NITTE EDUCATION TRUST | N.M.A.M. INSTITUTE OF TECHNOLOGY
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Mini Project – Report Submitted to NMAM Institute of Technology, Nitte an Autonomous Institution affiliated to VTU Belagavi

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DOS Operating Systems(GUI)

Report on Mini Project

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ABSTRACT

Motivation:

To build a Graphical User Interface (GUI) of an Operating system named Door Operating System (DOS). In this Mini project we have emulated an Operating system by booting it with user interactions using OpenGL functions.

Some of the OpenGL functions we used are:

OpenGL Utility Library (GLU):

The GLU is included with OpenGL and built using low-level OpenGL commands. It contains routines for setting up viewing and projection matrices, polygonal tessellation and surface rendering. When using the GLU library you will need to #include <GL/glu.h> in your program. GLU routines begin with the prefix **glu**.

OpenGL Utility Toolkit (GLUT):

The GLUT is a window system-independent toolkit written to hide the complexities of differing window system APIs. It is much easier to use and more portable but far less featured than the GLX library. Functions performed include window definition, window control, and monitoring of keyboard and mouse input. GLUT also has limited support for creating pop-up menus. In order to use the GLUT library you will need use #include <GL/glut.h> instead of #include <GL/gl.h> in your program. GLUT routines begin with the prefix **glut**.

Idle Function:

To perform animation (e.g., rotating the shapes), you could register an idle() callback handler with GLUT, via glutIdleFunc command. The graphic system will call back the idle() function when there is no other event to be processed.

glutKeyboardFunc:

Registers callback handler for keyboard event.

glutSpecialFunc:

Registers callback handler for special key (such as arrow keys and function keys)

Switching between Full-Screen and Windowed-mode:

We use a special-key handler to toggle between full-screen and windowed modes using F1 key.

Handling Mouse Inputs with GLUT:

We can register callback function to handle mouse-click and mouse-motion.

glutMouseFunc:

Registers callback handler for mouse click.

Description:

Topic: Door Operating System

In our project we are emulating GUI of Operating System using OpenGL (Open GL is a software interface to graphics hardware). Open GL is a cross-language, cross-platform application programming interface (API) for rendering 2D and 3D vector graphics.

Features:

1) Used Keyboard Interaction such as :
F1 : Display Mode, Esc : Exit, 1 : Intro, 2 : Synopsis, 3 : Boot

2) Used Mouse Interaction such as :
To Refresh, Open a directory, To Lock screen, To Turn OFF and so on.

Extra Features Included :

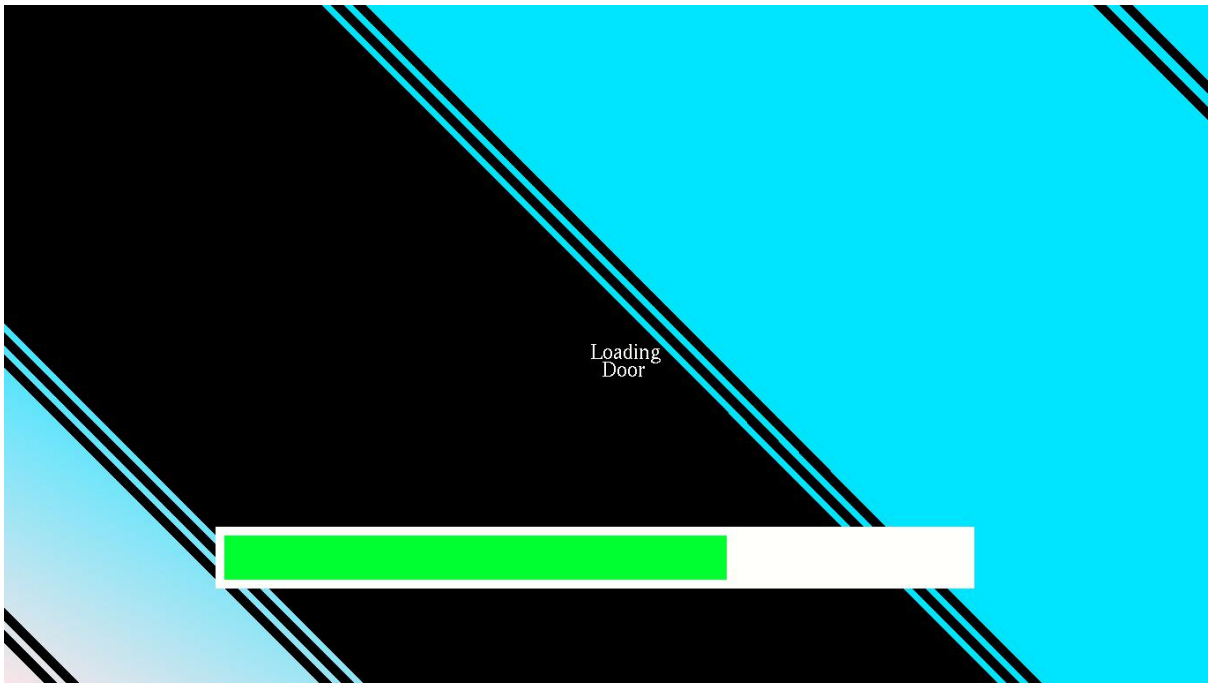
1) Time Format: Day-Month-Date-Time-Year
2) Start Menu
3) Drop Down Options
4) Background Music
5) Double Click Functionality
6)Two Way Authentication :
   - On Click
   - Use Password
7) Takes Screenshot by itself

