

## 2.2.3 FINAL JEOPARDY

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The idea of a machine that could think like a human has fascinated us for generations, and has inspired many science fiction stories. With the exponential increase in the power of computers and the growth of the Internet, many now believe that the basic goals of artificial intelligence may be achieved in the near future. While IBM's Deep Blue computer program defeated Grand Master Gary Kasparov in 1997, the system was totally useless for anything but chess. IBM's *Watson* program was built using insights from the Deep Blue development team and soon demonstrated its unique abilities by competing against humans in a special *Jeopardy* championship.

The idea of testing a powerful, custom-made computer against the knowledge capacities of human mind initially seemed farfetched to engineers and scientists at IBM Research. This selection describes the process by which the IBM team approached the seemingly impossible task of producing a machine that could "understand" the complexities of natural language, in the form of *Jeopardy* trivia questions. In addition to being equipped with the computing power of 2,208 processors and 200 million pages of information, Watson had to be taught logic and strategy that would enable it to interpret an array of complicated trivia questions and select the correct answer from among the answers. The culmination of the IBM team's efforts came in 2011, when Watson defeated the two top *Jeopardy* champions in a specially designed tournament.

Although the IBM scientists who worked on the Watson project doubtlessly found the work intellectually stimulating, it is also likely that IBM saw the possibility of applying Watson's technological advances in commercial applications. Watson is likely to be a harbinger of a new era in which machine or artificial intelligence will become increasingly prevalent in daily life.

### FOCUS QUESTIONS

1. What are some possible applications of the computational abilities demonstrated by Watson, which might prove to be marketable in the future? How might Watson's unique skills be an advantage or disadvantage?
2. Although the term *artificial intelligence* is used in this selection, explain whether and why you think it is appropriate or inappropriate to refer to Watson as *intelligent*.
3. In what ways was the process used by Watson in answering *Jeopardy* questions similar to the functioning of a human mind, and how was it different?
4. Do you believe that Watson portends future computers or other machines that will eventually compete with and challenge humans? Why or why not?

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