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Homework - 1 on AI and Agents

Q1. a) A dog is more intelligent than a worm
-> Dogs can solve problems that worms cannot, such as finding food or avoiding danger
-> Dogs can learn new things more easily than worms
-> Dogs can communicate with each other in ways that worms cannot

b) A human is more intelligent than a dog
-> Humans can think abstractly and solve the problems that dogs cannot and humans have advanced cognitive functions like reasoning and creativity
-> Humans have complex languages and communication systems both verbal and non-verbal
-> Humans can create and use tools, which give them a greater ability to manipulate their environment. Dogs lack the capacity to invent, innovate or contribute to the advancement of knowledge and technology in the same way technology can

c) An organization is more intelligent than an individual human
-> An organization can pool the knowledge and skills of many individuals which gives it a greater ability to solve problems
-> An organization can make decisions more quickly and efficiently than an individual human

-> organization benefit from diverse teams and viewpoints which can lead to more creative and innovative solutions different individuals bring unique experiences and insights contributing to a richer decision-making process

Definition of "more intelligent"

-> Being more intelligent means having a greater capacity for problem solving, learning, adaptability and effective decision making compared to another entity. It encompasses cognitive abilities, creativity and the ability to utilize collective knowledge for better outcomes

Q2:- Application:- Samsung Bixby

a) what does the application actually do?

-> Samsung Bixby is a voice-activated AI personal assistant designed to provide intelligent help and enhance the user experience across Samsung devices, such as smartphones tablets, smart TVs, and smart home appliances. Bixby can perform various tasks, including setting reminders sending messages, making calls, managing calender events, controlling smart home devices, providing weather updates, Playing music and answering questions

A key feature of Bixby is "Bixby Routines" which automates tasks based on user behavior and preferences. with Bixby Routines user can create customs automations that trigger specific actions under certain conditions such as turning on wi-fi when arriving at home or reducing screen brightness at night

b) How well does it perform?

-> Bixby performs well in executing voice commands and automating routines across Samsung devices while it handles straight forward tasks effectively, more complex requests may not be as accurately executed as a human. Bixby routines, in particular excel in automating daily tasks and providing a seamless under user experience by predicting and adapting to the user's habits. Compared to humans, Bixby is efficient in automating repetitive tasks and multitasking, although its understanding of nuanced language is limited. Developers assess its performance using user feedback, machine learning algorithms and natural language processing improvements performance like user engagement rates, routine activation rates and error rates are analysed to refine its functionality.

c) is it experimental system or a fielded system?

-> Bixby is a fielded system with millions of users worldwide, as it comes pre-installed on Samsung devices. It is designed for everyday use, making it accessible to a broad audience, including users with minimal technical knowledge. Bixby routines are also widely used by samsung devices owners to automate daily tasks and enhance productivity. As a mature, fully operational AI assistant, Bixby is not an experimental systems but a widely adopted tool for general consumer use.

d) Why is it intelligent?

-> Bixby is considered intelligent due to its ability to understand context, learn from user interactions, and adapt its responses based on user preferences. Bixby routines add another layer of intelligence by leveraging AI to learn user behaviours and suggest automation for frequently performed tasks. The system's capacity to automate tasks, recognize patterns, and adjust to changing contexts demonstrate its intelligence. Its use of machine learning, NLP, and computer vision to interpret voice commands, recognize objects and customize user experiences exemplifies its capabilities as an intelligent assistant.

e) Programming Language and user interface

-> Bixby is developed using various programming languages, including Java, Python, and Kotlin, within Android development environments. The AI aspects, such as machine learning models and NLP, are likely implemented using Python which is commonly used in AI community. Bixby has a voice based user interface that enables users to interact through spoken commands and a GUI on Samsung devices for visual feedback and further interactions. Bixby routines are managed through a dedicated interface within the device settings, allowing users to create and customize automation easily.

f) References:

1. Samsung Bixby Page
2) Samsung community forums and user Guides