

Java Programming II

Lab9

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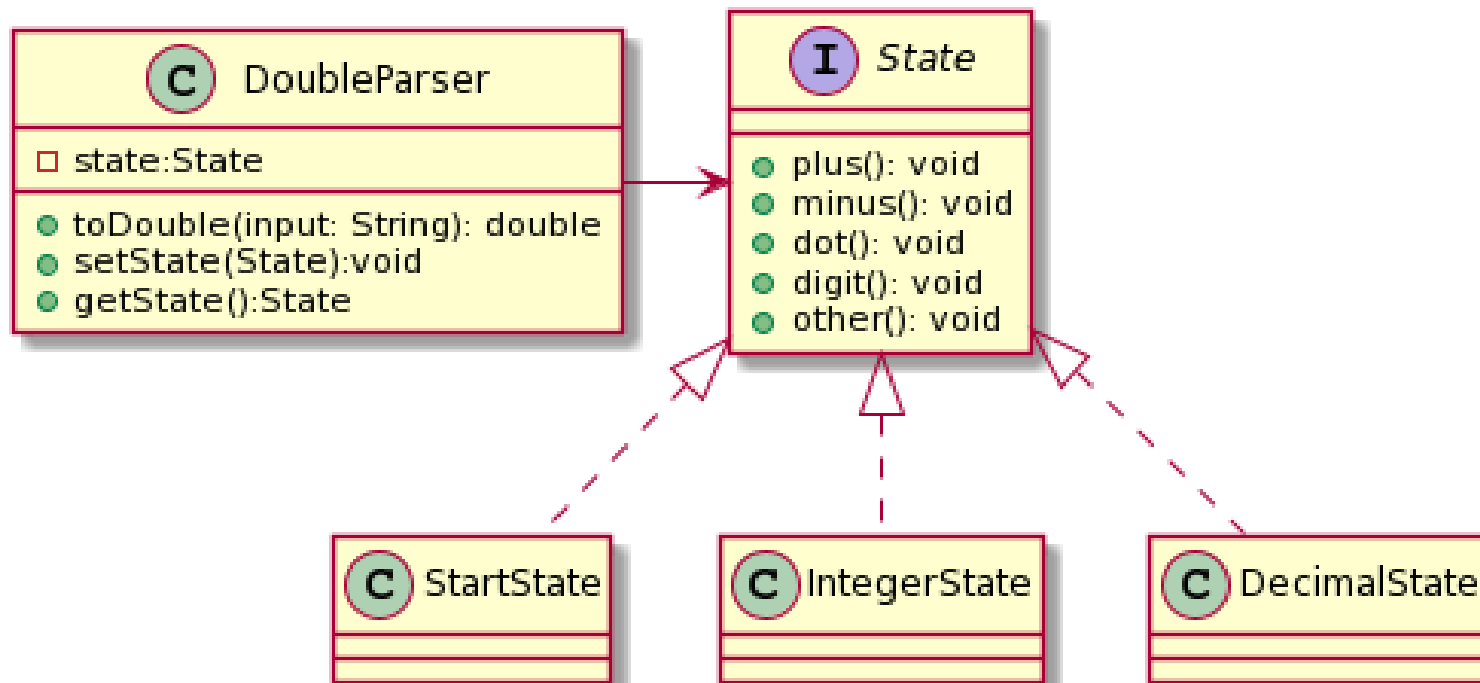
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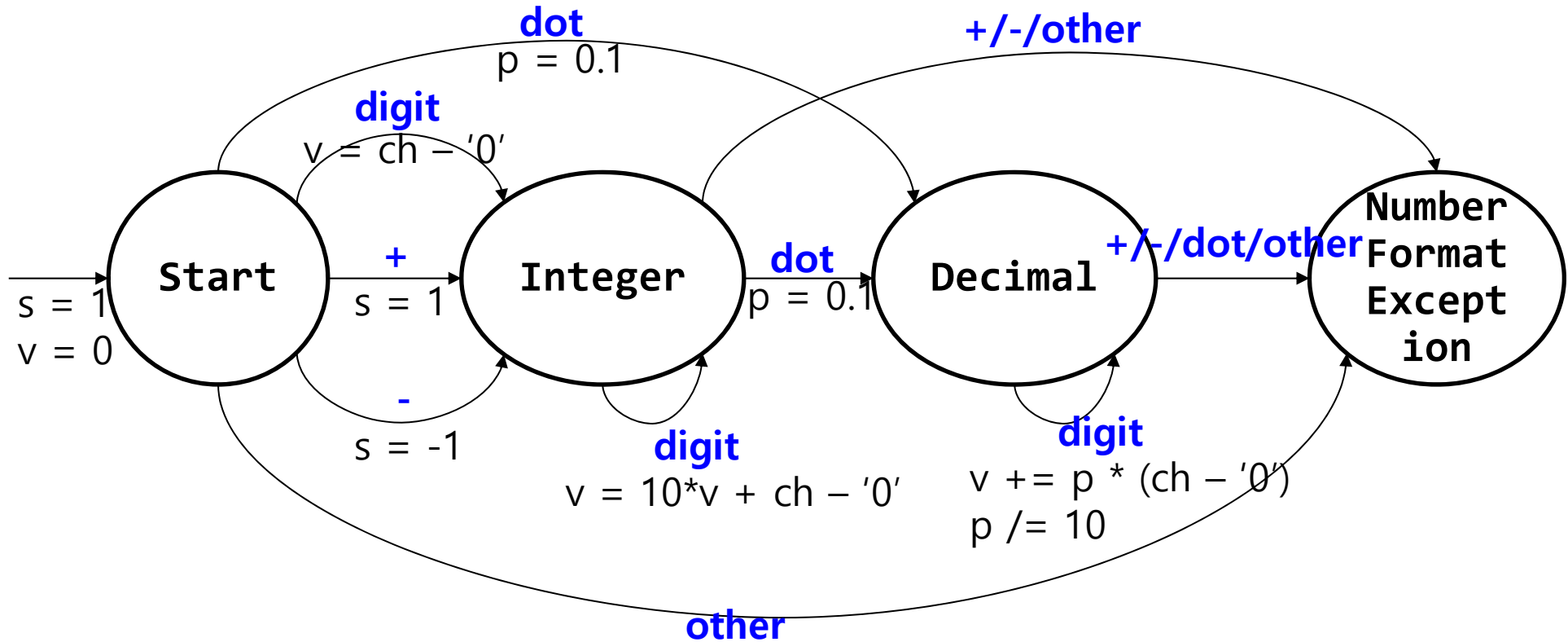
Lab9

