RBS

• Find all the rules which have the IF part satisfied
• Select one using conflict resolution
• Perform action and modify the Working memory
• Repeat until all the rules have been fired or the goal have been reached.
Example

- R1: If *hot and smoky* then add *fire*
- R2: If *alarm beeps* then add *smoky*
- R3: If *fire* then add *switch on the sprinklers*
- R4: If *dry* Then add *switch on humidifier*
- R5: If *sprinklers on* then Delete *dry*

- **Facts:** Alarm beeps, hot, dry
Rule firing

• R2 and R4 can be fired
  – If R2 fired then R1, R3, and R5 will follow
  – Dry will be deleted from WM

• If R4 is fired
  – R2 R1 R3 and R5 will be fired

• The rule firing is Aimless
Conflict resolution

- Fire rules for which facts have been recently added
- Fire rules with more specific condition and actions
- Prioritize rules
Backward chaining

• From the goal find the initial conditions that satisfy the goal.
• Goals are divided into subgoals and then further subgoals are found until the initial conditions are reached
Example

• R1: if smoky and hot then add fire
• R2: If alarm beeps then add smoky
• R3: if alarm beeps then add ear plugs
• R4: if fire then add switch on sprinklers
• R5: If smoky then add poor visibility

• Facts: Alarm beeps, hot
• Goal: Switch on sprinklers
Example

- IF (lecturing X) and (marking practicals X) Then Add (overworked X)
- If (month feb) then add (lecturing ali)
- If (month feb) Then add (marking practical ali)
- IF (overworked X) or (sleepless X) Then (bad mood X)
- If (bad mood X) then Delete (happy X)
- If (lecturing X) the Delete (researching X)
- IF (year 2004) then (economy bad)

Fact Set 1: (month feb), (happy ali), (researching ali)
Fact set 2: (month feb), (year 2004)
Goal: find whether Ali is in bad mood or not