BİÇİMSEL DİLLER VE OTOMATA TEORİSİ

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3.3.1.a

Giriş aba'sındaki olası hesaplamalar

$(s, aba, e) \vdash_M (f, ba, e)$
$(s, aba, e) \vdash_M (s, ba, a) \vdash_M (s, e, aaa)$
$(s, aba, e) \vdash_M (s, ba, a) \vdash_M (f, e, aa)$

3.3.1.b

Giriş aa'sındaki olası hesaplamalar

$(s, aa, e) \vdash_M (s, a, a) \vdash_M (s, e, aa)$
$(s, aa, e) \vdash_M (s, a, a) \vdash_M (f, e, a)$
$(s, aa, e) \vdash_M (f, a, e)$

Giriş abb'sindeki olası hesaplamalar

$(s, abb) \vdash_M (f, bb, e)$
$(s, abb) \vdash_M (s, bb, a) \vdash_M (s, b, aa) \vdash_M (s, e, aaa)$

Bu hesaplamaların hiçbirini kabul etmiyor. Bu yüzden M herhangi bir aba, aa, abb dizesini kabul etmiyor.

Ancak,

$(s, baa, e) \vdash_M (s, aa, a) \vdash_M (f, a, a) \vdash_M (f, e, e)$
$(s, bab, e) \vdash_M (s, ab, a) \vdash_M (f, b, a) \vdash_M (f, e, e)$
$(s, baaaa, e) \vdash_M (s, aaaa, a) \vdash_M (s, aaa, aa) \vdash_M (f, aa, aa)$
$\vdash_M (f, a, a) \vdash_M (f, e, e)$

Şahibiz.
Böylece baa, bab ve baaaa $L(M)$'dedir.

Problem 3.3.2

(a) $M = (K, \Sigma, \Gamma, \Delta, s, F)$

$K = \{s, f\}$
$\Sigma = \{(,)\}$
$\Gamma = \{(, \Gamma\}$
$F = \{q\}$
$\Delta = \{((q, (, e), (q, ()),$
$((q,), (), (q,)),$
$((q, \Gamma, e), (q, \Gamma)),$
$((q,), \Gamma), (q, e))\}.$

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Problem 3.3.2

(b) $M=(K,\Sigma,\Gamma,\Delta,q,F)$

$K=\{q,r\}$
$\Sigma=\{a,b\}$
$\Gamma=\{a\}$
$F=\{r\}$
$\Delta=\{((q,a,e),(q,aa)),$
$((q,a,e),(q,a)),$
$((q,e,e),(r,e)),$
$((r,b,a),(r,e))\}$

(c) $M=(K,\Sigma,\Gamma,\Delta,s,F)$

$K=\{q,r\}$
$\Sigma=\{a,b\}$
$\Gamma=\{a,b\}$
$F=\{r\}$
$\Delta=\{((q,a,e),(q,a)),$
$((q,b,e),(q,b)),$
$((q,e,e),(r,e)),$
$((q,a,e),(r,e)),$
$((q,b,e),(r,e)),$
$((r,a,a),(r,e)),$
$((r,b,b),(r,e))\}$

(d) $M=(K,\Sigma,\Gamma,\Delta,s,F)$

$K=\{q\}$
$\Sigma=\{a,b\}$
$\Gamma=\{A,a,b\}$
$F=\{q\}$
$\Delta=\{((q,a,e),(q,A)),$
$((q,b,e),(q,b)),$
$((q,a,b),(q,a)),$
$((q,b,A),(q,a)),$
$((q,b,a),(q,e))\}$

Problem 3.6.1

$M=(\{p,q\},\{(,)\},\{(,),S\},\Delta,p,\{q\})$

$\Delta=\{((p,e,e),(q,S)),((q,e,S),(q,SS)),((q,e,S),(q,(S))),$
$((q,e,S),(q,e)),((q,(,(),(q,e)),((q,),)),(q,e))\}$

$(p,(()())e) \vdash_M (q,(()()),S)$
$\vdash_M (q,(()()),(S))$
$\vdash_M (q,(()()),S))$
$\vdash_M (q,(()()),SS))$
$\vdash_M (q,(()()),(S)S))$
$\vdash_M (q,()()),)S))$
$\vdash_M (q,()),S))$
$\vdash_M (q,()),(S)))$
$\vdash_M (q,)),S)))$
$\vdash_M (q,)),)))$
$\vdash_M (q,),))$
$\vdash_M (q,e,e)$