

CSC 135

PL Assignment 4, Web Programming Recursive Descent Parser

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## Introduction

### PL Homework Assignment 4:

#### Web-based Recursive Descent Recognizer

In this assignment you are to implement a recursive-descent recognizer with a web interface for the BNF grammar given below. Based on the pseudocode you have done in PL Assignment 1, this is a good opportunity to develop the web programming skills required by today's IT field.

$EXP ::= EXP + TERM \mid EXP - TERM \mid TERM$

$TERM ::= TERM * FACTOR \mid TERM / FACTOR \mid FACTOR$

$FACTOR ::= ( EXP ) \mid DIGIT$

$DIGIT ::= 0 \mid 1 \mid 2 \mid 3$

The following is a set of requirements for this recognizer (parser):

- Ask the user for an input stream.
- Report "legal" or "errors found" (not both!).
- Assume the input stream is the token stream.
- Assume the input stream terminates with a \$.
- Assume there is no white space.
- Use a form to collect input and return the output.
- Test your recognizer with illegal and legal strings.
- Give a brief description of this recognizer for the user on how to use and what method that it based on.

## Language Used and Experience

For my Web-based Recursive Descent Recognizer, I initially wanted to write the assignment in PHP. However, because of other people saying they had some challenges with PHP, I decided to use Javascript to make the Recursive Descent Recognizer. Although I went to the w3school website to learn PHP and later on, Javascript, this is the first time using JavaScript.

At the start of making the Recursive Descent Recognizer, I used my pseudocode as a guide to get started. As soon as I was finished with the code, I ran into some problems with some of the

sample strings. When I used console.log and f12 (developer tools), it helped me solve the issues with my code.

### Helpful Sources

I used <https://www.w3schools.com/js/default.asp> to help me make my Recursive Descent Recognizer. The website teaches the basics of JavaScript very well, especially the console.log and f12 option.

### For Future Students

For future students, I recommend using Javascript because there are similarities between JavaScript and Java. I also recommend for students that are struggling to complete the assignment to use the debug features after pressing the f12 button.