Temporal Logic

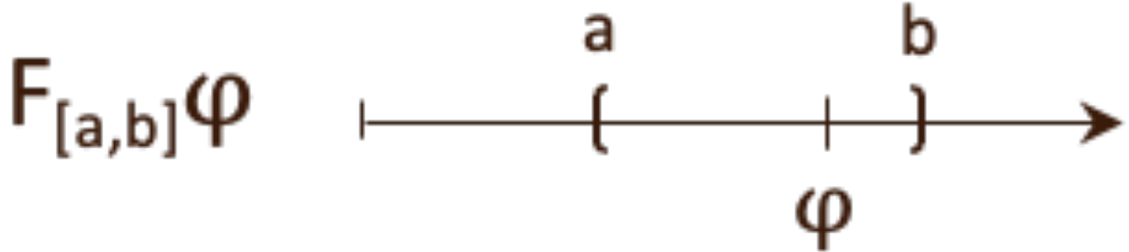
Predicates

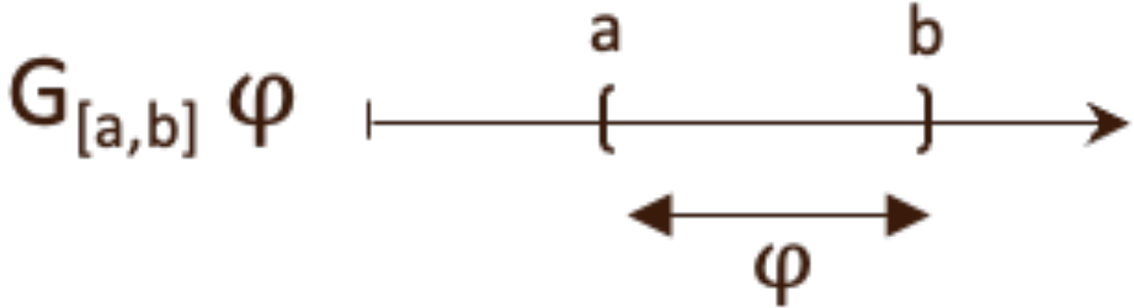
$$p > 20, q < 5.4$$

Boolean Operators

$\wedge$ (and) $\vee$ (or) $\neg$(neg) $\Longrightarrow$ (implies)

Timed Temporal Operators


$F_{[a,b]}\varphi$
a
b
φ


$G_{[a,b]}\ \varphi$
a
b
φ

Always, if obstacle is ***within 20 mm***, then, ***within two seconds***, turn left: $G(obs < 20 \implies F_{[0,2]}\ left)$

12

Signal Temporal Logic (STL)

Temporal Logic

Signal Temporal Logic (STL)

Predicates

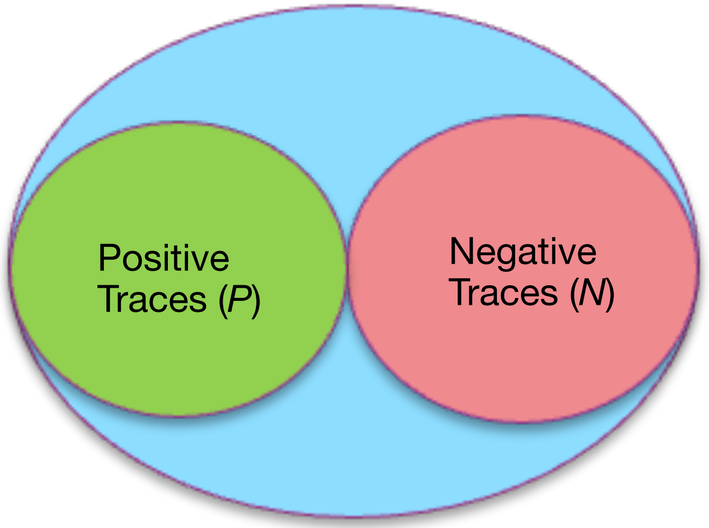
$p > 20,\ q < 5.4$

Boolean Operators

$\wedge$ (and) $\vee$ (or) $\neg$(neg) $\implies$ (implies)

Timed Temporal Operators

Always, if obstacle is ***within 20 mm***, then, ***within two seconds***, turn left: $G(obs < 20 \implies F_{[0,2]}\ left)$

Temporal Logic Inference

Sample $S = P \cup N$
(system executions)