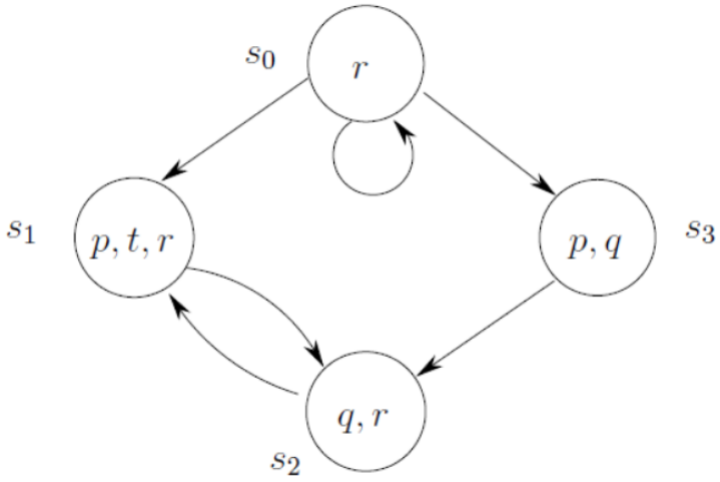
Assignment 8 Due Week 11 Live Session

M1:

1. Does the model M1 and s1 satisfy the following formulas?
    a. AG AF p
    b. AG EF p

M2:



2. Does the model M2 and s0 satisfy the following formulas?
    a. ! EG r
    b. AF q
    c. AG AF q
3. Prove or construct counterexamples for the following CTL formulas
    a. EG (p & q) → (EG p & EG q)
    b. EG (p | q) → (EG p | EG q)
4. Give a model and a world in which only one of the following two formulas is true while the other is false.

$$\Diamond(p \wedge q) \text{ and } \Diamond p \wedge \Diamond q$$

5. Find natural deduction proofs for the following sequent over the basic modal logic K.

$$\Diamond(p \rightarrow q) \vdash \Box p \rightarrow \Diamond q$$