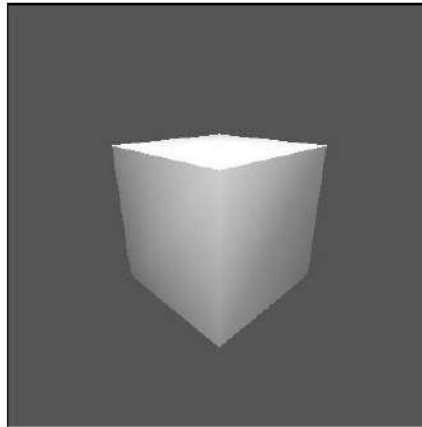Create a simple client-server web application (including front-end and back-end) which can display a simple 3D box in a 3D view.

The application should provide the following functionality:

1. This should be a single page application (SPA).
2. The user should enter parameters (box length, width and height) via client.
3. The client should communicate with the server and transfer the data to the server.
4. Triangulation of the box (i.e. a set of triangles to be used for display) must be computed on a server* and passed back to the client.
5. The client should display computed triangulation in a 3D view using WebGL (e.g. with the help of three.js library).

(*) For back-end implementation we recommend using node.js (although you may choose any other alternative). As an extra assignment, you might try to implement a small C/C++ library to compute triangulation on a server. This will give you extra advantage over other candidates.

Note:

To implement a 3D object in 3D view you will need triangulated representation (i.e. a 3D object is represented in the form of triangles). A box can be easily represented with 12 triangles (2 per each face – see image on the right). Coordinates of vertices of these triangles can be easily calculated using box length, width and height (e.g. {0,0,0}, {L,0,0}, {L,0,H}, …).