

Group Information		
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Initial Project Description

Title: A Journey Through the Seasonal Changes of Bangladesh Across Rural and Urban Areas using OpenGL.

Objective: This project aims to showcase four scenes representing different seasons in Bangladesh, highlighting the contrast between urban and rural settings. Each scene will feature animations, interactive elements, and smooth transitions between day and night, as well as between scenes.

Scene 1: Summer in Town

This scene will depict a bustling urban environment during the summer, reflecting the heat and energy typical of a Bangladeshi town.

Contents

- A townscape with buildings, roads and a lamppost.
- A small park with trees.
- A bright, blue sky with a blazing sun and clouds.

Animations

- Tree leaves will sway gently in the breeze.
- Cars will move along the roads.
- The sun will rotate in the sky.
- Airplane is moving in the sky.
- Clouds moving across the sky.

Mouse Interaction

- Clicking a specific point/button will turn the lamppost on/off simultaneously.

Keyboard Interaction

- Pressing 'D' key will transition the scene to day.
- Pressing 'N' key will transition the scene to night.

Individual Scene Transitions

- **Day to Night:** The sky will dim, transitioning into a sunset, and then night.
- **Night to Day:** The sky will brighten as the sun rises.

Scene 2: Rainy Season in Rural Area

This scene will illustrate the beauty of a rural village during the rainy season, featuring lush greenery and flowing water.

Contents

- A serene village with huts, a river, and a small pond.
- Trees and fields, soaked by the rain.
- A cloudy sky, rain dropping from the sky.

Animations

- Raindrops will fall from the sky.
- Bubbling water will appear in the pond due to rainfall.
- Trees will sway under the effect of a breeze.
- A boat will gently move across the river.
- A windmill will continuously rotate under the influence of the wind.
- Fireflies will glow in clusters at night (during night).
- Lightning flashes will illuminate the sky (if applicable).

Mouse Interaction

- Clicking on a hut's door/windows will toggle a lantern light inside.

Keyboard Interaction

- Pressing 'R' key will start rain animation.
- Pressing 'X' key will stop the rain animation.
- Pressing 'W' key will start windmill rotation animation.
- Pressing 'Y' key will stop the windmill rotation animation.
- Pressing 'D' key will transition the scene to day.
- Pressing 'N' key will transition the scene to night.

Individual Scene Transitions

- **Day to Night:** The sky will darken, and fireflies will glow around trees.
- **Night to Day:** The sky will brighten gradually; fireflies will fade away.

Scene 3: Winter in Town

This scene will portray a quiet urban setting during winter, featuring foggy mornings and warm tea stalls.

Contents

- Streets lined with bare winter trees and fallen leaves, and a lamppost.
- Foggy surroundings with visible breath vapor from chimneys and tea stalls.

- A serene urban winter atmosphere.

Animations

- Snow will fall from the sky.
- Tree leaves will sway gently in the breeze.
- Cars will move along the roads.
- The sun will rotate in the sky.
- Airplane will move in the sky.

Mouse Interaction

- Clicking a specific point/button will turn the lamppost/streetlights on/off simultaneously.

Keyboard Interaction

- Pressing 'S' key will start snow animation.
- Pressing 'X' key will stop the rain animation.
- Pressing 'D' key will transition the scene to day.
- Pressing 'N' key will transition the scene to night.

Individual Scene Transitions

- **Day to Night:** The fog will thicken, transitioning into sunset.
- **Night to Day:** The fog will clear, and the sky will lighten.

Scene 4: Winter in Rural Area

This scene will capture the quiet beauty of a rural area during winter, showcasing snow-covered landscapes and a tranquil atmosphere.

Contents

- A rural village will feature snow-covered trees, and fields.
- A frozen pond will be visible, with scattered snowflakes adding to the wintry charm.
- A cloudy sky will periodically release snowfall.

Animations

- Snowflakes will fall gently from the sky.
- Trees will sway lightly in the winter breeze.
- Windmills will continuously rotate under the influence of the wind.
- The sun will rotate in the sky.
- Fireflies will glow in clusters at night (during night).

Mouse Interaction

- Clicking on windows/door of a hut will toggle a lantern inside.

Keyboard Interaction

- Pressing 'S' key will start snow animation.
- Pressing 'X' key will stop the rain animation.
- Pressing 'D' key will transition the scene to day.
- Pressing 'N' key will transition the scene to night.

Individual Scene Transitions

- **Day to Night:** The sky will darken, and fireflies will illuminate the surroundings.
- **Night to Day:** The sky will gradually brighten, and the fireflies will fade away.

Transition Between Scenes

- Pressing 'J' key will trigger a transition to the next scene.
- Pressing 'H' key will trigger a transition to the previous scene.

Conclusion

This project will highlight seasonal transitions in Bangladesh through vibrant animations and interactive elements. It aims to provide a visually engaging experience while meeting all course requirements.