- Practice to write a program that **parse** string to **double** value using **State pattern**.
 - **State interface**
 - **StateState, IntegerState, DecimalState**
 - **DoubleParser**



Lab9

DoubleParser Finite State Machine(FSM)



Lab9

□ DoubleParser

C DoubleParser
<ul style="list-style-type: none">□ startState: State□ integerState: State□ decimalState: State□ state: State□ sign: double□ value: double□ power: double□ ch: char
<ul style="list-style-type: none">■ init(): void● toDouble(input: String): double● setState(State):void● getState():State

```
void init() {
    sign = 1; value = 0; power = 0.1;
    ch = ' '; state = startState;
}
double toDouble(String str) {
    init();
    int i = 0;
    while (i < str.length()) {
        ch = str.charAt(i++);
        if (ch == '.') state.dot();
        else if (ch == '+') state.plus();
        else if (ch == '-') state.minus();
        else if (Character.isDigit(ch)) state.digit();
        else state.other();
    }
    return sign * value;
}
```

Lab9

□ State

State	+	-	.	digit	other
Start	Integer	Integer	Decimal	Integer	Error
Integer	Error	Error	Decimal	Integer	Error
Decimal	Error	Error	Error	Decimal	Error

Lab9

□ MainTest class

■ main() method

1. Test DoubleParser's toDouble() method using at least 10 different values ".1234567", "-.45", "12abc", "ab45", "12.-3", "1+2", "143e-3", "12..", "12.", "-25.78", "+25.78",
2. And your code...

Submit to e-learning

- Add your code (e.g., additional method, class, routine, etc) in the Lab9 assignment.
- Submit the Lab9 assignment (JAVA20-2-Lab9-ID-name.zip including the report) to e-learning.