**BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI**

**DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION SYSTEMS**

**Principles of Programming Languages (CS F301)**

**Group No. 26**

**I Semester 2020-21**

**Assignment-1 Code Submission**

**Coding Details**

**(October 29, 2020)**

1. IDs and Names of team members

ID: 2018A7PS0191P Name: Arshit Modi

ID: 2018A7PS0194P Name: Devanshu

ID: 2018A7PS0269P Name: Guntaas Singh

ID: 2018A7PS0191P Name: Siddarth Agrawal

1. Mention the names of the Submitted files :

1 driver.c 7 parser.h 13 t1.txt 19 coding details proforma.docx

2 grammar.c 8 stack.c 14 t2.txt 20 Non-Terminals.txt

3 grammar.h 9 stack.h 15 t3.txt 21 Terminals.txt

4 lexer.c 10 traverseParseTree.c 16 t4.txt

5 lexer.h 11 traverseParseTree.h 17 t5.txt

6 parser.c 12 grammar.txt 18 t6.txt

1. Total number of submitted files: 19 (All files should be in **ONE folder** named exactly as Group\_#, # is your group number)
2. Have you mentioned your names and IDs at the top of each file (and commented well)? (Yes/ no) Yes [Note: Files without names will not be evaluated]
3. Have you compressed the folder as specified in the submission guidelines? (yes/no) yes
4. Have you ensured that the folder does not have any \*.o file or any executable file? (yes/no)yes
5. **Grammar and token stream**

Total number of production rules: 62

Total number of nonterminals: \_31\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Total number of terminals: \_\_29\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Grammar.txt file created [yes/no]: yes

Nonterminal symbols enumerated [yes/no]:\_yes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Terminal symbols enumerated [yes/no]:\_\_yes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Grammar data structure populated successfully [yes/no]:\_yes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Tokenstream created [yes/no]:\_yes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Which functions have you implemented?**
   1. ***readGrammar ( ) [yes] \_yes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***
   2. ***tokeniseSourcecode ( ) [yes] \_\_yes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***
   3. ***createParseTree ( ) [yes] \_\_yes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***
   4. ***traverseParseTree ( ) [yes] \_yes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***
   5. ***printParseTree ( ) [yes] \_yes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***
   6. ***printTypeExpressionTable ( ) [yes] \_\_yes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***
2. **Parse tree** 
   1. Constructed (yes/no):\_yes\_\_\_\_\_\_
   2. Printing as per the given format (yes/no): \_yes\_\_\_\_\_\_
   3. Describe the order you have adopted for printing the parse tree nodes (in maximum two lines)

\_preorder traversal \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Type Expression Table**

[A]. Constructed (yes/no):\_\_yes\_\_\_\_\_

[B]. Implemented as (lookup table/ hash table):\_no\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[C]. Printing as per the given format (yes/no): \_yes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[C]. Describe the structure of the type expression accommodating all types (in maximum two lines)

union of records, one each for primitives, rectangular arrays, jagged 2D and jagged 3D arrays \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Compilation Details:**
   1. Implemented in multiple files / single file:\_multiple\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Makefile works (yes/no):\_\_no\_\_\_\_\_\_\_\_\_
   3. Code Compiles (yes/ no):\_yes\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. Mention the .c files that do not compile:\_\_\_none\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   5. Any specific function that does not compile:\_\_\_none\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   6. Ensured the compatibility of your code with the specified gcc version(yes/no)\_\_yes\_\_\_\_\_\_\_\_\_\_
   7. Give below the exact commands to compile your code :

\_\_gcc -o driver parser.c grammar.c lexer.c stack.c Tree.c traverseParseTree.c driver.c \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Driver Details**: Does it take care of the options specified earlier(yes/no):\_\_yes\_\_\_\_\_\_\_\_\_
2. **Execution** 
   1. Status (describe in maximum 2 lines):\_\_\_executes without errors for syntactically correct code\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Gives segmentation fault with any of the test cases (1-6) uploaded on the course page. If yes, specify the testcase file name:\_\_\_none\_\_\_\_\_\_\_\_\_\_\_
  2. Command line arguments used for input file (yes/no):\_yes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Specify the language features your code is not able to handle (in maximum one line)\_\_Incorrect initialization of a 2D jagged array (like a 3D array) or vice versa is not supported and is not reported as an error\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Are you availing the lifeline (Yes/No): \_No\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Declaration: We, Arshit Modi, Devanshu, Guntaas Singh, Siddarth Agrawal (your names) declare that we have put our genuine efforts in creating the code and have submitted the code developed only by our group. We have not copied any piece of code from any source. If our code is found plagiarized in any form or degree, we understand that a disciplinary action as per the institute rules will be taken against us and we will accept the penalty as decided by the department of Computer Science and Information Systems, BITS, Pilani. [Write your ID and names below]

ID 2018A7PS0191P Name: Arshit Modi

ID 2018A7PS0194P Name: Devanshu

ID 2018A7PS0269P Name: Guntaas Singh

ID 2018A7PS0359P Name: Siddarth Agrawal

Date: 29-10-2020

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Should not exceed 3 pages.