“Official” Rock-Scissors-Paper Rules
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In this document we define “official” (not actually official) rules for Rock-Scissor-Paper (RSP).
A round of RSP involves two players.

\[
\text{PLAYER} ::= \text{player1} \mid \text{player2}
\]

Each round, the players simultaneously choose one of three hand signs: rock, scissors or paper.

\[
\text{SIGN} ::= \text{rock} \mid \text{paper} \mid \text{scissors}
\]

If the players choose different signs, the winner is determined by a dominance relation: rock defeats scissors, scissors, scissors defeats paper, paper defeats rock.

\[
\text{defeats} : \text{SIGN} \rightarrow \text{SIGN} \\
\text{defeats} = \{ (\text{rock}, \text{scissors}), (\text{scissors}, \text{paper}), (\text{paper}, \text{rock}) \}
\]

If the players choose the same sign, the round results in a tie.

\[
\text{RESULT} ::= \text{tie} \mid \text{win1} \mid \text{win2}
\]

When the round is over, a result will have been determined.

\[
\text{Round} \\
\text{StartRound} \\
\text{result!} : \text{RESULT} \\
(\text{choice? player1 = choice? player2} \land \text{result! = tie}) \lor \\
((\text{choice? player1, choice? player2} \in \text{defeats} \land \text{result! = win1}) \lor \\
((\text{choice? player2, choice? player1} \in \text{defeats} \land \text{result! = win2})
\]