BBM414 - Experiment 4

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Introduction

In this experiment ,We will implement two task first one is basic and just change or add some codes which is given us.First part we will some perspective operations given over given object and according to pointer movement we eill change direction or angle of object given position interval.Second part we are expected to display a monkey head over a surface .We will create a scene by placing a gray “Monkey head” on a green flat surface. We draw the surface downside of object.And also , we have to use pointer lock api and other features in this part such as camera movement, speed angle and speed of the monkey head. And, we can use ‘e’ key of the keyboard for active or deactive of the PLA .When we use this feature, we can use the mouse to change view of camera

Part1

In this part, I used pointer lock api forachive desired result and add two eventListener to take moue positions over x-axis and y-axis.When the user press ‘p’, the Mouse will be enabaled for changing required variables such as theta and phi. If the users press ‘p’ key on the keyboard then it can use mosue to move object if users press the ‘p’ again the activatio variable will switch 1 to 0 and Mouse will be disabaled for using until press again to do this ı use some matrix such as scale_matrix, transformatiom_matrix and rotation_matrix to catch and diplay Mouse pointer movement.

Part2

In this part, we used monkey_head.obj file which is given. To use this file ı used jquery.min.js file which is placed into js folder and read line by line given object file put verticies and datas into some arrays .Then the drawScene function will draw monkey_head and ı implement the "+" key to Increases the rotation speed of the monkey_head. "-" key - Decreases the rotation speed of the monkey_head. Up Arrow key - Moves camera forward along the global z-axis. Down Arrow key - Moves camera backward along the global z-axis. Right Arrow key - Moves camera to the right along the global x-axis. Left Arrow key - Moves camera to the left along the global x-axis. Page Up key - Moves camera to the upward along the global y-axis.Page Down key - Moves camera to the downward along the global y-axis. "e" key - Locks the mouse to get mouse input. Vertical movement of the mouse rotates the camera around its sideways axis by updating theta with radians. Horizontal movement of the mouse rotates the camera around its y-axis by updating phi with radians.

Conclusion

In this experiment, I get learn how to use pointer lock api and how to load an object from obj file and display using webgl technologies.using webgl we can visualize a lot of things just need positions of object data .it will useful for lost of techonologies we can imagine without real world some features.

Function Name	İnput(s)	Info
checkWebGL	`canvas`	**Create webgl canvas**
createShader	`gl, shaderType, shaderSource`	Create shader for program
drawScene	`gl, canvas, vertexShader, monkeyShader, surfaceShader`	Draw monkey_head object
readMonkeyHead	`callback, gl, canvas, vertexShader, monkeyShader, surfaceShader`	Read data of monkey head and call drawscene as callback
clickEvent	`clickID,canvas`	Take input of keyboead
updatePosition	`event`	Update Mouse position info
resizeCanvasToDisplaySize	`canvas`	Resize canvas