Compiler Design

Topics	GATE Weightage
Basics of Compiler	4-8 Marks
Lexical Analysis	
Syntax Analysis(Parsing)	
Syntax Directed Translation(SDT)	
Intermediate code generation	
Code Optimization	
Runtime Environment	

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Today Class Topics

-Introduction of Compiler
-Difference Between Compiler and Interpreter
-Language Processing System
-Phases of Compiler & Type of Compiler
-Lexical Analysis
-Pattern, Lexeme and Tokens
-Count no. of Tokens
-Different Types of Errors

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Compiler:

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Difference b/w Compiler and Interpreter:

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Language Processing System:

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Static Vs Dynamic Linking:

Static Linking: Linking is performed before execution

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Dynamic Linking:

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Phases of Compiler:

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Types of Compiler:

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Output of Every Phases of Compiler:

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Lexical Analysis:

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Token, Pattern and Lexeme:

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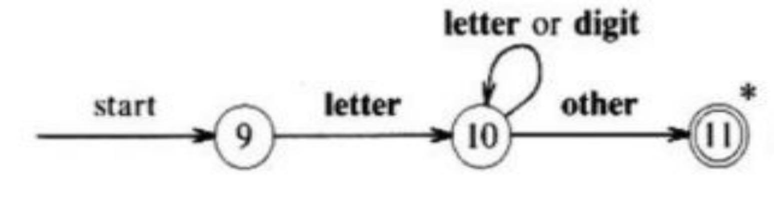
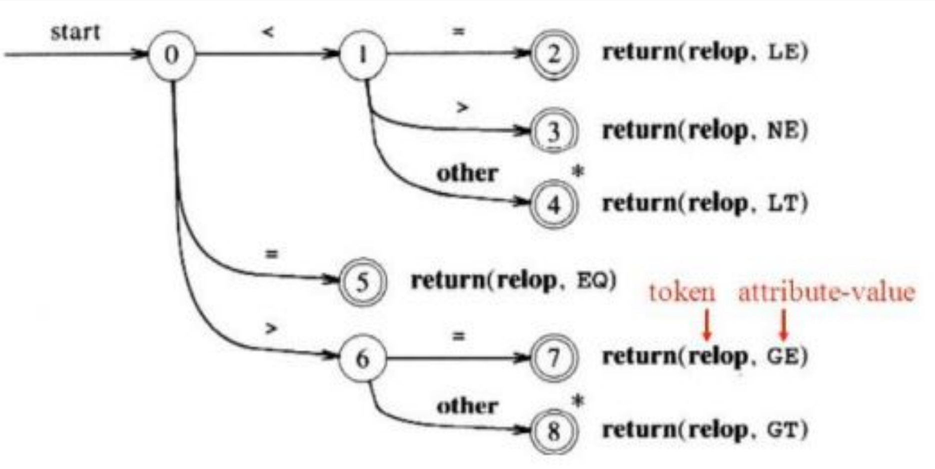
Recognization of identifier, Keyword and operators:





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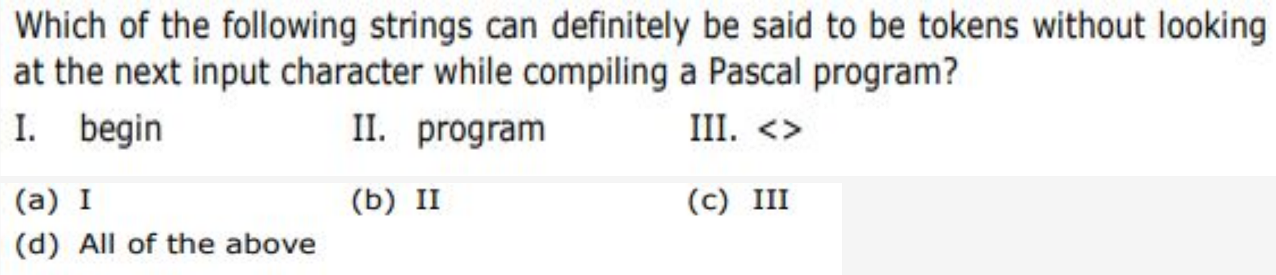

Which of the following strings can definitely be said to be tokens without looking at the next input character while compiling a Pascal program?

