Formal Methods in Software Engineering

Assignment # 02

Q-no-1:

class FurnaceMonitor

types:

DayNumber	:	N
Temp	:	N
Emergency	:	B

Instance variables:

readings: map DayNumber to Temperature * Emergency;

Operations:

public **addReading**: DayNumber * Temperature * Emergency -> () addReading(day, temp, emg) == (readings := readings ++ {day |-> (temp, emg)})

public **wasEmergency**: DayNumber -> bool wasEmergency(day) == is_(day in set dom readings) and readings(day) = (temp, true)

public **getTemperatures**: () -> seq of Temperature getTemperatures() == [temp | day in set dom readings & readings(day) = (temp, true)]

public **numberOfEmergencies**: () -> nat numberOfEmergencies() == card {day | day in set dom readings & readings(day) = (temp, true)}