Screenshots of our Project:

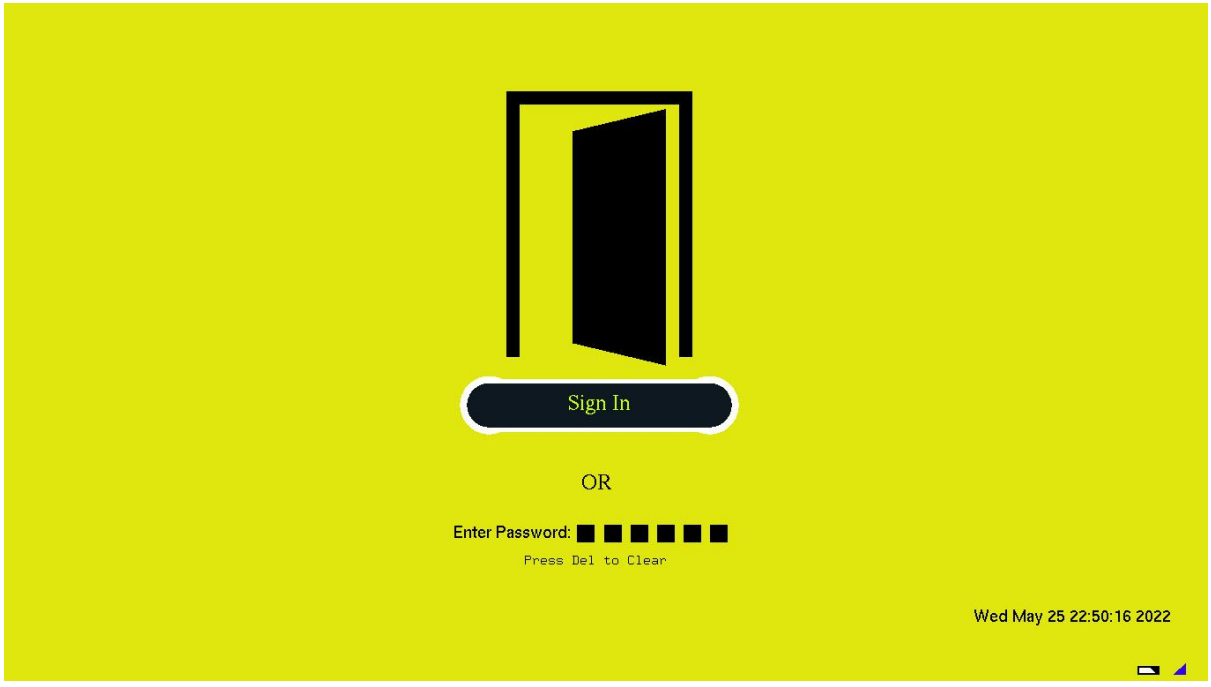
1) Description Page:

2) Introduction Page:

3) Loading Page:

