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```
Input Code:
int x = 10;
float y;
int z = 5;
if (x > 0) {
    y = x * 2.0;
} else {
    y = x / 6 + z;
}
float q = 2.4;
```

Tokenized Result:

Token Type	Lexeme
KEYWORD	int
IDENTIFIER	x
OPERATOR	=
INT_CONSTANT	10
PUNCTUATION	;
KEYWORD	float
IDENTIFIER	y
PUNCTUATION	;
KEYWORD	int
IDENTIFIER	z
OPERATOR	=
INT_CONSTANT	5
PUNCTUATION	;
KEYWORD	if
PUNCTUATION	(

IDENTIFIER	x
OPERATOR	>
INT_CONSTANT	0
PUNCTUATION)
PUNCTUATION	{
IDENTIFIER	y
OPERATOR	=
IDENTIFIER	x
OPERATOR	*
FLOAT_CONSTANT	2.0
PUNCTUATION	;
PUNCTUATION	}
KEYWORD	else
PUNCTUATION	{
IDENTIFIER	y
OPERATOR	=

IDENTIFIER	x
OPERATOR	/
INT_CONSTANT	6
OPERATOR	+
IDENTIFIER	z
PUNCTUATION	;
PUNCTUATION	}
KEYWORD	float
IDENTIFIER	q
OPERATOR	=
FLOAT_CONSTANT	2.4
PUNCTUATION	;

Unordered Symbol Table:

Counter	Variable Name	Type	Dimension	Line Declaration	Line Reference
1	x	int		1	[1, 4, 5, 7]
2	y	float		2	[2, 5, 7]
3	z	int		3	[3, 7]
4	q	float		9	[9]

Ordered Symbol Table:

Counter	Variable Name	Type	Dimension	Line Declaration	Line Reference
1	q	float		9	[9]
2	x	int		1	[1, 4, 5, 7]
3	y	float		2	[2, 5, 7]
4	z	int		3	[3, 7]

```

input: x + 10 * y
Top-Down Parsing successful!
{
  "type": "E",
  "children": [
    {
      "type": "IDENTIFIER",
      "value": "x",
      "children": []
    },
    {
      "type": "+",
      "value": "+",
      "children": []
    },
    {
      "type": "INT_CONSTANT",
      "value": "10",
      "children": []
    },
    {
      "type": "*",
      "value": "*",
      "children": []
    },
    {
      "type": "IDENTIFIER",
      "value": "y",
      "children": []
    }
  ]
}

```

FIRST Sets:

FIRST(E): {'num', 'id', '('}

FIRST(F): {'num', '(', 'id'}

FIRST(T): {'num', 'id', '('}

FOLLOW Sets:

FOLLOW(E): {')', '+', '-'}

FOLLOW(F): {')', '/', '*', '-', '+'}

FOLLOW(T): {')', '+', '/', '*', '-'}

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