

## A21 - Adam Di Cioccio and Sara Mehari

CST8152 Compilers - Lab Section 4

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### Task 1 - Regular Expressions

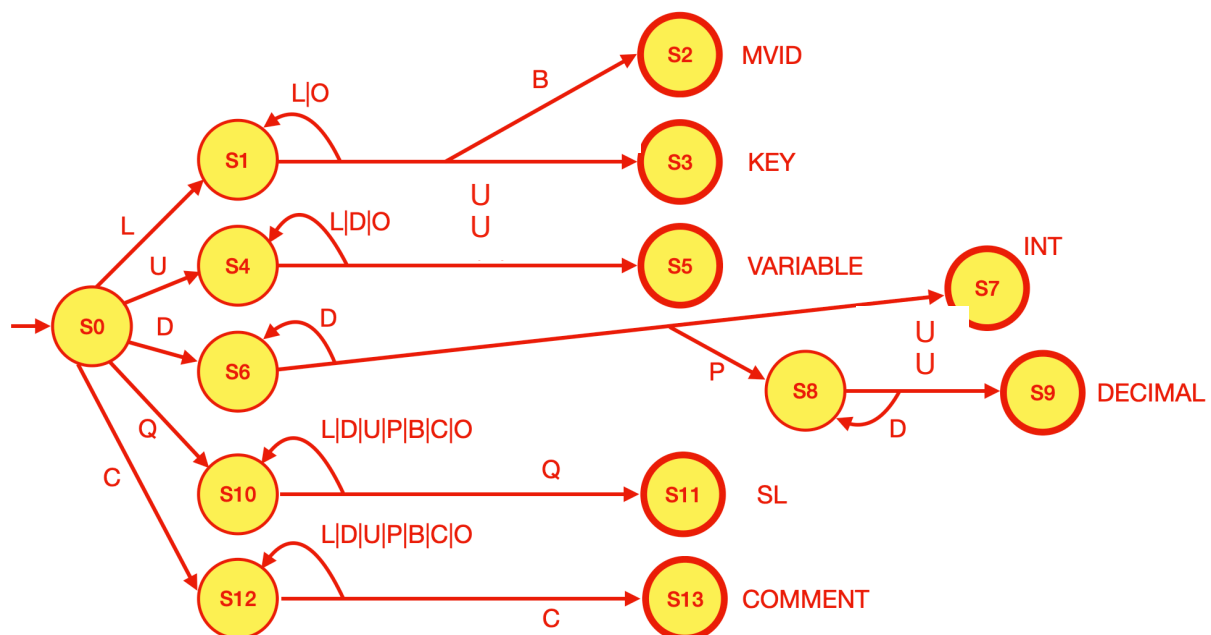
Lexeme Classes:

<b>L</b> = [A-Z / a-z]	(Letters)
<b>D</b> = [0-9]	(Digits)
<b>U</b> = [ _ ]	(Underscore)
<b>P</b> = [ . ]	(Period)
<b>B</b> = [ \$ ]	(Delimiter)
<b>C</b> = [ # ]	(Start of a comment)
<b>Q</b> = [ " ]	(Quotation marks)
<b>O</b> = [ ^LDUBCQ ]	(Other Characters)

**BASIC TOKENS** (NEWLINE) (TAB) ;

KEY = [ if, elseif, else, while, do, abr\_chr, abr\_int, abrflt, abr\_null, abr\_bol, abr\_flg, abr\_dbl, abr\_lng ]

### Task 2 - Transition Diagram



### Task 3 - Transition Table

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/*  [A-z] , [0-9],  _,  .,  $",  #,  "",other,
    |  L(0),  D(1), U(2), P(3), B(4), C(5),  Q(6), O(7), */
{   1,    6,    4,  ES,    4,   12,   10,   ES}, // S0: NOAS
{   1,   ES,    3,  ES,    2,   ES,   ES,    1}, // S1: NOAS
{  IS,   IS,   IS,  IS,   IS,   IS,   IS,   ES}, // S2: ASNR (MVID)
{  IS,   IS,   IS,  IS,   IS,   IS,   IS,   ES}, // S3: ASWR (KEY)
{   4,    4,    5,  ES,   ES,   ES,   ES,    4}, // S4: NOAS
{  IS,   IS,   IS,  IS,   IS,   IS,   IS,   ES}, // S5: ASWR (VARIABLE)
{  ES,    6,    7,    8,   ES,   ES,    3,   ES}, // S6: NOAS
{  IS,   IS,   IS,  IS,   IS,   IS,   IS,   ES}, // S7: ASWR (INT)
{  ES,    8,    9,  ES,   ES,   ES,   ES,   ES}, // S8: NOAS
{  IS,   IS,   IS,  IS,   IS,   IS,   IS,   ES}, // S9: ASWR (DECIMAL)
{  10,   10,   10,  10,   10,   10,   11,   10}, // S10: NOAS
{  IS,   IS,   IS,  IS,   IS,   IS,   IS,   ES}, // S11: ASNR (SL)
{  12,   12,   12,  12,   12,   12,   13,   12}, // S12: NOAS
{  IS,   IS,   IS,  IS,   IS,   IS,   IS,   ES} // S13: ASNR (COMMENT)

```