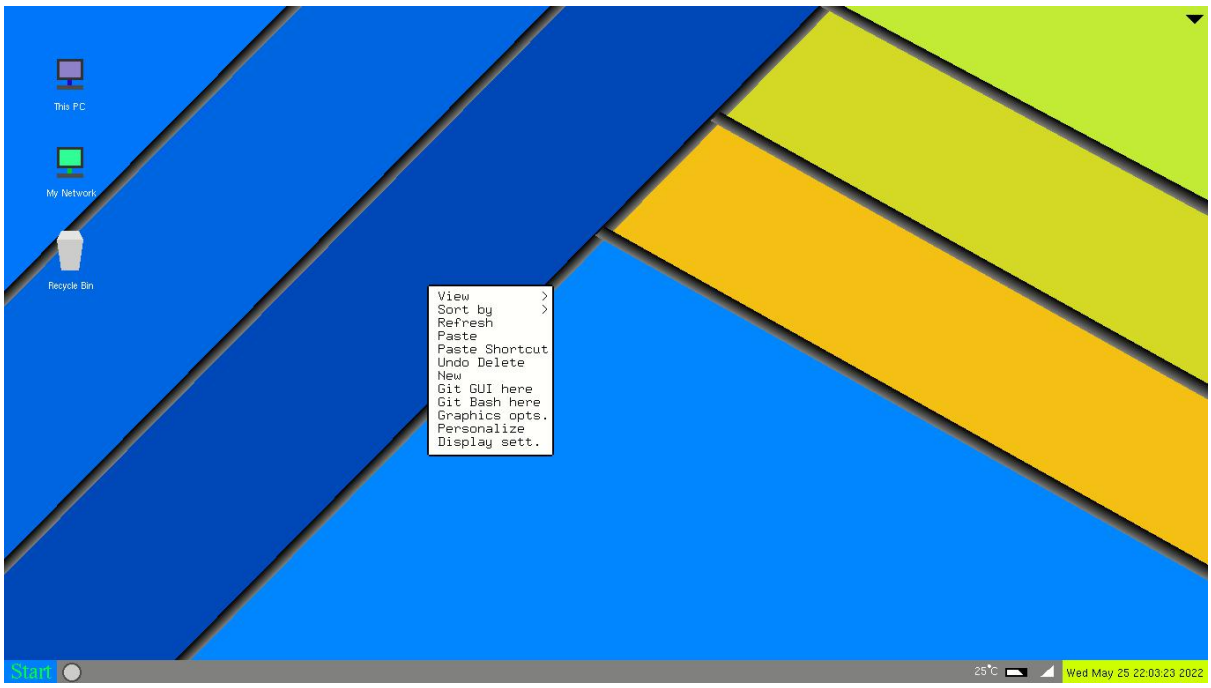


4) Signup Page:



5) Main Screen Page:

6) Refresh Option:

