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## PROGRAMMING LANGUAGES

## LEXICAL ANALYZER FOR BIG ADD LANGUAGE

## BigAdd language is a small programming language that has been designed in order to add and subtract big integers programmatically and display the result on the screen.In this project we designed lexical analyzer that load the script file called myscript.ba and perform lexical analysis on it.Lexical analyzer read the script file line by line and by parsing words it detects tokens and write tokens on the seperate lines to the file with the same name and “.lx” extension.The program also detects lexical errors and inform about them with the error type messages and shows the line that the error detected.

## Importan Functions:

## 1)void StringW(FILE \*fptr, FILE \*wfptr, char ch)

## This function prints the string constants.It reads the string between quatation marks and checks if the string isn’t bigger than maximum length and not end of file.After first “ the function keeps reading until second “.If the quatation mark wasn’t closed it prints Match Error.

## 2)void charDetector(char ch, FILE \*fptr, FILE \*wfptr)

## This function detects the meaningfull characters such as seperator,brackets,endofline,etc. in the file.While checking every character it specify them by switch-case.

## 3)void constWriter(char\* word,int minus,FILE\* f,FILE\* w)

## This function prints the integer constant.It checks the word with checkdigit() function,if it is integer it checks if the integer is negative or not.If it is negative it prints from (word – 1) so,the minus sign can be printed.

## 4)int checkDigit(char\* word,FILE f,FILE w)

## This function checks if the given word is integer or not by checking every character of the word with isdigit() method.

## 5)int wordParser(FILE \* f,char\* word,char \*keywords,FILE w)

## This function first checks the float usage (3.0) by searching pattern integer then . usage.If this pattern is found then program prints float usage error.Then it checks for minus usage.Then by parsing words it checks keyword or identifier usage.It also checks the maximum character length for identifiers.

## 6) int main(int argc, char \*argv[])

## After this is compiled, it expects an input parameters.Input parameters is used as input file in script.

## Errors:

## 1)If there is blank between the minus sign and the first digit,the program output Invalid minus sign usage.

## The input:

## 

## The output:

## 

## 2)If there is plus sign before the first digit,the program output Unrecognized character (+)

## The input:

## 

## The output:

## 

## 3)If the quatation mark was opened but wasn’t closed (for example: “Sum: ) the program output unmatched character error.

## The input:

## 

## The output:

## 

## 4)If the identifier length is more than 20 characters the program output Invalid identifier length error.

## The input:

## 

## The output:

## 

## 5)If the comment paranthesis was opened but wasn’t closed the program output not found end paranthesis error.

## The input:

## 

## The output:

## 

## 6)If the variable name doesn’t start with letter(for example: 1sum) the program output error word.

## The input:

## 

## The output:

## 

## 7)If there is non-alphanumeric character except underscore character (for example: sum-) the program output Invalid identifier toker.

## The input:

## 

## The output:

## 

## Output tests:

## Example of successful output

## The input:

## 

## The output with tokens:

## 

## Another example:

## The input:

## 

## The output:

## 