

# Model Checking Homework 5

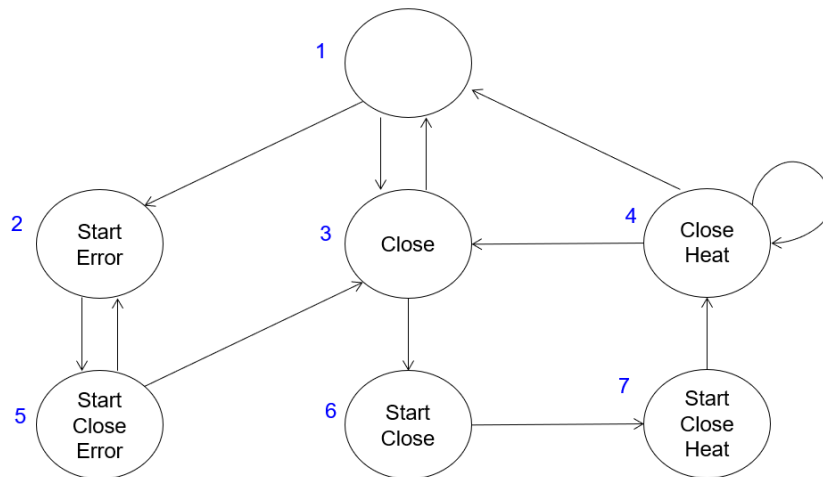
Deadline: 29 April 2025, 9:00 am  
Submit your solution through TeachCenter



## *The Microwave -Verification-Problem*

Use the algorithm for explicit state model checking of CTL, as discussed in the lecture, to determine whether the given Kripke structure  $M$  satisfies the two given CTL formulas  $f_1$  and  $f_2$ . That is, check for  $M \models f_1$  and  $M \models f_2$ .

Illustrate the execution of the algorithm by providing, for all subformulas, the set of states that satisfy the subformula.



**[50 Points]**  $f_1 = \neg EG(start \rightarrow EX(error))$

**[50 Points]**  $f_2 = EF(E(start U close) \wedge EG close)$