

# CS375 WK7

Jason N Mansfield

August 21, 2011

```
graph TD
    START([START]) --> D1{READ}
    D1 -- c --> D2{READ}
    D1 -- d --> D3{READ}
    D2 -- c --> ACCEPT([ACCEPT])
    D2 -- d --> D3
    D3 -- c --> D2
    D3 -- d --> REJECT1([REJECT])
    D4{READ} --> D5{READ}
    D4 -- d --> D6{READ}
    D5 -- c --> REJECT2([REJECT])
    D5 -- d --> D6
    D6 -- c --> D5
    D6 -- d --> REJECT3([REJECT])
    REJECT1 -- Δ --> D4
    REJECT2 -- Δ --> D4
    REJECT3 -- Δ --> D4
```

Figure 3: Q02: FA

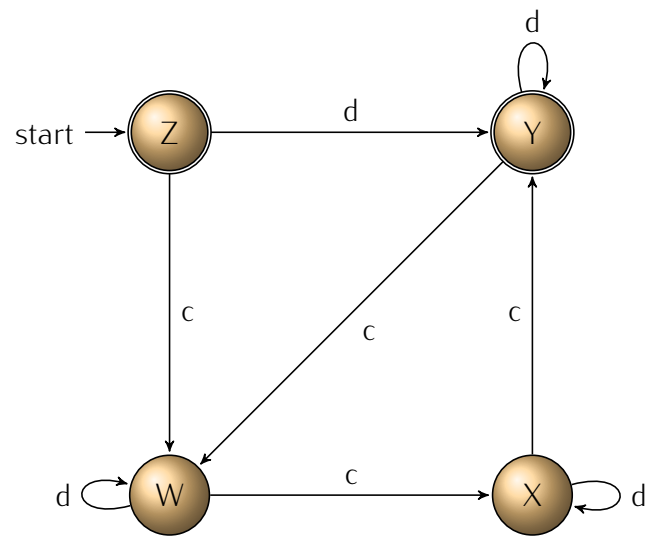


Figure 4: Q02: PDA

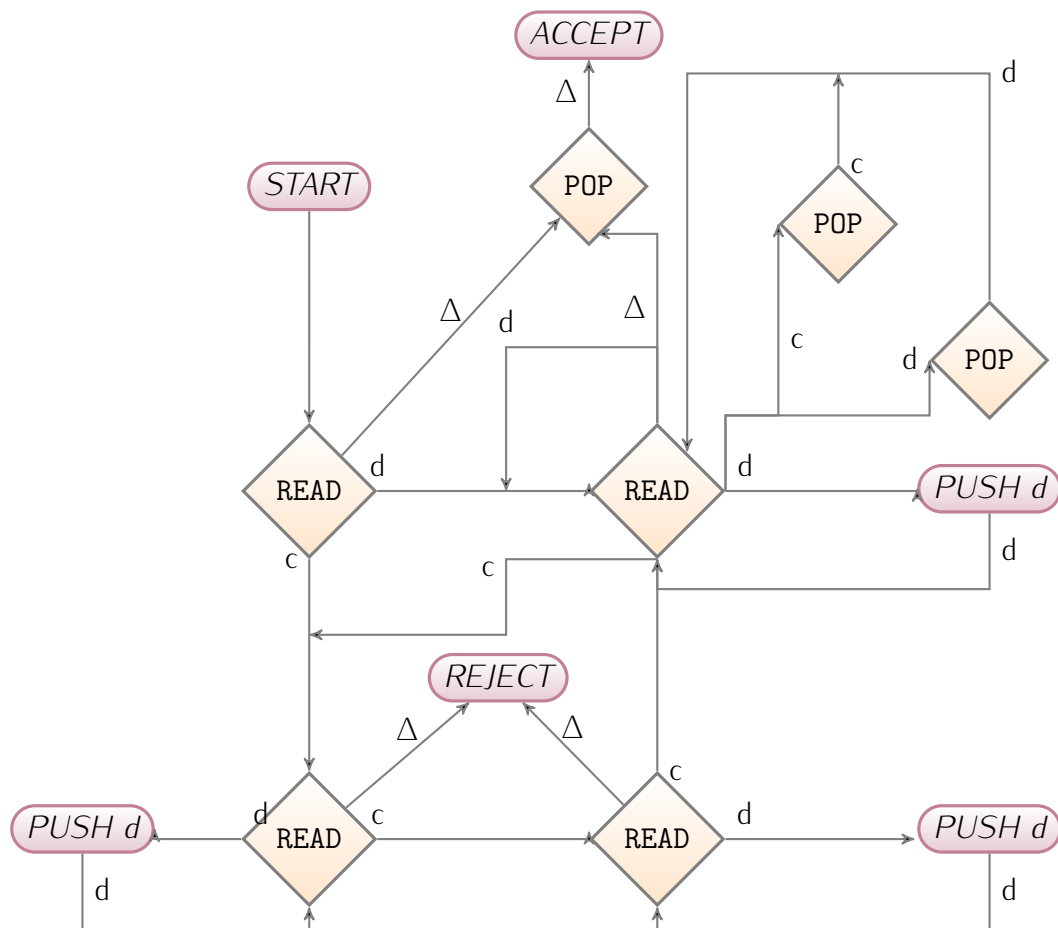
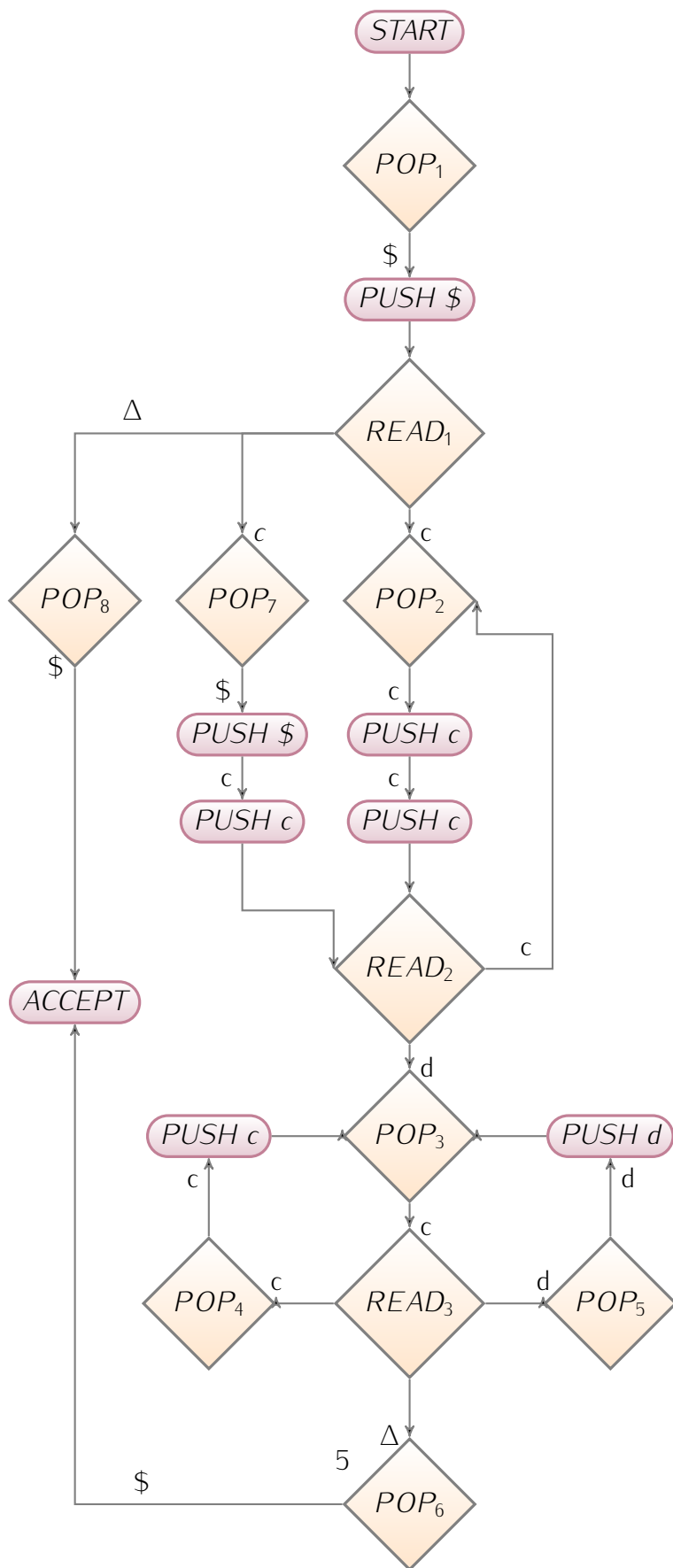


