PPL Lab Assignment 6

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- Problem Statement : Execution of Basic Lisp Commands.

- FAQs:

1. Explain what is LISP? Give an example of some of the popular applications built in LISP?

> Lisp is a family of programming languages with a long history and a distinctive, fully parenthesized prefix notation. Lisp is the second-oldest high-level programming language in widespread use today.

   Popular applications built in Lisp are Emacs, G2, AutoCad, Igor Engraver, Yahoo Store etc.

2. Explain what is a predicate in LISP?

> A predicate is a function that tests for some condition involving its arguments and returns nil if the condition is false, or some non-nil value if the condition is true.

3. How data types are categorized in LISP?

> LISP data types can be categorized as.

- Scalar types – for example, number types, characters, symbols etc.

- Data structures – for example, lists, vectors, bit-vectors, and strings.

4. What is the programming structure for LISP?

> LISP expressions are called symbolic expressions or s-expressions. The s-expressions are composed of three valid objects, atoms, lists and strings.

Any s-expression is a valid program.

LISP programs run either on an interpreter or as compiled code.

The interpreter checks the source code in a repeated loop, which is also called the read-evaluate-print loop (REPL). It reads the program code, evaluates it, and prints the values returned by the program.

5. What is meant by symbolic expression in LISP?

> LISP expressions are called symbolic expressions or s-expressions.

6. Compare Lisp with Haskell programming language.

> Haskell is purely functional, whereas (Common) Lisp is very much the epitome of unopinionated multi-paradigm languages. That difference is a little less pronounced when you consider lisps like Clojure, which are not purely functional, but are strongly opinionated about being functional.

• Conclusion : We have studied and executed basic lisp commands.

• Practice Assignments :

1. Write a program that prints 'Hello World' to the screen.

2. Write a lisp function to perform addition of two numbers.

3. Write a lisp function to calculate the cube of number.

4. Write a lisp function to which returns maximum of three numbers.