

Batch: B-1

Experiment Number: 1

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Aim of the Experiment: To comprehend Case Study for AI application for PEAS and Task Environments

Program/ Steps:

1. For this experiment students have to individually select a topic on any developed AI Agent/application (ex. Apple Siri, a Virtual assistant). Get the topic approved from the batch in-charge.
 2. Analyze application/agent from artificial intelligence point of view and give description and features for the same.
 3. Compare the features of selected AI with other existing AI agents (Google Assistant, Samsung Bixby) in terms of few performance metrics.
 4. Give its PEAS representation in table format
 5. Identify the type of AI agent and type of Environment for chosen application/AI agent.
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Output/Result:

“Remote Patient Monitoring System”

AI Application/Agent Description and Features:

Description:

The Remote Patient Monitoring System utilizes artificial intelligence to collect and analyze patient data remotely, enabling healthcare professionals to monitor and manage patients' health conditions without physical presence.

Features:

- Real-time Data Collection: Gathers vital signs and health-related data from patients.
- Predictive Analytics: Utilizes AI algorithms to predict potential health issues based on collected data.
- Anomaly Detection: Identifies deviations from normal health parameters.
- Alerts and Notifications: Sends alerts to healthcare providers in case of critical situations.
- Adaptive Learning: Improves predictions and insights over time based on continuous data analysis.

- **Integration with Wearables:** Connects with wearable devices to enhance data accuracy.
- **Data Security:** Implements robust security measures to protect patient information.
- **Patient Engagement:** Facilitates communication between patients and healthcare providers.
- **Remote Consultation:** Enables virtual consultations based on monitored data.

3. Comparison with Other AI Agents:

Performance Metrics	Remote Patient Monitoring AI	IBM Watson Health	Google Health AI	Microsoft Healthcare Bot
Accuracy of Predictions	High	High	Moderate	Moderate
Real-time Monitoring	Yes	Yes	Yes	Yes
Anomaly Detection	Effective	Effective	Moderate	Effective
Adaptive Learning	Yes	Yes	Yes	Yes
Integration with Wearables	Seamless	Yes	Yes	Yes
Data Security	Robust	High	High	High

Patient Engagement	High	High	High	High
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4. PEAS Representation:

PEAS Components	Description
Performance Measure	Accuracy of predictions, response time
Environment	Healthcare settings, patient homes
Actuators	Alerts, notifications, virtual consultation
Sensors	Wearable devices, health monitoring equipment

5. Type of AI Agent and Environment:

Type of AI Agent: Reactive/Learning AI with learning capabilities (learns and adapts from continuous data).

Type of Environment: Dynamic environment with real-time data changes, integration with wearables, and various patient conditions.

Outcomes: Understand structure, types and PEAS parameters of an AI (Artificial Intelligence) agent and formalize the problem.

Conclusion (Based on the Results and outcomes achieved):

The experiment successfully achieved its aim of comprehending a case study for AI application using the PEAS framework and understanding the Task Environment. The insights gained contribute to a broader understanding of how AI is applied in healthcare, providing remote monitoring solutions that can significantly impact patient outcomes and healthcare delivery.

References:

1. Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach, Second Edition, Pearson Publication
2. Elaine Rich, Kevin Knight, Artificial Intelligence, Tata McGraw Hill, 1999.