LEXICAL ANALYZER USING LEX TOOLS

1. To find out number of occurrence of predefined words in a file

CODING:

```
%{
  #include<stdio.h>
  int pw=0,nw=0;
%}
%%
[t][h][e]|[i][s]|[w][a][s]        {pw++;}
[a-z|A-Z]*      {nw++;}
%%
int main()
{
 yylex();
 printf("\nThe number of predefined words %d\n",pw);
 printf("\nThe number of undefined words %d\n",nw);
}
int yywrap()
{
 return(1);
}
```

INPUT FILE:

Hi, Today is Monday. Welcome to the PCD Lab.

OUTPUT:

$ lex ex31.l

$ cc lex.yy.c

$ ./a.out <text.txt

The number of predefined words 2

The number of undefined words 7

---

2. Using LEX find out no of lines, words, characters in the given text file

CODING:

```
%{
  #include<stdio.h>
  int line=0,word=0,chara=0;
%}
%%
\n {++line;++chara;++word;}
[ ] {++word;}
 .  {++chara;}
%%
int main()
{
  yylex();
  printf("Number of line=%d\n",line);
```

```
  printf("Number of words =%d\n",word);
  printf("Number of characters=%d\n",chara);
}
int yywrap()
{
  return(1);
}
```

INPUT FILE:

Hai, Today is Monday. Welcome to the PCD Lab.

OUTPUT:

```
$ lex ex32.l
$ cc lex.yy.c
$ ./a.out < text.txt
Number of line=1
Number of words =9
Number of characters=45
```

---

3. Using LEX to find out different tags and their no of occurrences in the given HTML file.

CODING:

```
%{
  #include<stdio.h>
  #include<string.h>
  int ntag=0;
  int ctag[20];
```

```
  char tag[20][20];
  int temp=0;
  int i;
%}
%%
[<][a-z|0-9|A-Z]+[>] { for(i=0;i<ntag;i++)
                          if(!strcmp(yytext,tag[i]))
                            {temp++;++ctag[i];};
                          if(temp==0)
                            strcpy(tag[ntag++],yytext);
                          temp=0;
                       }
%%
int main()
{
 yylex();
 printf("\nthe result is %d \n",ntag);
 for(i=0;i<ntag;i++)
  printf("%s\t%d\n",tag[i],++ctag[i]);
}
 int yywrap()
{
 return(1);
}
```

INPUT FILE:

```
<html>
<body>
<h1><TaBle><tr><th><td>name</td></th>
<div>tre</div>
<456>sdds</456>
<br>
<br>
<th><td>m1</td></th>
<th><td>m2</td></th>
</tr>
</table>
</h1>
</body>
</html>
```

OUTPUT:

```
$ lex ex331.l
$ cc lex.yy.c
$ ./a.out < html
```

The number of tags: 10

<html> 1

<body> 1

<h1> 1

<TaBle> 1

<tr> 1

<th> 3

<td> 3

 1

<456> 1

 2

---

4. Using LEX to convert student marks available in text format to HTML table format.

CODING:

```
%{
#include<stdio.h>
%}
%%
[Name:]  {return (10);}
[M][0][1][:] { return(100);}
[M][0][2][:] {return(100);}
[M][0][3][:] { return(100);}
[M][0][4][:] { return(100);}
[M][0][5][:] { return(100);}
```

```
[M][0][6][:] { return(100);}
[a-z|A-Z]+ {return 1;}
[0-9]+ {return 2;}
%%

int main(int argc, char ** argv)
{
   FILE *yyin;
   yyin=fopen(argv[1],"r");
   int t,i,s=0;
   printf("<HTML>\n<BODY>\n<TABLE>\n<TR>\n");
   char inp[10][10]={"NAME","M01","M02","M03","M04","M05"};
   for(i=0;i<6;i++)
   printf("<TH><TD>%s</TD></TH>\n",inp[i]);
   printf("</TR>");
   while(t=yylex())
  {
    if(t==10)printf("<TR>\n<TD>");
    if(t==1&&strcmp(yytext,"Name")!=0) printf("%s</TD>\n",yytext);
    if(t==2)printf("%d</TD></TH>\n",atoi(yytext));
    if(t==100)printf("<TH><TD>");
  }
  printf("\n</TR>\n</TABLE>\n</BODY>\n</HTML>");
  printf("\n");
}
int yywrap()
```

```
{
   return (1);
 }
```

INPUT FILE:

```
Name: ABC
M01:20
M02:90
M03:90
M04:89
M05:56
M06:89
```

OUTPUT:

```
$ lex ex34.l
$ cc lex.yy.c
$ ./a.out < det
```

```
<HTML>
<BODY>
<TABLE>
<TR>
<TH><TD>NAME</TD></TH>
```

<TH><TD>M01</TD></TH>

<TH><TD>M02</TD></TH>

<TH><TD>M03</TD></TH>

<TH><TD>M04</TD></TH>

<TH><TD>M05</TD></TH>

</TR><TR>

<TD>ABC</TD>

<TH><TD>20</TD></TH>

<TH><TD>90</TD></TH>

<TH><TD>90</TD></TH>

<TH><TD>89</TD></TH>

<TH><TD>56</TD></TH>

<TH><TD>89</TD></TH>

</TR> </TABLE> </BODY> </HTML>
