Compiler Design
Projects

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- Weighted contribution to your final grade:
  - **Attendance and Attitude: 10% (10 points)**
    - Today, you earn 11 credits. You will get (i) 1 credit reduction per absence and (ii) 0.5 credit reduction per late attendance.
    - If your final credit is equal to and more than ten, you will get full points (i.e., 10 points). If your final credit is more than zero and less than ten, your credit will be equal to your point.
    - If your final point is equal to or less than 5, you will get F.
  - **Midterm Exam: 30% (30 points)**
  - **Final Exam: 40% (40 points)**
  - **Project: 20% (20 points)**
    - Details and grading criteria will be provided later.

- You have to complete one of following two
  - [1] Implementation: SLR Implementation with C
  - [2] Theory: CLR and LALR

- SLR Implementation with C
  - Compilation and Execution
    - Source Code Name: slr.c
    - Input File (Set of Production Rules) Name: rule.txt

```
gcc –o slr slr.c
./slr rule.txt
>>  x*x+x
ACCEPT
>> xx
ERROR
>> FIRST
E: ( x
T: ( x
F: ( x
>> FOLLOW
E: $ + )
T: $ * + )
F: $ * + )
>> TABLE
……
```

```
……
0: x[s5] ([s4] E[1] T[2] F[3]
1: +[s6] $[ACCEPT]
…
>> ACTION
0: x[s5] ([s4]
1: +[s6] $[ACCEPT]
…
>> GOTO
0: E[1] T[2] F[3]
…
>> I1
S>E.
E>E.+T
>> exit
```

rule.txt

```
R1
E>E+T
R2
E>T
R3
T>T*F
R4
T>F
R5
F>(E)
R6
F>x
```

- SLR Implementation with C
  - Grading Criteria (out of 100%)
    - Implementation (60%)
      - Accuracy Test with Sample Cases (If your code is not compiled with gcc, you will get no credits for the entire project.)
      - Function Organization
      - Comments
    - Documentation (40%)
      - Function Explanation
        - What is this for? What are the input arguments? What should be return results?
      - Flow Chart

- Documentation for CLR and LALR (both)
  - PPT (50%)
    - Two PPT slides should be submitted where one for CLR and the other for LALR
    - Each PPT includes
      - Detailed Theory
      - Step-by-Step Procedure
      - Example-based Explanation
      - (Should be similar to the lecture note about SLR)
  - Documentation per PTT slide (50%)
    - Two documents should be submitted where one for CLR and the other for LALR
      - Explanation about the PPT per slide.