

We know that the cross product of two vectors is orthogonal to both. So we calculate

$$\begin{vmatrix} \mathbf{i} & \mathbf{j} & \mathbf{k} \\ 1 & 1 & 1 \\ 7 & 0 & 1 \end{vmatrix} = \begin{vmatrix} 1 & 1 \\ 0 & 1 \end{vmatrix} \mathbf{i} - \begin{vmatrix} 1 & 1 \\ 7 & 1 \end{vmatrix} \mathbf{j} + \begin{vmatrix} 1 & 1 \\ 7 & 0 \end{vmatrix} \mathbf{k} = \mathbf{i} + 6\mathbf{j} - 7\mathbf{k}$$

Thus, two unit vectors orthogonal to both are $\pm \frac{1}{\sqrt{86}} \langle 1, 6, -7 \rangle$, that is, $\left\langle \frac{1}{\sqrt{86}}, \frac{6}{\sqrt{86}}, -\frac{7}{\sqrt{86}} \right\rangle$ and $\left\langle -\frac{1}{\sqrt{86}}, -\frac{6}{\sqrt{86}}, \frac{7}{\sqrt{86}} \right\rangle$.