

**BAHIR DAR UNIVERSITY
INSTITUTE OF TECHNOLOGY
SCHOOL OF COMPUTING AND ELECTRICAL ENGINEERING
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

ARTIFICIAL INTELLEGENCE

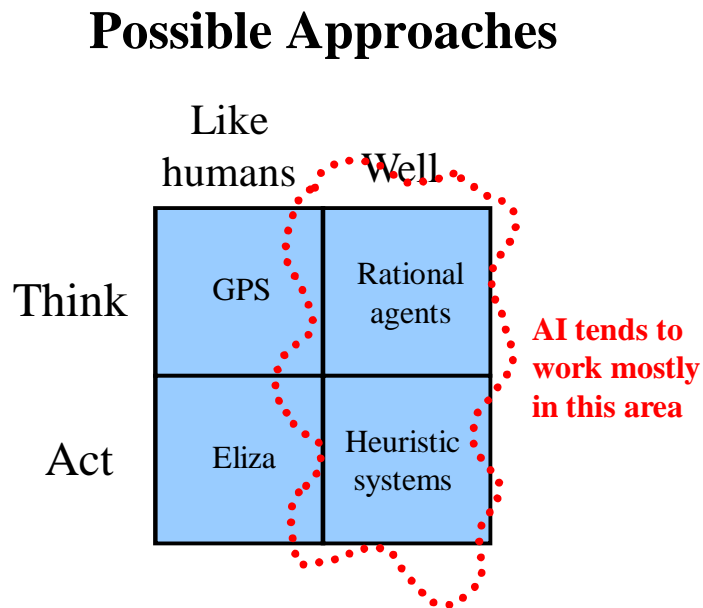
ASSIGNMENTS_2

SUBMITTED BY:-BEKELE HAILE

ID NO. :- ENG/R/069/2000E.C.

Answer for assignments_ 2

Q.As show in the figure above, AI mostly studies designing agents which simulates the characteristics of humans that exhibit the areas marked with red dots. Write your justification why it is so? What are the critical factors that AI studies tilted towards to it as compared to the perspectives of “thinking like humans” and “acting like humans”.



Justification

Acting rationally rational behavior, doing the right thing, the right thing: that which is expected to maximize goal achievement, given the available information. Doesn't necessarily involve thinking|e.g. blinking reflex, but thinking should be in the service of rational action. So,

- Since system said to be rational if it thinks/does the right thing through correct reasoning.
- Rational action requires the ability to represent knowledge and reason with it so as to reach good decision.
- As we know AI is the study of mental faculties through the use of computational models.
- Provided the correct arguments/ thought structures intelligence machine must provide the correct answer unless the inputs are invalid or wrong. Rational action requires the ability to represent knowledge and reason with it so as to reach good decision. Learning for better understanding of how the world works
- The study of AI as rational agent design therefore has two advantages.
 - ✓ First, it is more general than the "laws of thought" approach, because correct inference is only a useful mechanism for achieving rationality, and not a necessary one.
 - ✓ Second, it is more amenable to scientific development than approaches based on human behavior or human thought, because the standard of rationality is clearly defined and completely general. Human behavior, on the other hand, is

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well-adapted for one specific environment and is the product, in part, of a complicated and largely unknown evolutionary process that still may be far from achieving perfection.

- So AI must focus or tends to work on making the machines rational agents for achieving the desired goal. And,

Heuristic refers to experience-based techniques for problem solving, learning, and discovery. Heuristic methods are used to speed up the process of finding a satisfactory solution, where an exhaustive search is impractical. Examples of this method include using a "rule of thumb", an educated guess, an intuitive judgment, or common sense.

In more precise terms, heuristics are strategies using readily accessible, though loosely applicable, information to control problem solving in machine.