Example Proof in Predicate Logic

CS 3234: Logic and Formal Systems

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Compare the following proof with its Coq counterpart:

1	$\exists y \forall x\ P(x,y)$	assumption	
2			x_0
3	$\forall x\ P(x,y_0)$	assumption	y_0
4	$P(x_0, y_0)$	$\forall$ e 3	
5	$\exists y\ P(x_0, y)$	$\exists$ i 4	
6	$\exists y\ P(x_0, y)$	$\exists$ e 1, 3–5	
7	$\forall x \exists y\ P(x,y)$	$\forall i$ 2–6	
8	$\exists y \forall x\ P(x,y) \rightarrow \forall x\ \exists y\ P(x,y)$	$\rightarrow$ i 1–7	