CIS 343 – Structure of Programming Languages
Winter 2019, Section 1
Term Paper – A Programming Language Survey

Due Date: Monday, April 22nd, 2019

Choose a programming language and write a survey paper that summarizes the data and control constructs/abstractions provided in that language. The paper must consist of a minimum of 6-8 double-spaced pages.

In addition, you must also implement either Othello or Game of Life programming projects in the language surveyed.

You may not choose a language from this list: Java, Ruby, C, BASIC, and markup languages (such as HTML, XHTML, XML, SGML, etc.). You may also not choose a language you already know. At most four teams may choose any given language. I must approve your language before you begin.

Your paper should address the following aspects of the language chosen:

- Introduction
    - Origin and History
    - Computational paradigm(s) supported
        - Procedural, Object-Oriented, Functional, Logical, Scripting, …

- Data Abstractions
    - Data Types
    - Type checking (static or dynamic)

- Control Abstractions
    - Expressions
    - Operators and their precedence
    - Selection constructs
    - Iterative constructs
    - Functions
        - Definition and use
        - Parameter passing techniques supported
    - Scope rules (static or dynamic) used to resolve non-local references
    - Support for modules/packages to handle name collisions
    - Support for exception handling

- Support for inheritance, concurrency, and runtime type discovery (reflection/introspection).

- Sample code snippets to demonstrate features of the language surveyed, as needed.

- Comments on efficiency, readability, writability, and other criteria used to evaluate the language design/implementation

- **Upload the paper and the source code for the game implemented on Blackboard by due date.**