Wire Car Main Functionality

1. Wire Car Skeleton
2. Pop Up Menu

Mouse Right Click 🡪 RGB color options + Exit

1. Mouse Function

Mouse Left Click + Drag the Mouse 🡪 Rotate the Wire Car

1. Keyboard Function
2. Press ESC 🡪 Exit
3. (Up, Down, Left, Right) Arrow keys 🡪 Rotate the Wire Car

Project Report 1 (My experiences)

***(Project Report 1 explaining my experiences. What functions, features did i use ?)***

|  |  |
| --- | --- |
| glMatrixMode(GL\_PROJECTION); | // Use the Projection Matrix |
| glLoadIdentity(); | // Reset Matrix |
| glPushMatrix(); | // save previous matrix |
| glMatrixMode(GL\_MODELVIEW); | // Get Back to the Modelview |
| gluOrtho(); | // Set Ortho Projection |
| glPopMatrix(); | // restore previous projection matrix |
| glTranslatef(); | // produces a translation by x y z . |
| glRotatef(); | //produces a rotation of *angle* degrees around the vector x y z . |
| glScalef(); | //produces a nonuniform scaling along the x, y, and z axes. |
| glBegin(GL\_LINES); | //Treats each pair of vertices as an independent line segment. |
| glutWireCube(); | //glutWireCube render a solid or wireframe cube respectively. |
| glBegin(GL\_LINE\_STRIP); | //Draws a connected group of line segments from the first vertex to the last. |
| gluLookAt(); | //creates a viewing matrix derived from an eye point, a reference point indicating the center of the scene, and an UP vector. |
| glClear(); | //sets the bitplane area of the window to values previously selected. |
| glutSwapBuffers(); | //Performs a buffer swap on the layer in use for the current window. |
| glutPostRedisplay(); | //marks the current window as needing to be redisplayed. |
| glViewport(); | // update viewport |
| glutCreateMenu(); | //creates a new pop-up menu. |
| glutAddMenuEntry(); | // adds a menu entry to the bottom of the current menu. |
| glutAttachMenu(); | //attaches a mouse button for the current window to the identifier of the current menu. |
| glutAddSubMenu(); | // adds a sub-menu trigger to the bottom of the current menu. |
| glutKeyboardFunc(myKeyboard); | // sets the keyboard callback for the current window. |
| glutSpecialFunc(specialKeys); | // sets the special keyboard callback for the current window. |
| glutMouseFunc(myMouse); | // sets the mouse callback for the current window. |
| glutMotionFunc(myMouseMove); | //set the motion callbacks respectively for the current window. |
| glutReshapeFunc(myReshape); | // sets the reshape callback for the current window. |
| glutDisplayFunc(display); | // sets the display callback for the current window. |

Project Report 2 (Code)

***(Project Report 2 explaining my code. Also you can find this explanations as a comment line in the code. )***

1. Defining libraries
2. Defining variables (for mouse click, rotating, screen size..)
3. myIdle() : Animation routine which calls itself after “delay” miliseconds
4. init() : Projection Mode, LoadIdentity..
5. Creating functions: front, back, bottom, top, left, right for the wirecar’s 3D appearance

void front() contains front of the wirecar and axle for the steering wheel

void back() contains back of the wirecar

void bottom() contains bottom of the wirecar, back and front axle

void top() contains top of the wirecar

void left() contains left of the wirecar

void right() contains right of the wirecar

1. void wheel(int a, int b, int c, int d, int e) creates car whells and steering wheel for the wirecar (a, b, c, d, e is using for the size and place of the wheel.)
2. void rotateLine() contains spining line inside of wheels.
3. void car() contains front,back,top,bottom,left,right,rotateLine,wheels(all ofthem)
4. display() : for the rendering
5. void myReshape(int width, int height) , adjust the camera aspect ratio to match that of the viewport
6. void goMenu() creates menu options for colors
7. void specialKeys() gives the ability to rotate the up, down, right, left arrow keys
8. void myKeyboard() gives the ability to exit .exe file the ESC key
9. void myMouse() gives the ability to rotate the mouse
10. void myMouseMove() : This even callback is executed whenver the mouse is moved
11. void main() : creating console window, functions are called (display, reshape, mouse, keyboard..) , creating pop up menu

Resources

Skeleton.docx

CSE 411 Presentation Files

<https://www.opengl.org/archives/resources/code/samples/redbook/>

<https://www.youtube.com/watch?v=TSJlhPCljEg>

<http://opengltr.blogspot.com/p/ders-1-glut_15.html>