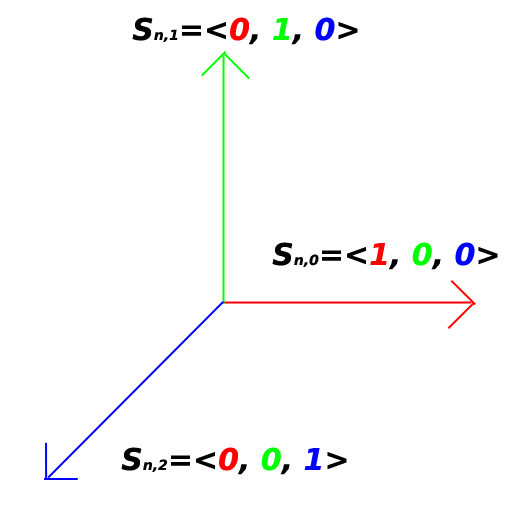
**MODEL TRANSFORMATIONS MATRICES FROM A LINEAR ALGEBRA STAND POINT**

**Vector spaces** are represented with a **set of basis vectors** and **matrices** are **vector sets**, so, we can use **matrices** for represent **vector spaces**. This way we can represent the following vector space using the matrix



Where

And

And in homogenous coordinates we have that

Thus we can say that matrix represent the standard basis in homogenous coordinates, and if we want represent column vector into the standard vector space we could simply say that is a transformation matrix

If we want transform our vector let’s say rotate it radians anti-clockwise along z axis we must define a new matrix that defines a new vector basis that is relative to the standard basis.

**POSSIBLE INTERPRETATIONS**

In the vector transformation

We can say that **c** is a vector identical to **x** but represented in a different vector basis (which is represented in the columns of matrix **A )**

We can say that **c** represents a vector rotated by radians anti-clockwise along z axis