Assignment 3

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Design the following Intelligent Systems using PEAS:-

Automated Taxi Driver :-

Performance Measure: Safety, Time taken for the drive, Comfort, Profit Maximization
Environment: Roads, Pedestrians, Traffic Signals, Customers, Traffic Police
Actuators: Steering Wheel, Gearbox, Brakes, Clutch, Accelerator,horn(Optional: Sidelights, front lights, wiper, in-car lighting)
Sensors: Camera, Proximity Sensor, SONAR system, Odometer, GPS, Engine Sensors

Vacuum Cleaner Agent :-

Performance Measure: Electricity consumption minimization, Time minimization, Dirt capture maximization, Precision
Environment: Dirty and clean floors, static environment
Actuators: Move left, move right, suck dust, no operation
Sensors: Dirt sensor, Bag capacity sensor, Bump sensor

Music Composer :-

Performance Measure: Number of measures composed per unit time, Number of instruments, Range of frequencies used, Melody and harmony, Pitch, Bass
Environment: Software environment with all preconfigured sound requirements.
Actuators: None
Sensors: Basic code that captures sound configurations in software

Aircraft Autoloader :-

Performance Measure: Minimum damage to the plane and ground structures, Minimum casualties, Time efficiency, Fuel economy, Cargo must remain intact
Environment: Ground, Runway, Airplane hanger
Actuators: Throttle, Flaps, Landing gear, Rudders
Sensors: Camera, Proximity sensor, Speedometer

Essay Evaluator :-

Performance Measure: Maximize score for quality, Minimize score for redundancy, unacceptable language, Plagiarism detection
Environment: Software based program
Actuators: None
Sensors: File reading software or Camera along with OCR Software

Robotic Sentry Gun for Keck Lab :-

Performance Measure: Maximize True Positive hits, Minimize false positives or hitting neutrals and friends, Power efficiency Maximization
Environment: Keck lab
Actuators: Gun, Trigger, Motors, Relays
Sensors: Camera, Proximity sensor, Bump sensor

Medical Diagnosis System :-

Performance Measure: Minimize False Positives, Minimize Cost, Maximize True Positives, Minimize Diagnosis Time
Environment: Patient, Hospital staff
Actuators: Display questions, Tests, Diagnosis Tests, Diagnosis Results, Treatment, Referrals
Sensors: Patient’s Input for questions