$\dim U = \dim W = 4$

Since $U + W \leq \mathbb{C}^6 \Rightarrow \dim(U+W) \leq \dim(\mathbb{C}^6) = 6$

$\dim(U+W) = \dim U + \dim W - \dim(U \cap W)$

$\Leftrightarrow \dim U + \dim W - \dim(U \cap W) \leq 6$

$\Leftrightarrow 8 - \dim(U \cap W) \leq 6$

$\Leftrightarrow \dim(U \cap W) \geq 2$

$\dim(U \cap W) \geq 2 \Rightarrow \exists$ at least two linearly independent vectors in $U \cap W$ (that form the basis).