

# Orthonormal Basis Finder

[How To Use](#)

Number of Vectors

 0 

Size of Vectors

0

+

Vector Input

No input detected

**COMPUTE**

# USER GUIDE

## GROUP 8 – ORTHONORMAL BASIS FINDER

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## ACCESS THE WEBSITE.

The Orthonormal Basis Finder is deployed through Render and can be accessed through this link: <https://orthonormalbasisfinder.onrender.com/>

Please note that the website may take time to load because the website “sleeps” after 15 minutes of inactivity.

Once you have the website running in your browser, follow these steps to calculate your orthonormal basis. At the top of the page, you will also find a How To Use button. It’s a quick reference page for instructions.

01.

## ENTER THE NUMBER AND SIZE OF THE VECTORS.

Before entering your values, you need to define the dimensions of the linearly independent set using the two input fields at the top:

- Number of Vectors: Input how many vectors you are starting with.
- Size of Vectors: Input the dimension or size of the space.

These fields only accept integers. You can type the number directly or use the + and - buttons to adjust the count.

The screenshot shows the 'Orthonormal Basis Finder' interface. At the top, there are two input fields: 'Number of Vectors' (set to 3) and 'Size of Vectors' (set to 4). Below these, there is a section titled 'Vector Input' containing three columns labeled 'v1', 'v2', and 'v3'. Each column has four rows of input fields, all currently set to 0. A large pink 'COMPUTE' button is located at the bottom of the form.

02.

## ENTER THE VALUES.

Once the dimensions are set, a dynamic Matrix Grid will appear below. Each column represents one of your input vectors. You can enter floats, doubles, and fractions (with /) into the cells. Ensure all necessary cells are filled before proceeding.

The screenshot shows the 'Orthonormal Basis Finder' interface with the 'Number of Vectors' and 'Size of Vectors' inputs set to 3 and 4 respectively. The 'Vector Input' section now displays a 4x3 matrix grid. The first column ('v1') contains values 1, 2, -1, and 0. The second column ('v2') contains values 2, 2, 0, and 1. The third column ('v3') contains values 1, 1, 1, and 0. A 'Clear Inputs' button is visible above the matrix. A pink 'COMPUTE' button is at the bottom.

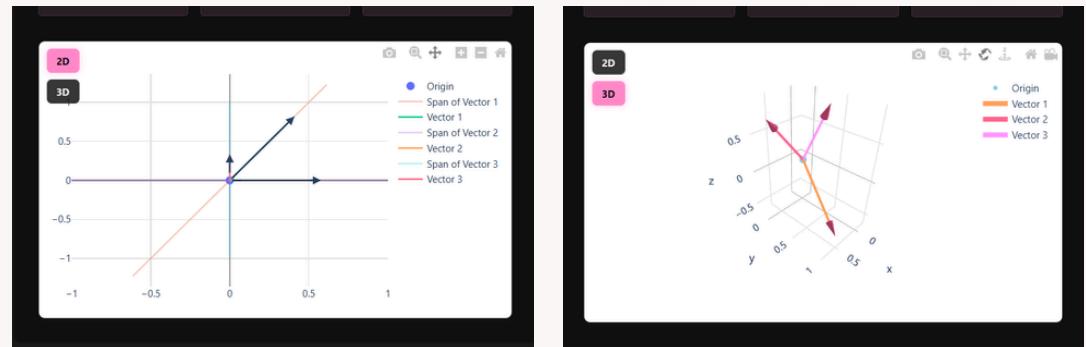
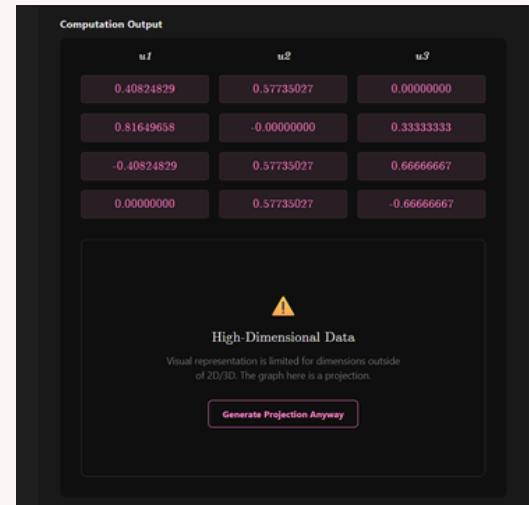
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03.

## CLICK COMPUTE.

Click the COMPUTE button. The website will process your input using the Gram-Schmidt process to generate the orthonormal basis from your input vectors (the result displayed clearly in a list and a visual interactive graph showing your new basis vectors in space. However, the graph only projects the vectors in 3-dimensional spaces and less.



## NOTE:

- Click *Clear Inputs* and/or refresh the website to delete the current set of input vectors.
- To ensure accuracy, the website will instantly notify you if your input cannot be orthonormalized (such as zero vectors, linearly dependent sets, or scalar inputs).
- The graph displayed after computation is interactive. Zoom in for a closer look, and click and drag to see the vectors from any angle.