Figure 5: Q03a: Conversion Form



**Figure 6:** Q03.a Summary Table

FROM Where	To Where	READ What	POP What	PUSH What	ROW Number
START	$READ_1$	$\Lambda$	\$	\$	1
$READ_1$	ACCEPT	$\Lambda$	\$	-	2
$READ_1$	$READ_2$	c	\$	c\$	3
$READ_1$	$READ_2$	c	c	cc	4
$READ_2$	$READ_2$	c	c	cc	5
$READ_2$	$READ_3$	d	c	-	6
$READ_3$	$READ_3$	c	cc	c	7
$READ_3$	$READ_3$	d	dc	d	7
$READ_3$	ACCEPT	$\Lambda$	\$	-	8

**Figure 7:** Q03.a Productions

Rule 1:  $S \rightarrow Net(START, ACCEPT, \$)$

Rule 2:

$Net(READ_1, ACCEPT, \$) \rightarrow Row_2$

$Net(READ_2, READ_3, \$) \rightarrow Row_6$

$Net(READ_3, ACCEPT, \$) \rightarrow Row_8$

Rule 3:

$Row_1 \rightarrow \Lambda$

$Row_2 \rightarrow \Lambda$

$Row_3 \rightarrow c$

$Row_4 \rightarrow c$

$Row_5 \rightarrow c$

$Row_6 \rightarrow d$

$Row_7 \rightarrow c$

$Row_8 \rightarrow c$

Figure 8: Q03.b

STATE	STACK	TAPE
Start	$\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
$Read_1$	$\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
Push	$c\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
$Read_2$	$c\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
Push	$cc\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
$Read_2$	$cc\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
Push	$ccc\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
$Read_2$	$ccc\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
Pop	$cc\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
$Read_3$	$cc\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
Pop	$c\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
$Read_3$	$c\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
Pop	$\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
$Read_3$	$\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
Pop	$\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
Accept	$\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>

Figure 9: Q03.c

STATE	STACK	TAPE
Start	$\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
$Read_1$	$\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
Push	$c\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
$Read_2$	$c\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
Push	$cc\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
$Read_2$	$cc\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
Push	$ccc\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
$Read_2$	$ccc\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
Pop	$cc\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
$Read_3$	$cc\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
Pop	$c\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
$Read_3$	$c\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
Pop	$\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
$Read_3$	$\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
Pop	$\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>
Accept	$\Delta$	<span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span> <span style="border: 1px solid black; padding: 0 2px;">c</span> <span style="border: 1px solid black; padding: 0 2px;">d</span>

