Final Assessment: Compiler Lab

CSE-0302 Summer 2021

Shrabonee Rani Datta, UG02-50-19-022
Department of Computer Science and Engineering
State University of Bangladesh (SUB)
Dhaka, Bangladesh

***Abstract*—Main theme of your assignment or academic projects.**

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***Index Terms*—The word mostly used in your report.**

I. Introduction

Assignment 4 - Detecting Simple Syntax Errors- Syntax errors are very common in source programs. The main purpose of this session is to write programs to detect and report simple syntax errors. We performed detection of simple syntax errors like duplication of tokens except parentheses or braces, unbalanced braces or parentheses problem, unmatched 'else' problem.

Assignment 5.1 and 5.2 - Use of CFGs for Parsing- we implemented a simple recursive descent parser to parse a number of types of statements after exercising with simpler CFGs. We note that a recursive descent parser can be constructed from a CFG with reduced left recursion and ambiguity.

Assignment 6 - Predictive Parsing- we implemented LL(1) and LR(1) algorithms. Firstly, found the FIRST and FOLLOW sets of each of the non-terminals, then constructed the predictive parsing table for LL(1) method, demonstrated the moves of the LL(1) parser, LR(0) automaton for the grammar, parsing table for LR(1) parsing, then demonstrated the moves of the LR(1) parser

II. Literature Review

Any work that previous any developer or researcher did, mention them in a few words.

III. Proposed Methodology

The methodology you work, explain here with code and other items.

A. Equations

sentence, as in:

$$a + b = \gamma \tag{1}$$

TABLE I
Table Type Styles

Table Head	Table Column Head		
	Table column subhead	*Subhead*	*Subhead*
copy	More table copy[a]		

[a]Sample of a Table footnote.

Fig. 1. Example of a figure caption.

IV. Conclusion and Future Work

In future, what you bring in your project and the idea of your work.

Acknowledgment

I would like to thank my honourable **Khan Md. Hasib Sir** for his time, generosity and critical insights into this project.

References

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[2] J. Clerk Maxwell, A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68–73.
[3] I. S. Jacobs and C. P. Bean, "Fine particles, thin films and exchange anisotropy," in Magnetism, vol. III, G. T. Rado and H. Suhl, Eds. New York: Academic, 1963, pp. 271–350.
[4] K. Elissa, "Title of paper if known," unpublished.
[5] R. Nicole, "Title of paper with only first word capitalized," J. Name Stand. Abbrev., in press.
[6] Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, "Electron spectroscopy studies on magneto-optical media and plastic substrate interface," IEEE Transl. J. Magn. Japan, vol. 2, pp. 740–741, August 1987 [Digests 9th Annual Conf. Magnetics Japan, p. 301, 1982].
[7] M. Young, The Technical Writer's Handbook. Mill Valley, CA: University Science, 1989.

Assignment 4

```
1  /* A program fragment*/
2
3  float x1 = 3.125;;
4  /* Definition of function f1 */
5  double f1(int int x)
6  {if(x<x1)
7      double z;
8  else z =     0.01+x*5.5;}}
9    else return z;
10 }
11 /* Beginning of 'main' */
12 int main(void)
13 {
14 int n1; double z;
15 {{ n1=25; z=f1(n1);}
```

Fig. 2. Assignment 4 Page 1

```
1  1
2  2
3  3 float x1 = 3.125;;
4  4
5  5 double f1(int int x)
6  6 {if(x<x1)
7  7 double z;
8  8 else z = 0.01+x*5.5;}}
9  9 else return z;
10 10 }
11 11
12 12 int main(void)
13 13 {
14 14 int n1; double z;
15 15 {{ n1=25; z=f1(n1);}
16
17
18 ERROR:
19 Error: Misplaced '}' at line 8
20 Error: Misplaced '}' at line 10
21 Error: Not Balanced Parentheses at line 15
22 Error: Not Matched else at line 9
23 Error: Duplicate token at line 3
24 Error: Duplicate token at line 5
```

Fig. 3. Assignment 4 Page 2

Assignment 5

```
1  b
2  ab
3  aab
4  aaab
```

Fig. 4. Assignment 5 Page 3

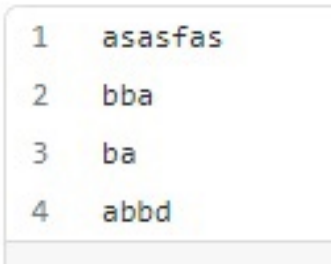

Fig. 5. Assignment 5 Page 4

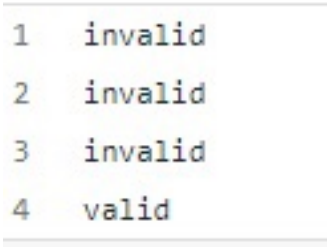

Fig. 6. Assignment 5 Page 5

Assignment 6

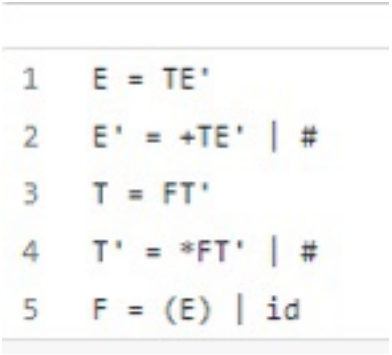

Fig. 7. Assignment 6 Page 6

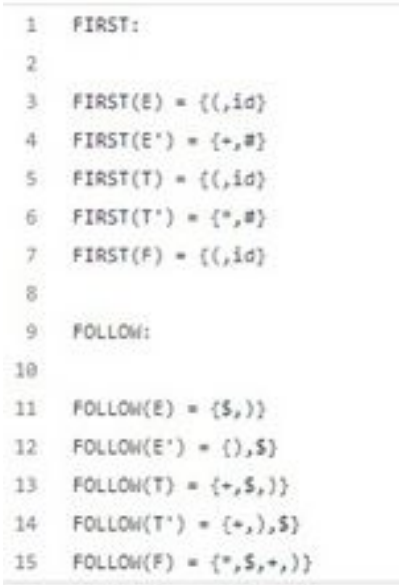

Fig. 8. Assignment 6 Page 1