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

Batch No. :

**DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION SYSTEMS**

**Compiler Construction (CS F363)**

**II Semester 2017-18**

**Compiler Project (Stage-1 Submission)**

**Coding Details**

**(February 26, 2018)**

1. **Personal details**

ID : 2015A7PS0078P

Name : Naveen Venkat

1. **Files and folder details**
2. Mention the names of the Submitted files :

1. coding details 2015A7PS0078P.docx 13. parser.c

2. complete\_grammar\_modified.txt 14. driver.c

3. firstFollow.py 15. makefile

4. firstNT.txt 16. testcase1.txt

5. firstRules.txt 17. testcase2.txt

6. followNT.txt 18. testcase3.txt

7. grammarFile.txt 19. testcase4.txt

8. lexer.h 20. firstFollowText.txt

9. lexerDef.h

10. lexer.c

11. parser.h

12. parserDef.h

1. Total number of submitted files: **20** (All files should be in ONE folder named exactly as your ID)
2. Have you compressed the folder as specified in the submission guidelines? **yes**
3. **Lexer Details:**
   1. Technique used for pattern matching: **DFA**
   2. Keyword Handling Technique: **Hashing**
   3. Hash function description, if used for keyword handling: **for string ABCDE..N the hash function calculates ( A + Bx + Cx^2 + .. N x^N ) mod M**
   4. Have you used twin buffer?: **NO**
   5. Error handling and reporting: **Yes**
   6. Describe the errors handled by you: **Lexical Errors (unknown symbol and unknown lexeme pattern)**
   7. Data Structure Description for tokenInfo (in maximum two lines): **named as dt\_token in lexerDef.h. It contains token ID, line number, value, lexeme.**
4. **Parser Details:** 
   1. High Level Data Structure Description (in maximum three lines each, avoid giving C definitions used):
      1. grammar : **contains array of LHS of rules (lhsArray) each of which contain a pointer to a linked list of RHS elements of the rule.**
      2. parse table: **2D array of integers**
      3. parse tree: (Describe the node structure also): **Not implemented**
      4. Any other (specify and describe): **linked-list (stack implemented using pushBack and popBack functions of the linked list)**
   2. Parse tree
      1. (Constructed: **No**
      2. Printing as per the given format : **N/A**
      3. Describe the order you have adopted for printing the parse tree nodes (in maximum two lines): **N/A**
   3. Computation of First and Follow Sets **(implemented in python – firstFollow.py)**
      1. Data structure for First and Follow sets : **Python (set), C (character array with index of the array representing the Terminal)**
      2. FIRST and FOLLOW sets computation automated : **In Python**
      3. Name the functions (if automated) for computation of First and Follow sets : **first, follow (in firstFollow.py)**
      4. If computed First and Follow sets manually and represented in file: **firstNT.txt** (first set of each non terminal)**, firstRules.txt** (first set of RHS of each rule)**, followNT.txt** (follow set of each non terminal)**, firstFollowText.txt** (the above three first/follow sets in user readable textual format).
   4. Error Handling and recovery
      1. Attempted : **No**
      2. Synchronizing set formation details: **N/A**
      3. Describe the types of errors handled: **N/A**
5. **Compilation Details**
   1. Makefile works : **Yes**
   2. Code Compiles : **Yes**
   3. Mention the .c files that do not compile: **N/A**
   4. Any specific function that does not compile: **N/A**
   5. Ensured the compatibility of your code with the specified gcc version: **Yes**
6. **Driver Details:** Does it take care of the options specified earlier : **Yes**
7. **Execution details**
   1. status (describe in maximum 2 lines): **Executes.**
   2. Gives segmentation fault with any of the revised test cases (1-5) uploaded on the course page. If yes, specify the testcase file name: **N/A**
8. Specify the language features your lexer or parser is not able to handle (in maximum one line): **Parse Tree Creation and Error Recovery**
9. **Lifeline detail:** Are you availing the lifeline : **Yes**
10. **Declaration**: I, Naveen Venkat declare that I have put my genuine efforts in creating the compiler project code and have submitted the code developed only by me. I have not copied any piece of code from any source. If my code is found plagiarized in any form or degree, I understand that a disciplinary action as per the institute rules will be taken against me and I will accept the penalty as decided by the department of Computer Science and Information Systems, BITS, Pilani.

ID : 2015A7PS0078P

Name: Naveen Venkat

Date: 27/2/2018

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/\*not to exceed two pages\*/