I. begin II. program III. <>

(a) I (b) II (c) III

(d) All of the above

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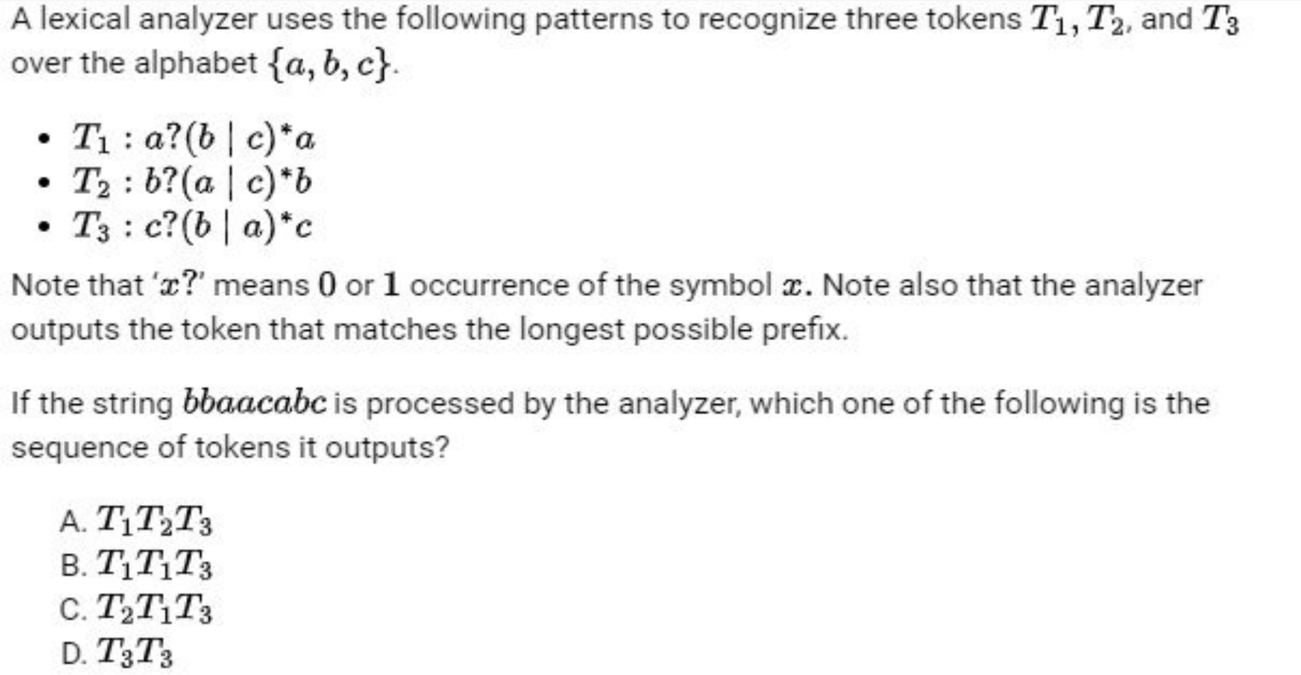

A lexical analyzer uses the following patterns to recognize three tokens T_1, T_2, and T_3 over the alphabet $\{a, b, c\}$.

- $T_1 : a?(b \mid c)^*a$
- $T_2 : b?(a \mid c)^*b$
- $T_3 : c?(b \mid a)^*c$

Note that '$x?$' means 0 or 1 occurrence of the symbol x. Note also that the analyzer outputs the token that matches the longest possible prefix.

If the string $bbaacabc$ is processed by the analyzer, which one of the following is the sequence of tokens it outputs?

A. $T_1T_2T_3$
B. $T_1T_1T_3$
C. $T_2T_1T_3$
D. T_3T_3

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Count no. of Tokens:

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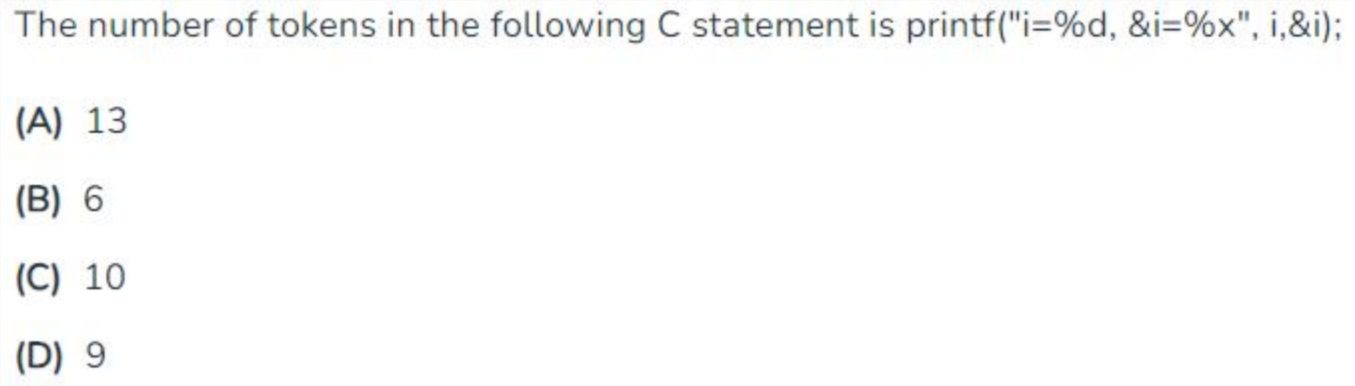

The number of tokens in the following C statement is printf("i=%d, &i=%x", i,&i);

(A) 13

(B) 6

(C) 10

(D) 9

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Errors:

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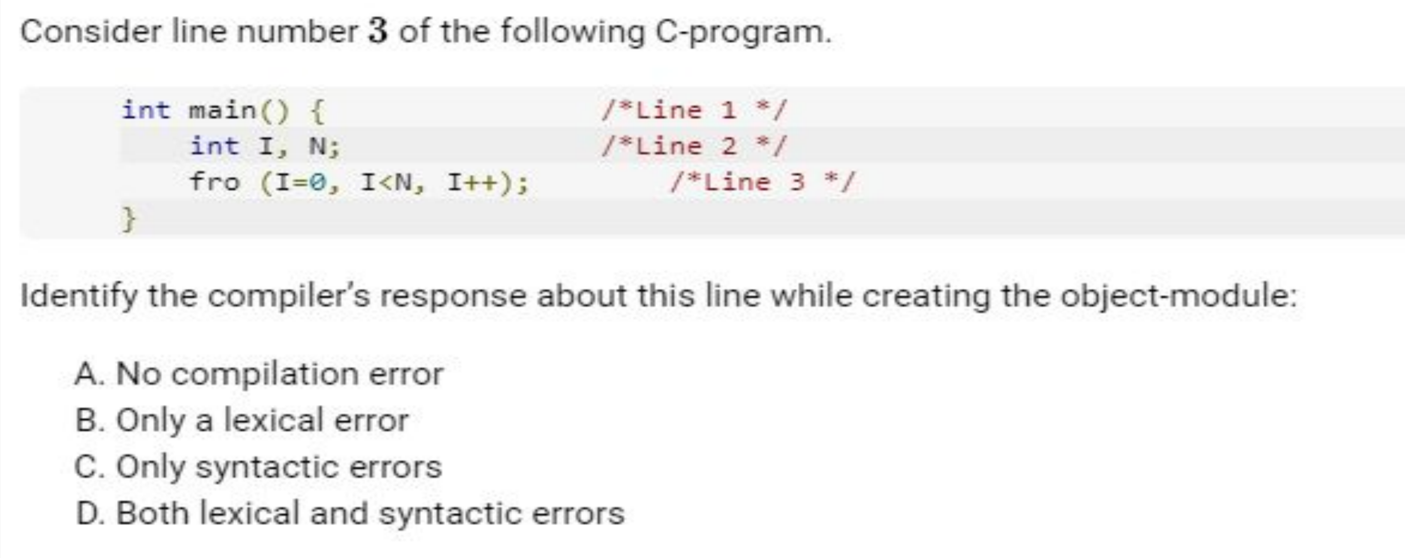

Consider line number 3 of the following C-program.

```
int main() {                   /*Line 1 */
    int I, N;                  /*Line 2 */
    fro (I=0, I<N, I++);           /*Line 3 */
}
```

Identify the compiler's response about this line while creating the object-module:

A. No compilation error
B. Only a lexical error
C. Only syntactic errors
D. Both lexical and syntactic errors

Thank You !