

LAB - 08

## Forward chaining

- (i) As per law, it is a crime for an American to sell weapons to hostile nations. Country A, an enemy of America, has some missiles, and all missiles were sold to it by Robert, who is american citizen

PT:- "Robert is an criminal"

## Knowledge Base:-

$$(i) \text{American}(x) \wedge \text{Weapon}(y) \wedge \text{Enemy}(z) \wedge \text{Sells}(x, y, z) \Rightarrow \text{Criminal}(x)$$

America

$$(ii) \forall x, \text{Owns}(A, x) \wedge \text{Missile}(x)$$

$$(iii) \forall x, \text{Weapons}(x) \wedge \text{Owns}(A, x) \Rightarrow \text{Sells}(\text{Robert}, x, A)$$

All weapons of A sold by Robert.

$$(iv) \text{Missile}(z) \Rightarrow \text{Weapons}(z) \quad \text{Missiles are weapons}$$

$$(v) \text{Enemy}(A, \text{America}) \Rightarrow \text{True} \quad \text{A is enemy of America}$$

$$(vi) \text{American}(\text{Robert}) \quad \text{Robert is american}$$

Book(xy)

k(x)

$$\forall x \text{ American}(\text{Robert}) \wedge \text{Weapon}(x) \wedge \text{Enemy}(A, \text{America}) \wedge \text{Sells}(\text{Robert}, x, A) \Rightarrow \text{Criminal}(\text{Robert})$$

