

Toc Assignment - 3

S20180010158

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Q-1. $S_1 = 0001000$

$q_0 0001000 + Bq_1 001000 + Bq_1 01000$

$+ B00q_1 1000 + B001q_2 000 + B00q_3 1100 + B0q_3 01100$

$+ Bq_3 001100 + q_3 B001100 + Bq_0 001100 + BBq_1 01100$

$+ BB0q_1 1100 + BB01q_2 100 + BB011q_2 00 + BB01q_3 110$

$+^* BBq_0 01110 + BBBq_1 1110 + BBB1q_2 110 +^* BBB11q_2 10 +$

$BBB111q_2 0 + BBB11q_3 11 +^* BBBq_0 1111 + BBBBq_5 111 +$

$BBBBBq_5 11 + BBBBq_5 1 + BBBBq_5 - + BBBBq_6$

$S_2 = 00001000$

$q_0 00001000 + Bq_1 0001000 + B0q_1 001000 + B00q_1 01000 +$

$B000q_1 1000 + B0001q_2 000 + B000q_3 1100 +^* Bq_0 0001100 +$

$BBq_1 001100 + BB0q_1 01100 + BB00q_1 1100 + BB001q_2 100 +$

$BB0011q_2 00 + BB001q_3 110 +^* BBq_0 001110 + BBq_1 01110 +$

$BBB0q_1 1110 + BBB01q_2 110 + BBB011q_2 10 + BBB0111q_2 0 +$

$BBB011q_3 11 +^* BBBq_0 01111 + BBBBq_1 1111 + BBBB1q_2 111 +$

$BBBB11q_2 11 + BBBB111q_2 1 + BBBB1111q_2 + BBBB111q_4 8$

$+ BBBB1110q_6$

Q-2 Next Page

Q-2 $S_3 = 1110000$

$q_0 1110000$

↓

$0q_1 110000 \rightarrow q_0 0110000 \rightarrow 0q_0 110000 \rightarrow [00q_1 10000] \textcircled{a}$

↓

$01q_1 10000 \rightarrow 0q_0 110000 \rightarrow [00q_1 10000] \textcircled{u}$

↓

$011q_1 0000$

↓

$0110q_1 000$

↓

$01100q_1 00$

↓

$011000q_1 0$

↓

$0110000q_1 \beta$

↓

$01100000q_2$

(accept)

↓

$01100q_0 00$

↓

$01100q_0 0$

↓

$0110011q_0$

(Stuck)

↓

$011q_0 0000$

↓

$0111q_0 000$

↓

$01111q_0 00$

↓

$011111q_0 0$

↓

$0111111q_0$

(Stuck)

$01q_0 10000$

↓

$010q_1 0000$

↓

$0100q_1 000$

↓

$01000q_1 00$

↓

$010000q_1 0$

↓

$0100000q_1 \beta$

↓

$01000000q_2$

(accept)

$01q_0 00000$

↓*

$0111111q_0$

(Stuck)

↓*

$0101111q_0$

(Stuck)

↓*

$0100111q_0$

(Stuck)

↓*

$0100011q_0$

(Stuck)

$\textcircled{a} 00q_1 10000$

↓

$001q_1 0000 \rightarrow 00q_0 10000 \rightarrow 000q_1 0000$

↓

$0010q_1 000 \rightarrow 0011111q_0$

↓

$00100q_1 00 \rightarrow 0010111q_0$

↓

$001000q_1 0 \rightarrow 0010011q_0$

↓

$0010000q_1 \beta$

↓

$00100000q_2$

(accept)

↓*

$0011111q_0$

(Stuck)

↓*

$0010111q_0$

(Stuck)

↓*

$0010011q_0$

(Stuck)

↓

$0000q_1 000$

↓

$00000q_1 00$

↓

$00q_0 0$

↓

$00q_0 0$

(accept)

$\textcircled{u} 00q_1 10000$

↓

$001q_1 0000 \rightarrow 00q_0 10^4 \rightarrow 0^3q_1 0^5 \rightarrow 0^7q_2$

↓

$0010q_1 000 \rightarrow 0011111q_0$

↓

$00100q_1 00 \rightarrow 0010111q_0$

↓

$001000q_1 0 \rightarrow 0010011q_0$

↓

$0010000q_1 \beta$

↓

$00100000q_2$

(accept)

↓*

$0011111q_0$

(Stuck)

↓*

$0010111q_0$

(Stuck)

↓*

$0010011q_0$

(Stuck)

$$S_4 = 11000$$

q₀ 11000



0q₁1000 → 0q₀01000 → 0q₀1000 → [00q₁000] Down



01q₁000



010q₁00



0100q₁0



01000q₁β



010000q₁z

(accept)

010q₀00



0101q₀0



01011q₀

(stuck)



01q₀000



011q₀00



0111q₀0



01111q₀

(stuck)

0q₀1000



00q₁000



000q₁00



0000q₁0



00000q₁β



000000q₁z

(accept)

0q₀0000 →

01q₀000 → 011q₀00

→ 0111q₀0

→ 01111q₀ (stuck)

00q₀000

↓

001q₀00

↓

0000011q₀0

↓

00111q₀

(stuck)

000q₀000

↓

0001q₀0 → 00011q₀

(stuck)

Continuing

000q₁000



0000q₁00



00000q₁0



000000q₁β



0000000q₁z

(accept)

000q₀00

↓

0001q₀0

↓

00011q₀

(stuck)

00q₀000

↓

001q₀00

↓

0011q₀0

↓

00111q₀

stuck

~~00q₁~~

0q₀0000

↓

01q₀000

↓

011q₀00

↓

0111q₀0

↓

01111q₀

(stuck)