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1 Section 1.1

1.1 What is AI

1.1.1 Turning Test

For a robot/computer to be consider intelligent, it needs to pass the Turing test. * **natural language processing** to enable it to communicate successfully in English * **knowledge representation** to store what it knows or hears; * **automated reasoning** to use the stored information to answer questions and to draw new conclusions; * **Machine Learning** to adapt to new circumstances and to detect and extrapolate patterns

To pass the test there are some things the robot would need * **computer vision** to perceive objects, and * **robotics** to manipulate objects and move about

1.2 Types of Thinking.

1.2.1 Thinking Humanly

We first would need to know how the brain works in order to recreate it. This is what cognitive science is doing and there is a lot of information on it.

1.2.2 Thinking Rationally

To get to an answer with a complete thought process.

Logicians created a system and language to do so, but humans are not only rational. If robots would act completely rational it would not pass as a human. People make mistake. Also not all problems can be broken down into a logical process. There are questions without strict answers.

1.2.3 Acting rationally

A **rational agent** is one that acts so as to achieve the best outcome or, when there is uncertainty, the best expected outcome.

This allows it to react and change to the environment.

There are also ways of acting rationally that cannot be said to involve inference. For example, recoiling from a hot stove is a reflex action that is usually more successful than a slower action taken after careful deliberation.