Name _____

Case Study Deconstruction - Perception, Reasoning, Action Answer Key

Case Study 1 - Shopping Recommendation Bot

Perception: The system collects data such as searches, clicks, and time spent on product pages.

Reasoning: It compares this behavior to patterns from other shoppers and predicts what products you might want next.

Action: It displays a "You might also like..." row under your cart and sends an email with recommendations.

Case Study 2 - Smart Traffic Signal

Perception: Cameras and road sensors count cars, measure traffic queues, and detect unusual events like a stalled car.

Reasoning: The controller weighs current traffic flow against the timing plan and decides how to adjust the signals.

Action: It changes the light cycle-clearing the busiest lane first and delaying the walk signal by 10 seconds.

Case Study 3 - Robot Vacuum

Perception: Sensors and a camera detect walls, furniture, and crumbs, plus the battery level.

Reasoning: The vacuum decides which areas are already cleaned, chooses a spiral pattern for the crumbs, and increases suction.

Action: It cleans the dirty spot with stronger suction, then drives back to the charging dock at 15% battery.