# CAD Modeller using WEB-GL


## Centre for Computational Technologies

Transforming human life by democratization of technology

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# 1 Introduction:

## 1.1 Purpose

The purpose of this document is to provide a comprehensive overview of the requirements for the development of a web-based CAD modeler application.

## 1.2 Scope

This application will allow users to create, edit, and manipulate 3D models in a web browser using WebGL technology. The front-end will be developed using React, while the back-end will be powered by Node.js.

# 2 System Overview:

The system will consist of the following main components:

- Web-App using react
- as frontend.
- Node.js for backend.
- Web-GL for rendering graphics .
- Rest API for API functionalities.

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# 3 Functional Requirements:

- Tools for creating 2D models.
- Support for basic shapes .
- Editing of models.

# 4 Tools:

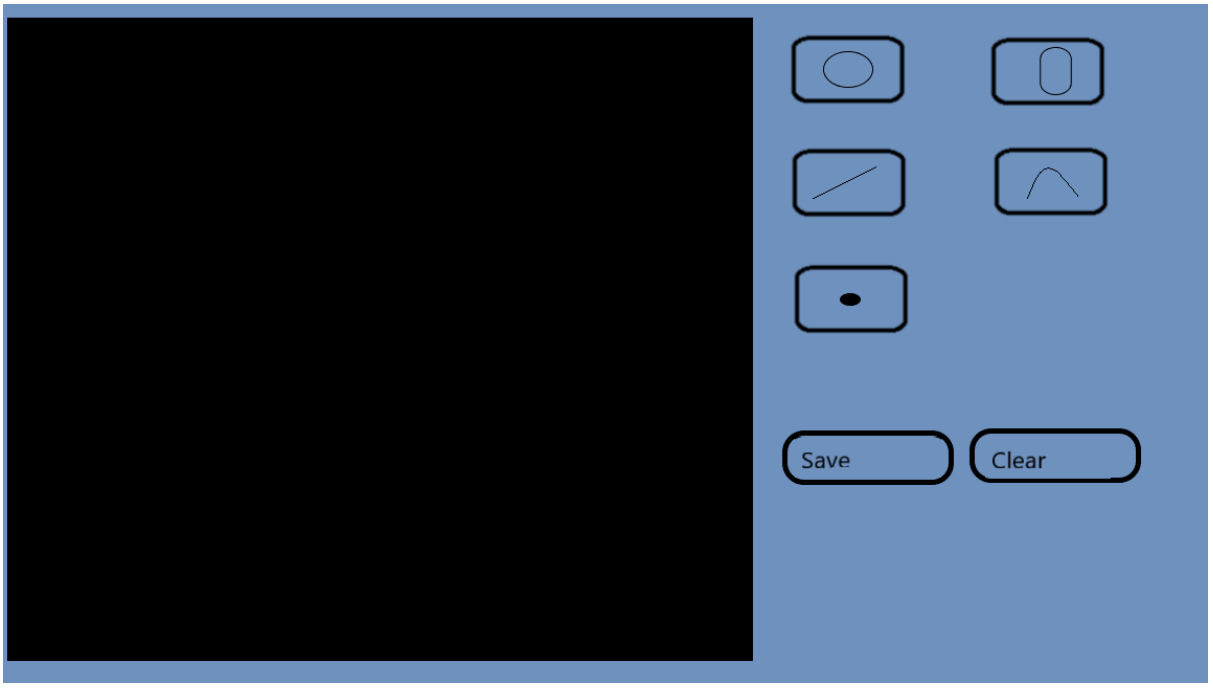
## 4.1 Front-end

- React for the front-end interface.
- WebGL for 3D rendering.

## 4.2 Back-end

- Node.js for the back-end infrastructure.
- Secure communication protocols for data transfer.

# 5 UI :




Shapes Button : This Button will help you to draw the desired shape.

Save : This Button will save the drawing on the screen.

Clear : This Button will clear the canvas .

## 5 Milestones and Timeline:

| Sr. No. | Milestones | Date and Time |
|---|---|---|
| 1. | SRS preparation | |
| 2. | SRS Presentation | |
| 3. | SRS approval | |
| 4. | GUI Design | |
| 5. | Polygon Clipping development | |
| 6. | Real-time rendering integration | |
| 7. | Testing & Debugging | |
| 8. | Finalization & Presentation | |

## 6 Conclusion:

In conclusion, the web-based CAD modeler will successfully achieve its objectives of democratizing 2-D design, providing real-time visualization through WebGL, and offering a user-friendly interface with React. By harnessing the capabilities of modern web technologies such as WebGL, React, and Node.js, this project aims to create a user-friendly platform that empowers designers, engineers, educators, and collaborative teams to create, edit, and collaborate on 3D models directly within a web browser.

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