Analysis

All 5 requirement are implemented.

Design

* Overall design – Description/rationale of the overall structure of the solution and the roles of the individual components used in the applied solution

1. Lexical Analyzer
2. Syntax Analyzer
3. Semantic Analyzer
   1. Symbol table generation visitor
   2. Semantic checking visitor
4. Code generator
   1. Memory size computing visitor
   2. Code generation visitor

* Phases

1. Memory size computing phase
   1. Iterate every declaration (variable, function, class) to compute their memory size required
2. Code generation phase
   1. Label-based code generation
   2. Use visitor pattern to traverse AST. Then fire different actions to generate moon code
   3. Execution code and data code are stored separately in executionCode and dataCode. In the end of traversal, output first execution code and then data code into input.moon file.

Use of tools

1. Gephi: visualize AST
2. GCC: compile moon.c
3. Moon processor: compile generated code