> $with(LinearAlgebra):$

> $v\_1 := Vector([1, 1, 0])$

$$v\_1 := \begin{bmatrix} 1 \\ 1 \\ 0 \end{bmatrix} \tag{1}$$

> $v\_2 := Vector([0, 1, 1])$

$$v\_2 := \begin{bmatrix} 0 \\ 1 \\ 1 \end{bmatrix} \tag{2}$$

> $v\_3 := Vector([1, 0, 1])$

$$v\_3 := \begin{bmatrix} 1 \\ 0 \\ 1 \end{bmatrix} \tag{3}$$

> $u\_1 := \frac{v\_1}{Norm(v\_1, 2)}$

$$u\_1 := \begin{bmatrix} \frac{\sqrt{2}}{2} \\ \frac{\sqrt{2}}{2} \\ 0 \end{bmatrix} \tag{4}$$

> $u\_2 := \frac{(v\_2 - (u\_1 . v\_2) \cdot u\_1)}{Norm(v\_2 - (u\_1 . v\_2) \cdot u\_1, 2)}$

$$u\_2 := \begin{bmatrix} -\frac{\sqrt{6}}{6} \\ \frac{\sqrt{6}}{6} \\ \frac{\sqrt{6}}{3} \end{bmatrix} \tag{5}$$

> $u\_3 := (v\_3 - ((u\_2 . v\_3) * u\_2) - ((u\_1 . v\_3) * u\_1)) / Norm(v\_3 - ((u\_2 . v\_3) * u\_2) - ((u\_1 . v\_3) * u\_1), 2);$

(6)

$$u\_3 := \begin{bmatrix} \frac{\sqrt{3}}{3} \\ -\frac{\sqrt{3}}{3} \\ \frac{\sqrt{3}}{3} \end{bmatrix} \tag{6}$$

>