

CSI 3120 Assignment 1 Question 3

Student Name: Matt Langlois

Student Number: 7731813

Student Email: mlang025@uottawa.ca

When lisp was created the following languages existed:

- Fortran 1 – Fortran was a basic programming language that would be programmed on punch cards. It had only 32 statements and can be considered the pioneer of all languages. It was the first high level language created.
- Flow-Matic – Was the first language used for data processing. It was created in 1955 and strongly influenced the creation of COBOL.

When prolog was created the following main languages existed (in addition to lisp, fortran [now version 4] and flow-matic):

- Pascal – Pascal was designed with structured programming and data structures in mind. It is an imperative language which has its roots in ALGOL 60.
- C – Was designed as a low level programming language for operating systems. It was closely tied in with the development of unix.
- BASIC – Was designed to be a simple, high level, programming language that was designed to encourage people from all fields to use computers. The language itself was based on Fortran 2 implementing easy to use statements.

a) Why did researchers decide to create the “odd” languages known as lisp and prolog?

- Lisp: When lisp was created it was heavily influenced by lambda calculus to form a mathematical notation for computer programs. Lisp actually stands for list processor which is why everything is defined as a list in the language. Lisp’s ultimate goal was evolving AI and help solve complex and challenging problems using a notation that researchers were familiar with.
- Prolog: Researchers decided to create prolog as a logic programming language used to prove complex mathematical theorems. Prolog actually stands for “Programming en Logique” which is why it is a logic based programming language. Prolog was mainly created for natural language processing through its use of databases however it has grown to many other applications.

b) How did lisp and prolog influence 2 modern day languages

- Prolog: According to the lecture slides Prolog didn’t really influence any other languages (as seen in lecture 4 slide 1). Prolog is more of a one of a kind language with minor variations such as swi-prolog or gnu-prolog and still remains actively used today in things such as IBM’s Watson.

- Lisp: However, Lisp has influenced 2 modern day dialects of lisp. The first dialect is known as common-lisp and the second is known as scheme. Common lisp was created to be a general purpose language meant for industrial use. It is the most actively used and developed dialect of lisp. Scheme is the other dialect of lisp and was mainly created to be used in education as an introduction to functional programming language.