

## **Linear-time temporal logic**

Linear-time temporal logic, or LTL for short, is a temporal logic, with connectives that allow us to refer to the future. It models time as a sequence of states, extending infinitely into the future. This sequence of states is sometimes called a computation path, or simply a path. In general, the future is not determined, so we consider several paths, representing different possible futures, any one of which might be the ‘actual’ path that is realised. We work with a fixed set *Atoms* of atomic formulas (such as  $p, q, r, \dots$ , or  $p_1, p_2, \dots$ ). These atoms stand for atomic facts which may hold of a system, like ‘Printer Q5 is busy,’ or ‘Process 3259 is suspended,’ or ‘The content of register R1 is the integer value 6.’ The choice of atomic descriptions obviously depends on our particular interest in a system at hand.