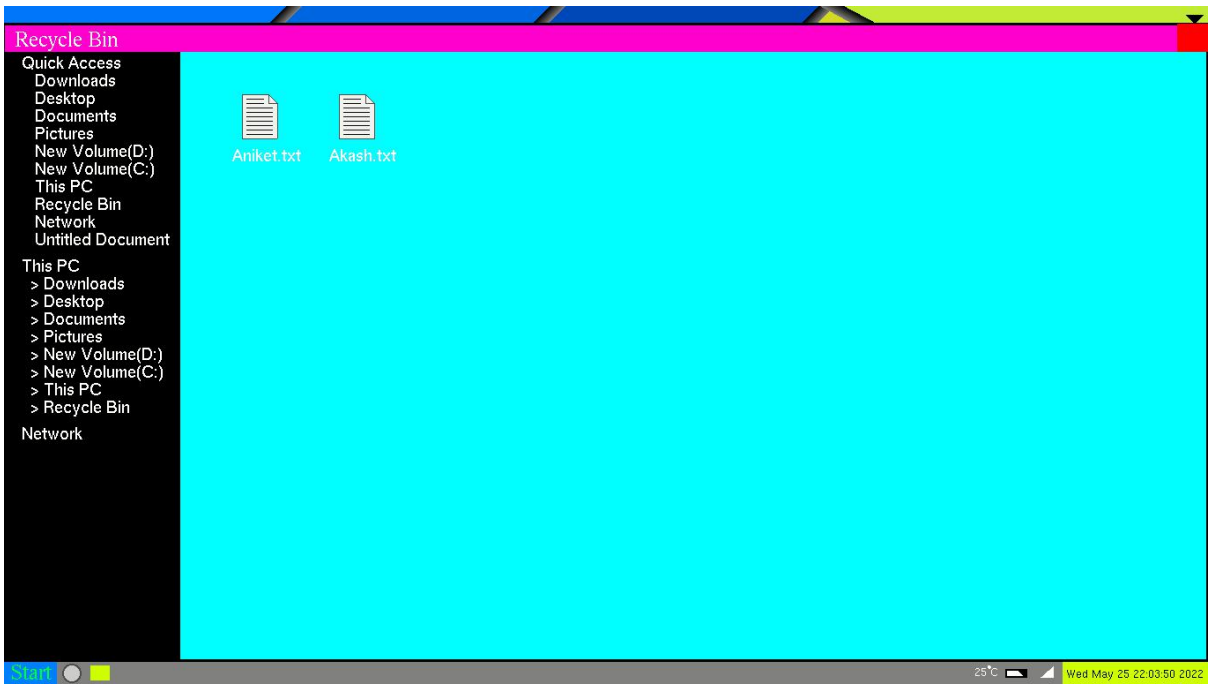


7) On Click Icon:

8) This PC:

9) Network:

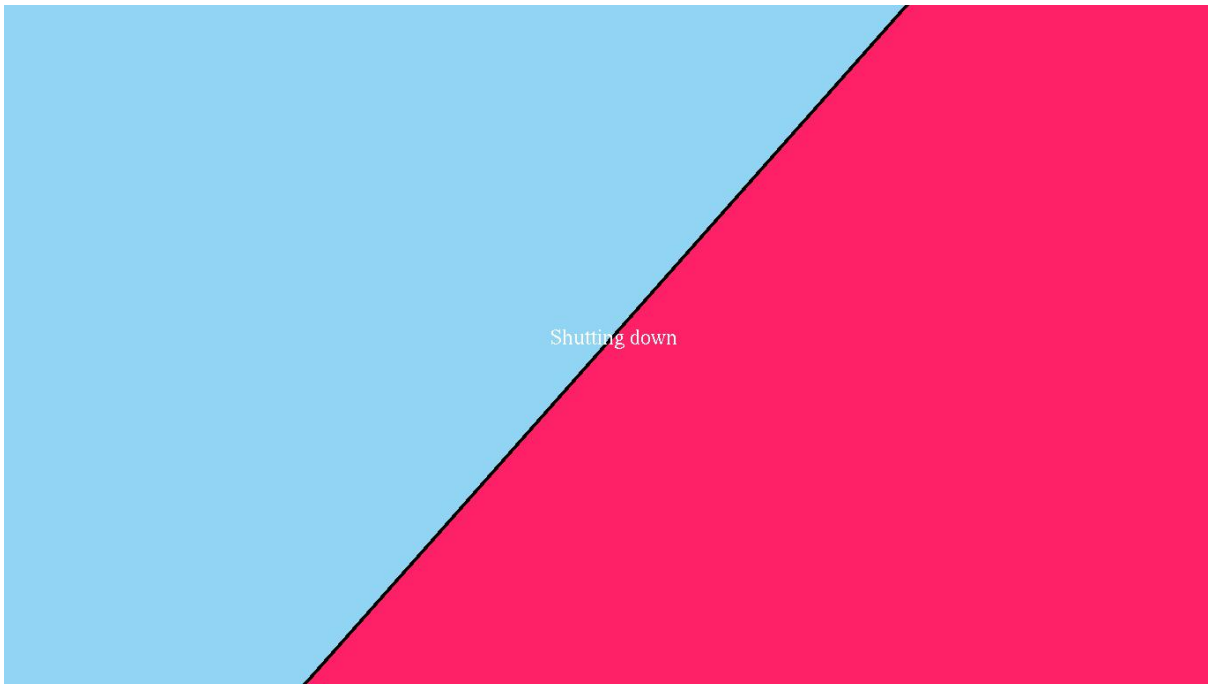
10) Recycle Bin:



11) Start Button:

12) Turn Off Options:

13) Shutting Down:



Conclusion:

We successfully implemented this project using OpenGL functionalities and learnt a lot about its implementation and used it according to our requirements.

Future improvements:

We can further implement Paint and Notepad applications in our project using OpenGL.