

Tutorial - 2

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1. What do you mean by Mundane, Expert, Formal tasks in AI. Classify following AI applications as Mundane, Expert, Formal task along with justification.

A. Helpdesk assistance for mobile company

B. Disease Predictor

C. Flow chart generator of a C program.

- - Mundane tasks refer to tasks that are routine and can be easily performed by a machine with little human supervision such as data entry, customer service task, speech recognition, etc. Common sense, reasoning and planning are common characteristics of these tasks.
- Expert tasks refer to tasks that require specialized knowledge or training and also requires high analytical and thinking skills such as medical diagnosis, legal advice, etc.
- Formal tasks refer to tasks that involve formal reasoning or logical deduction such as theorem proving or program verification.
- A. Mundane task as task is to answer common questions of the customers.
- B. Expert task as task is to predict the diseases by analyzing the patient's medical history, symptoms and other data.
- C. Formal task as task is to automatically generate a flowchart from a C program by analyzing the control flow and logical structure of the code.

2. Define PEAS (Performance, Environment, Actuators, Sensors) for following:

a) Self driven car

b) Number plate detection system.

→ a) Self driven car:

- Performance: Navigating to a specified destination without collision or traffic violations, comfortable trip, accuracy in detection, fast, mileage, etc.
- Environment: Roads, static and dynamic objects on road, Traffic signals, Road signs, ~~etc~~ whether, etc.
- Actuators: steering, accelerator, brake, horn, headlights, wipers, defogger, airbags, etc.
- Sensors: Camera, RADAR, LIDAR, ultrasonic sensor, lane assistance technology, GPS, speedometer, engine-sensors, keyboard, etc.

b) Number plate detection system:

- Performance: Accuracy in extracting text from number plate and recognizing it, Quality of captured image, Recognizing in less time.
- Environment: Different angle and ~~over~~ orientation of plate on vehicles, objects other than vehicles, etc.
- Actuators: Recognizer, Image scanner, System to capture and render image to find corresponding character, etc.
- Sensors: Camera, ultrasonic sensors, etc.