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

**DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION SYSTEMS**

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

**Group No.**

**64**

**I Semester 2020-21**

**Assignment-1 Code Submission**

**Coding Details**

**(October 29, 2020)**

1. IDs and Names of team members

ID: 2018A7PS0277P Name: Chirag C D

ID: 2018A7PS0224P Name: R Rohit

ID: 2018A7PS0177P Name: Abhishek Agarwal

ID: 2018A7PS1121P Name: Akarsh Gowtham Shroff

1. Mention the names of the Submitted files :

1 typeTable.c 11 printParseTree.c

2 traverseParseTree.c 12 parser.h

3 tokeniseSourceCode.c 13 makefile

4 stack.c 14 main.c

5 t1.txt 15 grammar.txt

6 t2.txt 16 fileio.c

7 t3.txt 17 readGrammar.c

8 t4.txt 18 printTypeExpressionTable.c

9 t5.txt 19 createParseTree.c

10 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]

1. Have you compressed the folder as specified in the submission guidelines? (yes/no) Yes
2. Have you ensured that the folder does not have any \*.o file or any executable file? (yes/no) Yes
3. **Grammar and token stream**

Total number of production rules: 69

Total number of nonterminals: 36

Total number of terminals: 32

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/no] Yes***
   2. ***tokeniseSourcecode ( ) [yes/no] Yes***
   3. ***createParseTree ( ) [yes/no] Yes***
   4. ***traverseParseTree ( ) [yes/no] Yes***
   5. ***printParseTree ( ) [yes/no] Yes***
   6. ***printTypeExpressionTable ( ) [yes/no] 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)

Depth, Symbol (NonTerminal or Terminal enum), Is\_term(1 for terminal), Rule(Only for non-term), Lexeme(Only for terminal), LineNum(only for terminal), Type info

1. **Type Expression Table**

[A]. Constructed (yes/no): Yes

[B]. Implemented as (lookup table/ hash table): Implemented as Hash Table

[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)

Field1 - 20 size char buf, Field2 - enum, Field3 - enum, Field4 - union. Field 4 holds - for primitive, enum type.

for rect\_arr-number of dimensions, ranges. for jagged-number of dimensions, range and subrange info.

1. **Compilation Details:**
   1. Implemented in multiple files / single file: Multiple Files
   2. Makefile works (yes/no): Yes
   3. Code Compiles (yes/ no): Yes
   4. Mention the .c files that do not compile:-NA-
   5. Any specific function that does not compile:-NA-
   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:

1 ) make

2) ./parser <code\_file.txt>

**Driver Details**: Does it take care of the options specified earlier(yes/no): Yes

1. **Execution** 
   1. Status (describe in maximum 2 lines): All Test Cases Passed (After Corrections)
   2. Gives segmentation fault with any of the test cases (1-6) uploaded on the course page. If yes, specify the testcase file name: None
   3. Command line arguments used for input file (yes/no): Yes
2. Specify the language features your code is not able to handle (in maximum one line) None
3. Are you availing the lifeline (Yes/No): No
4. Declaration: We, Chirag C D, R Rohit, Abhishek Agarwal and Akarsh Gowtham Shroff, 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: 2018A7PS0277P Name: Chirag C D

ID: 2018A7PS0224P Name: R Rohit

ID: 2018A7PS0177P Name: Abhishek Agarwal

ID: 2018A7PS1121P Name: Akarsh Gowtham Shroff

Date: 29th October, 2020

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Should not exceed 3 pages.