Exercises PV : CTL Model Checking

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1. Consider the following Kripke structure:

   ![Kripke Structure Image]

   (a) Do LTL model checking to verify the LTL property $\Box \Box p$.
   (b) Can the above property be expressed in CTL? How about in CTL*?
   (c) Do CTL model checking to verify $\text{EF}(p \land q)$.
   (d) Ok, now try these properties:
       - $\text{EF} \neg p$
       - $\text{AG} p$
       - $\text{E}[p \mathbf{U}(\text{AG} p)]$
       - $\text{A}[p \mathbf{U}(\text{AG} p)]$
       - $\text{AFAG} p$

2. Consider again the Kripke structure in No. 2.

   (a) How would you describe it if you are to express with a Boolean formula?
   (b) Do the model checking of the formula $\text{EF}(p \land q)$ on the symbolic representation of your Kripke.