$U = \{(x, x, y, y) \in F^4 : x, y \in F\}$

$W = ?$ s.t. $F^4 = U \oplus W$

Let $W = \{(0, a, 0, b) \in F^4 : x, y \in F\}$

Let any $(p, q, r, s) \in F^4$

$(p, q, r, s) = (p, p, r, r) + (0, q-p, 0, s-r) \in U + W$

Hence, $U + W = F^4$ (1)

Let arbitrary $(x, x, y, y) \in U$ and $(0, a, 0, b) \in W$.

$(x, x, y, y) = (0, a, 0, b) \iff \begin{cases} x = a = 0 \\ y = b = 0 \end{cases}$

$\Rightarrow U \cap W = \{0\}$ (2)

(1), (2) $\Rightarrow U \oplus W = F^4$.