<u>Compiler Design Parser Project</u>

Topic : HTML Parser for <head> <title><font>

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Project Overview

This project presents a simple parser to validate HTML Tags such as head tag, font tag , title tag with limited use cases and tokens supported. It's made for academic purposes and learning purposes.

Assumptions
1. Empty string is invalid.
2. The <title> inside the title tag only takes <title> tag as text so we have taken it as an invalid input.
3. Head tag can contain title and font are valid.

Strengths of Parser

- Validates valid HTML tags such as Head, font ,title.
- Handles varied levels of nesting across multiple content and tags.

Limitations of Parser

- Can't handle arithmetic expressions, complex strings (composing of characters other than whitespace and alphanumeric characters and variables used as elements.
- The parser cannot parse any other tags than the above mentioned html tags.

Commands to run code :

Windows

1. flex code.l
2. bison -vdy code.y
3. gcc lex.yy.c y.tab.c
4. ./a.exe

Linux

1. yacc -d –verbose code.y
2. lex code.l
3. gcc lex.yy.c y.tab.c
4. ./a.out

Sample execution:

```
G:\VSCode\MCA\Sem_4\compiler\parser project>bison -d head.y

G:\VSCode\MCA\Sem_4\compiler\parser project>flex head.l

G:\VSCode\MCA\Sem_4\compiler\parser project>gcc lex.yy.c head.tab.c

G:\VSCode\MCA\Sem_4\compiler\parser project>a.exe
Enter the HTML:
```

Examples of Valid HTML input

```
Enter the HTML:
<head></head>

Valid Statement!
Press any key to continue . . .

G:\VSCode\MCA\Sem_4\compiler\pakka>a.exe
Enter the HTML:
<head>text</head>
text
Valid Statement!
Press any key to continue . . .

G:\VSCode\MCA\Sem_4\compiler\pakka>a.exe
Enter the HTML:
<head><title>title name</title></head>
title name
Valid Statement!
Press any key to continue . . .

G:\VSCode\MCA\Sem_4\compiler\pakka>a.exe
Enter the HTML:
<head><font></font></head>

Valid Statement!
Press any key to continue . . .

G:\VSCode\MCA\Sem_4\compiler\pakka>a.exe
Enter the HTML:
<title>title name</title>
title name
Valid Statement!
Press any key to continue . . .

G:\VSCode\MCA\Sem_4\compiler\pakka>a.exe
Enter the HTML:
<font>font amen</font>
font amen
Valid Statement!
Press any key to continue . . . _
```

Examples of Invalid HTML Inputs

```
Enter the HTML:


Invalid Statement
Press any key to continue . . .

G:\VSCode\MCA\Sem_4\compiler\pakka>a.exe
Enter the HTML:
<head>

Invalid Statement
Press any key to continue . . .

G:\VSCode\MCA\Sem_4\compiler\pakka><head
The syntax of the command is incorrect.

G:\VSCode\MCA\Sem_4\compiler\pakka>a.exe
Enter the HTML:
<head
head
Invalid Statement
Press any key to continue . . .

G:\VSCode\MCA\Sem_4\compiler\pakka>a.exe
Enter the HTML:
<head><title><font></font></title></head>

Invalid Statement
Press any key to continue . . . _
```