

lintrans

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1 Analysis

One of the topics in the A Level Further Maths course is linear transformations, as represented by matrices. This is a topic all about how vectors move and get transformed in the plane. It's a topic that lends itself exceedingly well to visualization, but students often find it hard to visualize this themselves, and there is a considerable lack of good tools to provide visual intuition on the subject. There is the YouTube series *Essence of Linear Algebra* by 3blue1brown[1], which is very good, but I couldn't find any good interactive visualizations.

My solution is to develop a desktop application that will allow the user to define 2x2 matrices and view these matrices and compositions thereof as linear transformations of a 2D plane. This will give students a way to get to grips with linear transformations in a more hands-on way, and will give teachers the ability to easily and visually show concepts like determinants and invariant lines.

1.1 Computational Approach

Here's the section on computational approach and methods.

1.2 Stakeholders

Here's the section on stakeholders.

References

- [1] Grant Sanderson (3blue1brown). *Essence of Linear Algebra*. 6th Aug. 2016. URL: https://www.youtube.com/playlist?list=PLZHQObOWTQDPD3MizzM2xVFitgF8hE_ab.