Figure 10: Q03.d

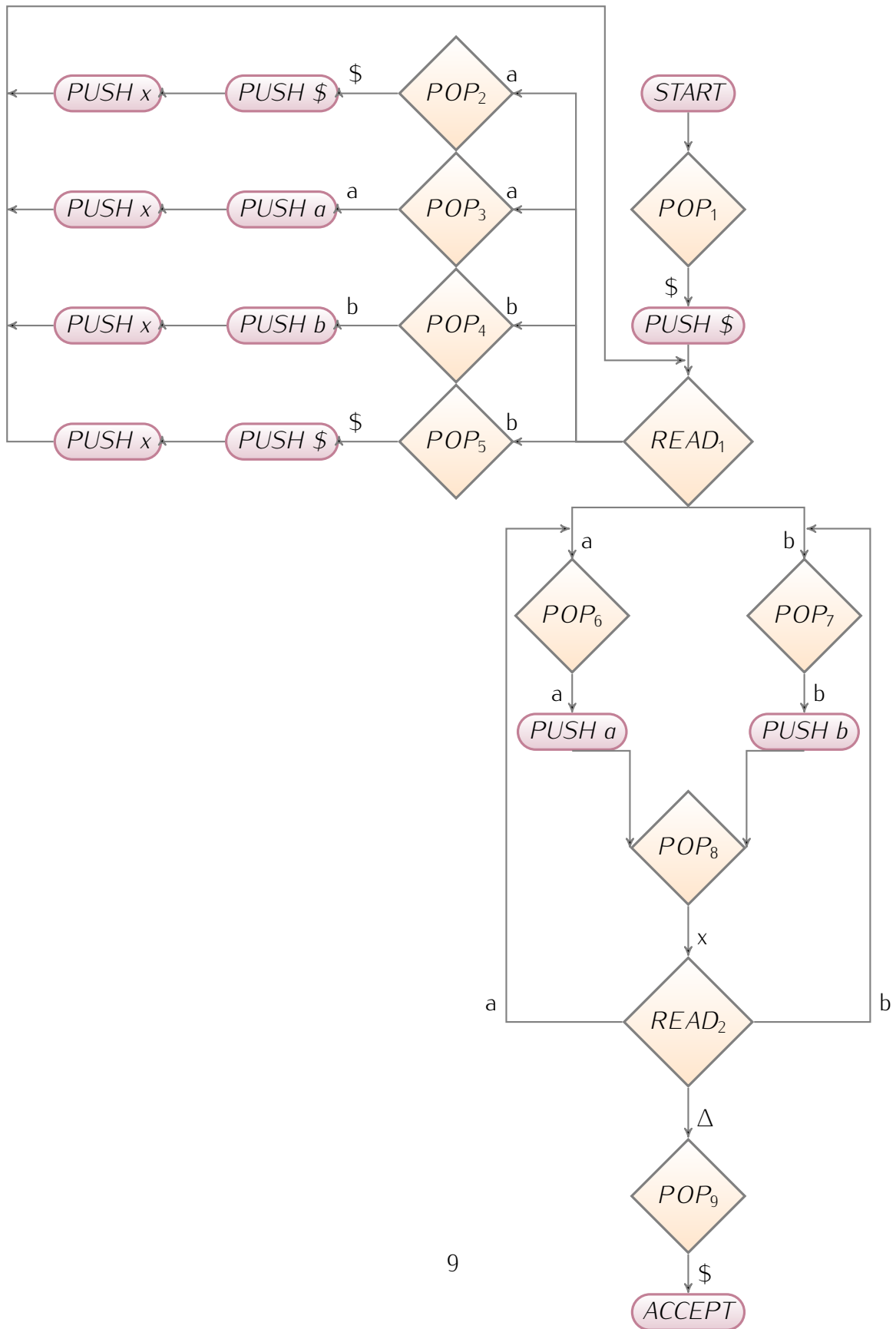
STATE	STACK	TAPE
Start	$\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span>
$Read_1$	$\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span>
Push	$c\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span>
$Read_2$	$c\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span>
Push	$cc\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span>
$Read_2$	$cc\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span>
Push	$ccc\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span>
$Read_2$	$ccc\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span>
Pop	$cc\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span>
$Read_3$	$cc\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span>
Pop	$c\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span>
$Read_3$	$c\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span>
Pop	$\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span>
$Read_3$	$\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span>
Pop	$\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span>
Accept	$\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span>

Figure 11: Q03.e

STATE	STACK	TAPE
Start	$\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span>
$Read_1$	$\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span>
Push	$c\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span>
$Read_2$	$c\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span>
Push	$cc\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span>
$Read_2$	$cc\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span>
Push	$ccc\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span>
$Read_2$	$ccc\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span>
Push	$cccc\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span>
$Read_2$	$cccc\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span>
Pop	$ccc\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span>
$Read_2$	$ccc\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span>
Pop	$cc\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span>
$Read_3$	$cc\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span>
Pop	$c\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span>
Reject	$c\Delta$	<span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">c</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span> <span style="border: 1px solid blue; padding: 0 2px;">a</span>



