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Languages and Data Structures

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Languages and Data Structures Project

Through this project, I have deepened my understanding of the nature of languages in terms of creation and analysis, as well as gained valuable insights into the fundamentals of data structures and their relevance to programming. My journey began with the fourth dialogue between Hylas and Philonous, a philosophical discourse that challenges the notion of physical objects and their relationship to perception. This was a natural precursor to my exploration of formal systems, where I delved into the fascinating world of language structures and their modification in works such as "Godel, Escher, Bach".

As I progressed, I put my learning into practice by writing code in Python. Initially, I created a simple program that generated a language with three characters, which gave me a practical understanding of how to construct a language format using Python. I then moved on to developing a lexical analyzer to tokenize strings and test the initial stage of the compiler. While this code did not fulfill the syntax analyzer, it included a useful indentation feature that allowed me to write Python code without worrying about formatting.

As I continued to build upon my code, I added a "print" and "prints" function to simplify the language input for printing and sorting lists of letters. I also developed a check syntax function that separated the program into statements and ensured that the first part of a statement was not an operator. Additionally, I created a second program that uses openAI to fulfill any input text and turn it into working Python code, which allowed me to use modern technology to simplify development and represent a different way of handling the problem of compiling a language into another language. Finally, I created a syntax tree for a simple input that could be used in my language, putting into practice the principles of language creation and analysis that I had learned throughout this project.

THE FOURTH DIALOGUE BETWEEN HYLAS AND PHILONOUS

about

THE END OF A SCIENCE

Or

GEORGE BERKELEY, THE VIRTUAL REALIST VINDICATED

* Hylas- “You were represented in the yesternight's conversation I had, as one who maintained the most extravagant opinion ever entered into the mind of man, namely that there is no such thing as independent reality which assigns truth values to our theories about it, that even the word truth is senseless and empty word and the like.”
* Philonous initially states that his oold friend philonous is a greater skeptic and maintains more paradoxes and repungnances to common sense then himself.
* (Turing Test for Theories).

How to test the complexity of a theory

PROVIDENCE(PROgram for Virtual Description of the Empirical evidENCE. )

* “I came up with this: every object we may notice in the VR is a result of some segment of the program code. This segment of the code stays idleup to the moment when it must be run. For example, if I am ni a VR room, the program segment for displaying the picture hanging on the wall behind me will not be activated unless I turn my head towards that wal.”

Text, letter

Description automatically generated

* The object doesn't exist unless perceived.

Project ideas: use the fourth diolougue and the smoking crab story to create a code that test certain theories

Project ideas: use the fourth diolougue and the smoking crab story to create code that tests a users theories or ideas

Project ideas: use the fourth diolougue and the smoking crab story to

Formal systems- Formal systems, mu system. The pq system (chapter 11 GEB)

Python program below :

-asks user to insert string with format

-then assigns their

Graphical user interface, text

Description automatically generated

Lex analyzer for ChrL1

Graphical user interface, application, table, Word

Description automatically generated

Diagram, schematic

Description automatically generated

Text

Description automatically generated

The above code has a call to the openAI API and will return formatted python code from any input (English, math, computer programming languages, and concepts)