

For now we only aim at checking the correctness of the *JSON Prefs*
 entities are: user (singleton), the *JSONFile*, the checker

VARIABLE *entityState*

To be expressive:

$$XOR(a, b) \triangleq (a \vee b) \wedge (\neg a \vee \neg b)$$

$$SetOfEntityStates \triangleq [\\
 user : \{ \text{"working"}, \text{"done"} \}, \\
 prefs : \{ \text{"not checked"}, \text{"checked"} \} \times \{ \text{"compliant"}, \text{"not compliant"} \}, \\
 checker : \{ \text{"working"}, \text{"done"} \}]$$

$$InitCorrectness \triangleq \\
 \wedge \text{entityState} \in SetOfEntityStates$$

$$NextCorrectness \triangleq$$

checker is working:

checker simply achieves processing.

$$\wedge \text{entityState}.checker = \text{"working"} \\
 \wedge \text{entityState}' = [\text{entityState} \text{ EXCEPT } !.checker = \text{"done"}]$$

checker is done:

1. user is working: user achieves all current tasks

$$\vee \wedge \text{entityState}.user = \text{"working"} \\
 \wedge \text{entityState}.checker = \text{"done"} \\
 \wedge \text{entityState}' = [\text{entityState} \text{ EXCEPT } !.user = \text{"done"}]$$

checker is done:

2. user is done, checker is done: user goes back to work

$$\vee \wedge \text{entityState}.user = \text{"done"} \\
 \wedge \text{entityState}.checker = \text{"done"} \\
 \wedge \text{entityState}' = [\text{entityState} \text{ EXCEPT } !.user = \text{"working"}]$$

$$isDone \triangleq \wedge \text{entityState}.user = \text{"done"} \\
 \wedge \text{entityState}.checker = \text{"done"}$$