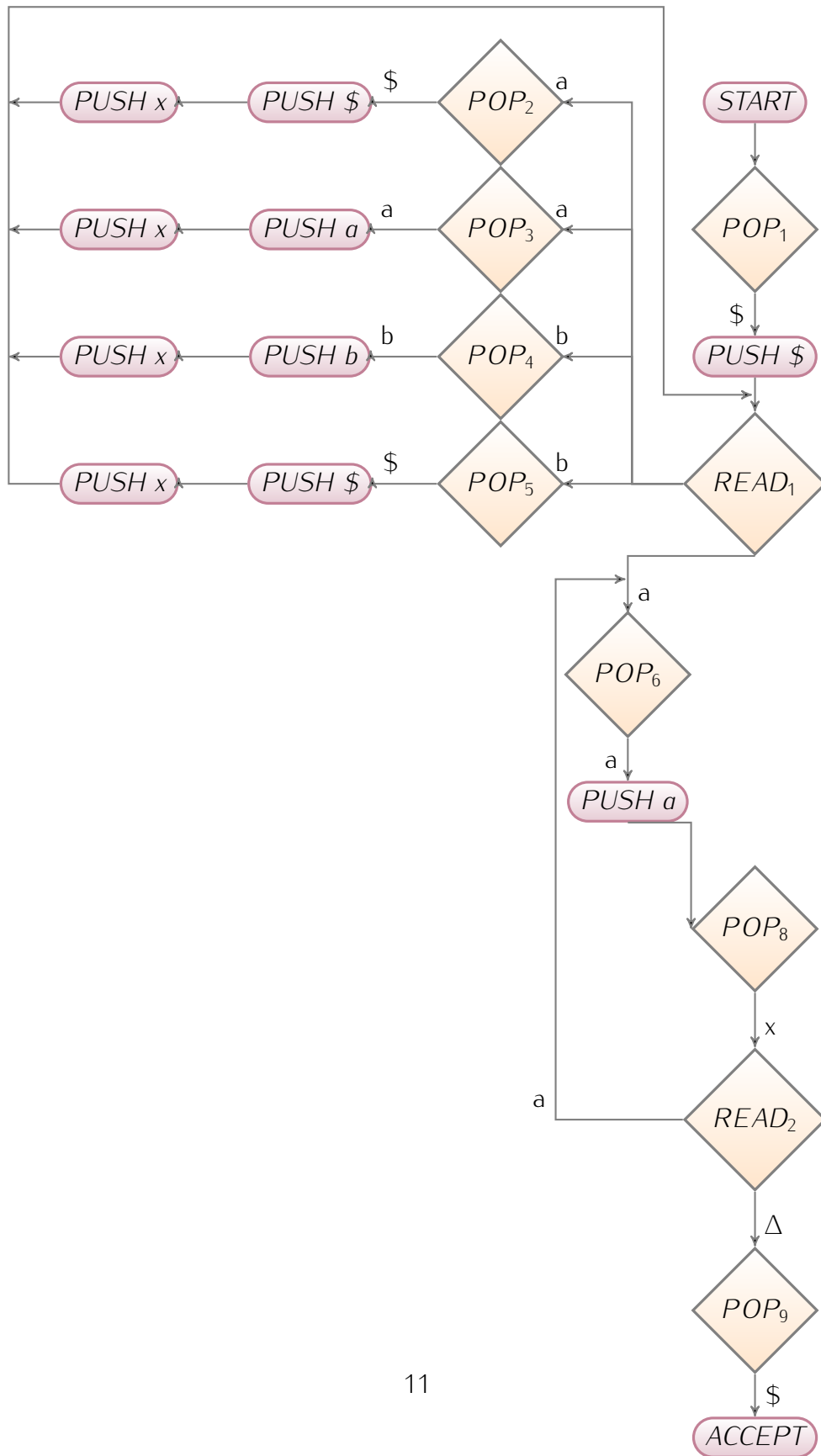
Figure 12: Q05-07: Conversion Form



**Figure 13:** Q05-07: Summary Table

FROM Where	To Where	READ What	POP What	PUSH What	ROW Number
START	$READ_1$	$\Lambda$	\$	\$	1

Figure 14: Q08-11: Conversion Form



**Figure 15:** Q08-11: Summary Table

FROM Where	To Where	READ What	POP What	PUSH What	ROW Number
START	$READ_1$	$\Lambda$	\$	\$	1