a virtual representation of Sajek is significant for several reasons:

-  **Enhancing Learning:** The project offers valuable learning experience for students of computer graphics, providing practical skills and knowledge in graphics development, optimization techniques, and project management.
-  **Advancing Technology:** The Project showcases the application of various graphics techniques, such as rendering, lighting, and texturing, and promotes the advancement of technology in this field.
-  **Encouraging Creativity:** The project encourages creativity in developing virtual environments and can inspire others to explore different techniques and tools in graphics development.
-  **Improving Teamwork:** The project involves teamwork, allowing individuals to work together. It promotes effective communication, division of tasks, and constructive feedback to improve the overall quality of the project.

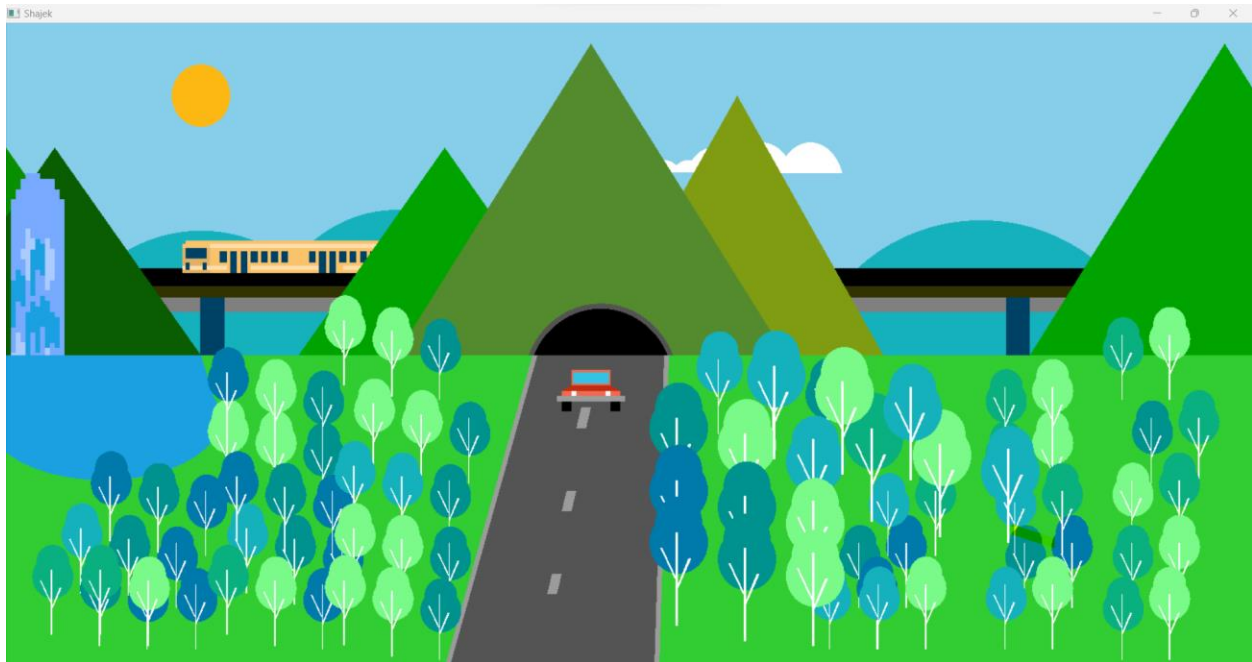
Overall, the computer graphics project on creating a virtual representation of Sajek has significant implications for enhancing learning, advancing technology, encouraging creativity, and improving teamwork etc.

6. Conclusion

The computer graphics project on creating a virtual representation of Sajek has been a valuable learning experience for us. We have gained practical skills and knowledge in graphics development, optimization techniques, and project management. The project also has significant implications for advancing technology, encouraging creativity, and improving teamwork. Overall, the project showcases the potential of computer graphics in creating immersive and interactive digital environments so that we can learn basic concepts of the course and can implement these in corporate life.

7. Screenshot of the System

Day View



Night View

