Project 01 (30 Points - *Peer evaluation*): Due date - **March 14** (presentation during the class time, final submission at 11:59pm)

- **Task 01 (4 points):** Create a set of grammar rules (BNF/EBNF/Syntax diagram) for the following arithmetic operations (or a combination of the selected ones):

  Addition, Subtraction, Multiplication, Division, Logarithm, Modulus *(choose/select any 4 out of 6)*

- **Task 02 (4 points):** Write a lexical analyzer (scanner) to scan user input from the console/text file.
- **Task 03 (12 points):** Write a syntax analyzer for:
  - Identifying the tokens *(use regex)*.
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  - Saving/Inserting reserved words and identifiers to the symbol table. *(print the symbol table if debugging is enabled)*
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  - Generating a parse tree based on the above grammar rules (from Task 01). *(print the parse tree or AST if debugging is enabled)*
- **Task 04 (3 points):** Perform semantic analysis - e.g. type checking, i.e. types of operands are consistent with their operators. *(print the detailed results if debugging is enabled)*
- **Task 05 (2 points):** If Task 03 and Task 04 are successful then print the output to the console including the expected final result of the arithmetic operation.
- **Project Presentation (5 Points):** On March 14th during the class time. Each team will get maximum 7 minutes to present their theoretical background and demonstrate their implementation. 1 minute for Q/A. *(Please copy your program/presentation to the podium computer beforehand to save time.)*

Submission instruction: Please submit a MS Word/PDF file describing the theoretical background of your work (task 01 - task 05), your working code (including a how to document/read me file to compile and run), and demo presentation file in a zipped file in**Blackboard** only. Name your zip file as follows: SPR16_333P1_*Team#*.zip

Note: Instructor reserves the right to award maximum 5 bonus points to any outstanding submissions.