ASSIGNMENT – 1

FSM
(Simple FSM + Factory Design with Randomness)

STATE TYPES
- *SOCIAL*
- *NON-SOCIAL*

STATES (With Actions)
- PATROL
    - o Patrols the waypoints in a loop
- SUSPICIOUS
    - o Time Taken to confirm there is a threat (To mimic the real world)
- INTERACT WITH NPC
    - o Any social interaction with other NPCs
    - o Can be predefined
    - o Checks in predefined if not found in vicinity
- INSPECT EQUIPMENT
    - o Checks equipment for maintenance
- REST
    - o To mimic rest behaviour of human
- HOWL
    - o To alert other NPCs of threat of Point of Interest in vicinity (Like shout)
- ALERT
    - o Know that there is threat
- SEARCH
    - o Looks for last known position of player
- ESCAPE
    - o Runs away from player if weaker
- WAIT
    - o Waits for some time after running away from player
- CHASE
    - o Chases the player when in sight and out of attack range if stronger
- ATTACK
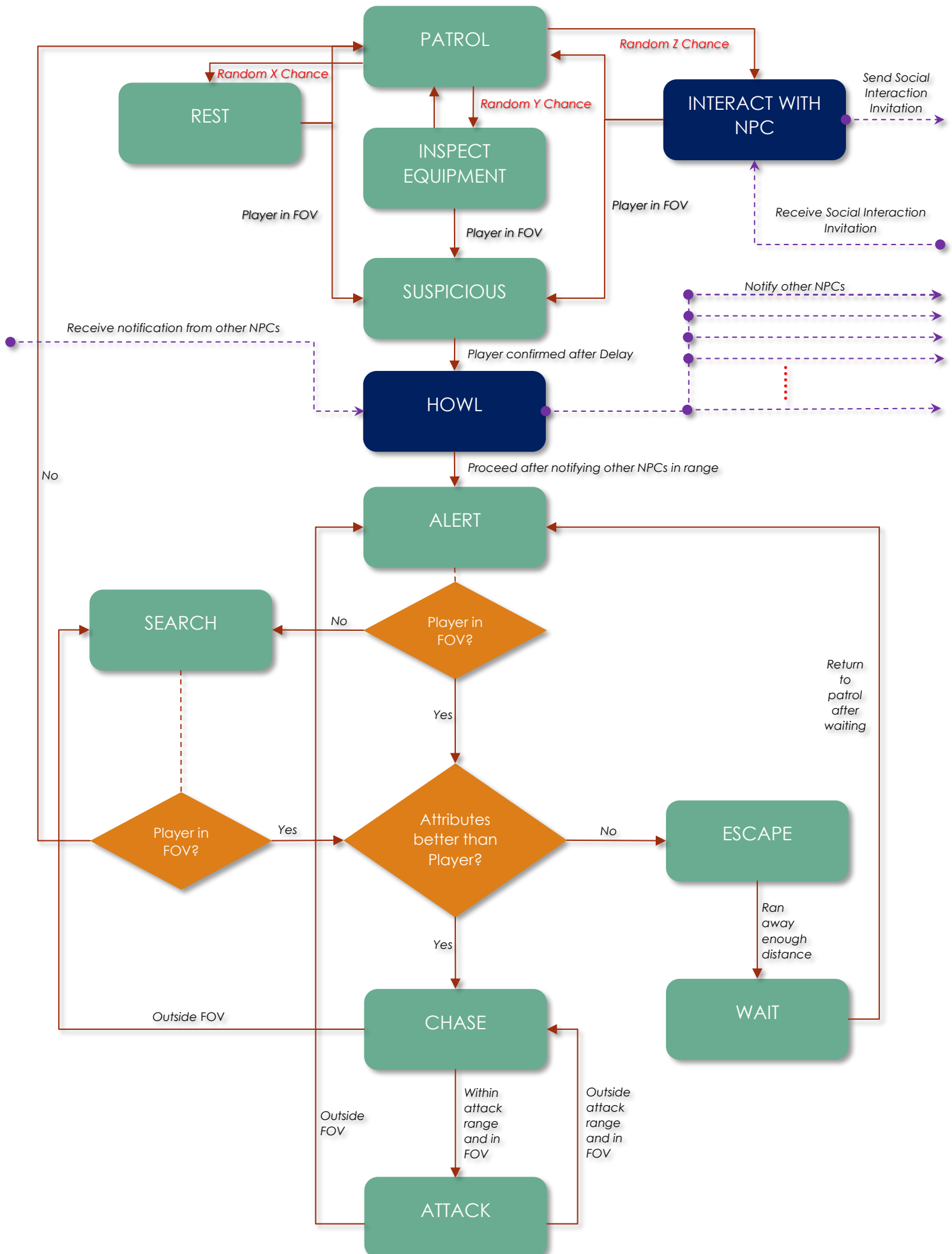   - o Attacks the player when in sight and in attack range if stronger

Fig - 1.1: Diagram depicting the States in State Machine

FROM (CURRENT STATE)	(UNDER) CONDITION	TO STATE
PATROL	Random X Chance	REST
PATROL	Random Y Chance	INTERACT WITH NPC
PATROL	Random Z Chance	INSPECT EQUIPMENT
PATROL	In FOV before Confirmation	SUSPICIOUS
REST	Rest Timer	PATROL
REST	In FOV before Confirmation	SUSPICIOUS
INTERACT WITH NPC	Interaction Timer	PATROL
INTERACT WITH NPC	In FOV before Confirmation	SUSPICIOUS
INTERACT WITH NPC	On Notify	INTERACT WITH NPC
INSPECT EQUIPMENT	Inspect Timer	PATROL
INSPECT EQUIPMENT	In FOV before Confirmation	SUSPICIOUS
SUSPICIOUS	In FOV and Confirmed	HOWL
HOWL	In FOV and Confirmed	ALERT
ALERT	In FOV and Confirmed and Vanished	SEARCH
ATTACK	In FOV and Confirmed	CHASE
CHASE	Not in FOV and Confirmed and Vanished	SEARCH
CHASE	In FOV and Confirmed and in Attack Range	ATTACK
ATTACK	In FOV and Confirmed and not in Attack Range	CHASE
ESCAPE	Not in FOV and Confirmed and out in range	WAIT
WAIT	In FOV and Confirmed	ALERT

Fig - 2.1: Table depicting the States in State Machine and transitions

GIZMOS in Scene (Draw Spheres):

- YELLOW: View Distance
- RED: Attack Radius
- GREEN: Escape Distance
- CYAN: Howl Radius for Coward Enemy
- MAGENTA: Howl Radius for Aggressive Enemy