SSN COLLEGE OF ENGINEERING, KALAVAKKAM

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Compiler Design Lab

Programming Assignment-2 - Implementation of Symbol Table Construction

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Develop a Lexical analyzer to recognize the patterns namely, identifiers, constants, and keywords using the following regular expressions.

Regular Expression for Identifier	**Regular Expression for Constants**
letter → [a-zA-Z] digit → [0-9] id→letter(letter|digit)*	digit → [0-9] digits →digit digits optFrac →.digits optExp → E(+|-|ϵ) digits numberconst →digits optFrac optExp charconst → ‘(letter)’ stringconst → “(letter)*” constant → numberconst | charconst |stringconst
Regular Expression for keywords int → int float → float char → char double → double .. .. keywords → int|float|char|double|…..	

Convert the regular expressions into a cumulative transition diagram. Each state represents a condition that could occur during the process of scanning the input looking for a lexeme that matches one of the several patterns. Convert each state into a piece of code. Test the code using the following test case

INPUT

```
int a=9, b1, number=10;
float f1=4.5, f2=6E2;
float f3=4E+9;
char c='a';
```

OUTPUT

KW ID ASSIGN NUMCONST SP ID SP ID ASSIGN NUMCONST SP
KW ID ASSIGN FLOATCONST SP ID ASSIGN FLOATONST SP
KW ID ASSIGN FLOATCONST SP
KW ID ASSIGN CHARCONST

SYMBOL TABLE

Name	Type	Value
a	int	9
b1	int	0
number	int	10
f1	float	4.5
f2	float	6E2
f3	float	4E+9
C	char	'a'