THE SUPERIOR UNIVERSITY LAHORE

Faculty of Computer Science & IT

Compiler Construction

PROJECT 1st Iteration

[Parser for SQL Select Query]

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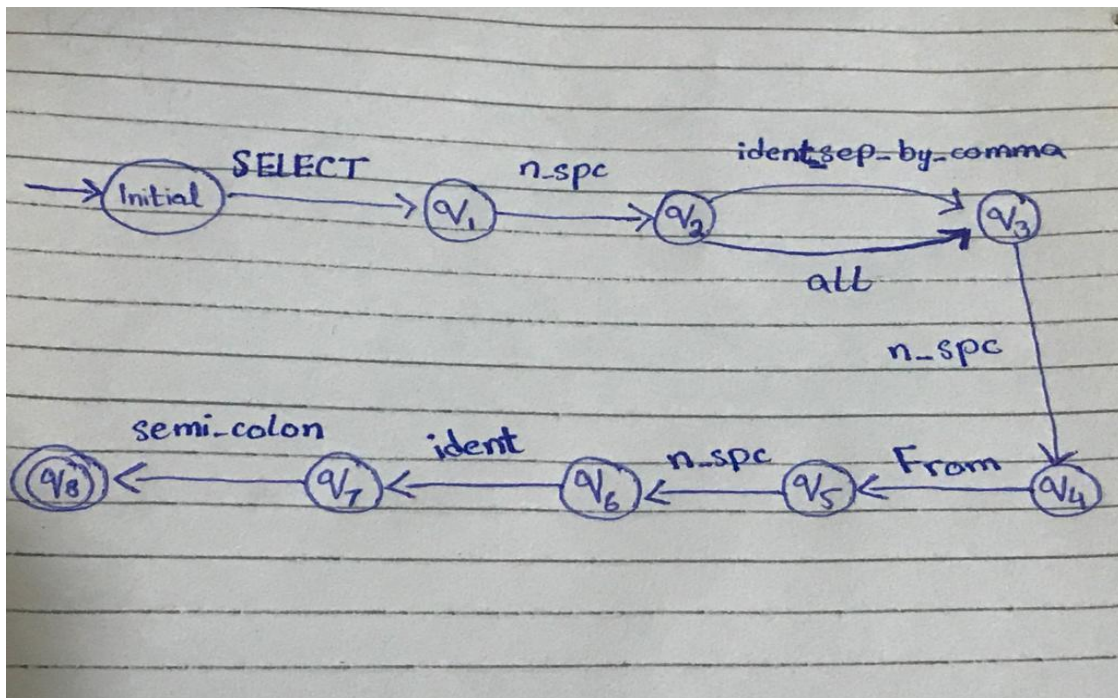| Student Name	Student ID	Program	Contact Number	Email Address
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LEXEMES IN QUERY

Token	Abbreviation	Regular Expression
Identifier	ident	[A-Za-z_][A-Za-z0-9_]*
Semi colon	semi_colon	\ ;
One or more white spaces	n_spc	\ s+
Zero or more white spaces	spc	\ s*
All	all	\ *
Bracket open	bra_open	\ (
Bracket close	bra_close	\ )
Comma	comma	\ ,
Ident separated by comma value	ident_sep_by_comma	((bra_open)(ident)(spc)(comma)(spc))* ((bra_open)(ident)(bra_close))
SELECT	select	(SELECT)(n_spc)(ident_sep_by_comma|all) (n_spc)(FROM)(n_spc)(ident) (semi_colon)

Regular Expression for SQL Select Query:

➢ (SELECT)(n_spc)(ident_sep_by_comma + all) (n_spc)(FROM)(n_spc)(ident)(semi_colon)

DFA:

Flex Code:

```
-----+----1----+----2----+----3----+----4----+----5----+----6----+----7-
 1  %option noyywrap
 2  %{
 3          #include<stdio.h>
 4  %}
 5
 6  % S q1 q2 q3 q4 q5 q6 q7 q8
 7
 8  %%
 9
10  <Initial> SELECT BEGIN q1;
11  <Initial> \n BEGIN q8;                      {printf("Invalid");}
12  <q1> n_spc BEGIN q2;
13  <q1> \n BEGIN q8;                           {printf("Invalid");}
14  <q2> all BEGIN q3;
15  <q2> ident_sep_by_comma BEGIN q3;
16  <q2> \n BEGIN q8;                           {printf("Invalid");}
17  <q3> n_spc BEGIN q4;
18  <q3> \n BEGIN q8;                           {printf("Invalid");}
19  <q4> From BEGIN q5;
20  <q4> \n BEGIN q8;                           {printf("Invalid");}
21  <q5> n_spc BEGIN q6;
22  <q5> \n BEGIN q8;                           {printf("Invalid");}
23  <q6> ident BEGIN q7;
24  <q6> \n BEGIN q8;                           {printf("Invalid");}
25  <q7> semi_colon BEGIN q8;                   {printf("Accepted");}
26  <q7> \n BEGIN q8;                           {printf("Accepted");}
27
28  %%
29  |
30  int main()
31  {
32
33          return 0;
34  }
```