* Assignment ** - 7 *

Aim:-

open GL and Animation.
write a c++ program to simulate any of the following scenario.
a) clock with pendulum.

Theory:-

open GL Basics:

Open Graphics Library (open GL) is a cross language (language independent), cross platform (platform independent) API for rendering 2D & 3D vector graphics (use of polygons to represent image). open GL is a low-level, widely supported modeling & rendering software package, available across all platform, It can be used in a range of graphics application, such as games. CAD design or modeling. open GL API is design mostly in hardware.

Features:-

1. Design
2. Associated libraries
3. Implementation
4. Development

Installation on Ubuntu:

Needed libraries:

1. Core open GL (GL):
2. Open GL utility (GLU):

③ open GL utilities Toolkit (GLUT)
④ open GL Extension Wrangler library (GLEW).

Prerequisite for open GL:
Since open GL is a graphics API and a platform of its own, it requires a language to operate in the language of choice is C++.

open GL order of operation:
- Construct shapes.
- Use open GL to
  ① Arrange shape in 3D
  ② Select your vantage point.
  ③ Calculate color & texture properties of each object.
  ④ Convert shapes into pixel on screen.

open GL syntax:-
- All function have the form: gl*
  e.g. glVertex 3f()-
  3- means, it takes 3 arguments.

- All variable have the form GL
  e.g. GLfloat
  GL int.

open GL primitives:.
Drawing two lines.
gL Begin (GL_LINES);
gL Vertex 3f (-1-,-); "start pt of line1

```
glvertex 3f (-,-,-); " end pt of line )
glvertex 3f (-,-,-); " start pt of line 2
glvertex 3f (-,-,-); " end pt of line 2.
gl. End;
```

Developer - Driven Advantages.

1. Industry standard
2. Stable
3. Reliable & portable
4. Evolving
5. Scalable
6. Easy to use
7. well-documented

Conclusion:-

In this way, we have studied and implemented open GL to make a scence of clocks with pendulum.