4. Read about Lisp, 2.4.2 as well as check other online material if you want. Why is Lisp so popular with AI folk? Write your answer in no more than 2 pages.

Interest in AI grew from linguistics, psychology, and mathematics in the mid 1950s. All of these fields agreed that there needed to be something developed to allow computers to process symbolic data in linked lists. The concept of list processing was developed first at the RAND corporation in a classic paper that describes one of the first AI programs. The language used was ILP-I, Information Processing Language, but it was never implemented. The next version of that language was implemented on a RAND computer. Because the versions of ILP were low level assembly languages they were never really used in a widespread capacity. This was actually for a hypothetical computer implemented with an interpreter where list processing instructions were included. Although they were not commonly used, this language was useful for list processing and made contributions to computer science in that way. As IBM was developing list processors they added it to their FORTRAN language known as FLPL.

AI needs language requirements, flow methods for mathematical functions,and recursive and conditional statements. The only high level language at the time was FORTRAN 1. Another necessity was differentiation between linked lists and deallocation for abandoned lists. Because none of the coding languages at the time and discussed above supported all of these things, and MIT researcher John McCarthy knew a new language was needed. He started the new language at MIT to process lists called Lisp.

The reason Lisp was so popular with AI researchers is because of its ability to compute symbols. Pure Lisp has only two different kinds of data structures, atoms and lists. Atoms are used to represent symbols, or numeric literals. This language included insertions and deletions at any point, and operations necessary for list processing.

Lisp was designed as a functional programming language. All of the work done in this language was done by applying functions to arguments. Another plus was that repetitive processes can be specified with recursion.

Another reason Lisp was so popular is because languages like Java and C++ mix algebra and English, while Lisp was very simple. The code and the data had exactly the same form.

Lisp was so popular with AI people for a quarter of a century. Lisp had eliminated most of its issues and was running faster than an interpreted language on a computer. It also pioneered functional programming.

Common Lisp is a descendant of Lisp, with many of the same features but made more industrialized as a larger coding language. When googling Lisp, I found that common Lisp is still used in AI today. Some even call it “God’s own language”. Which is crazy. When googling we find out that John McCarthy really pioneered AI through his development of Lisp, the best function was the parenthesis. Lisp was simple, it worked beautifully for all of the list processing, stacking, variables, and conditionals AI still uses it today. It WAS so popular because it was not only the best for AI, but it was made with AI in mind, and there wasn't any language good enough for all of the things AI needed to do (listed in first paragraph). Now that many languages have been developed, there is no perfect language for AI, but common Lisp is still used today, commonly.