Sarp
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BİÇİMSEL DİLLER VE OTOMATA TEORİSİ
FİNAL ÖDEV 5-

Problem 6.1.2

(a) $(q_0, \triangleright ab\underline{b}\sqcup bb\sqcup\sqcup\sqcup aba) \vdash_M (q_0, \triangleright abb\underline{\sqcup}bb\sqcup\sqcup\sqcup aba)$
$\vdash_M (q_0, \triangleright abb\sqcup\underline{b}b\sqcup\sqcup\sqcup aba)$
$\vdash_M (q_0, \triangleright abb\sqcup b\underline{b}\sqcup\sqcup\sqcup aba)$
$\vdash_M (q_0, \triangleright abb\sqcup bb\underline{\sqcup}\sqcup\sqcup aba)$
$\vdash_M (q_0, \triangleright abb\sqcup bb\sqcup\underline{\sqcup}\sqcup aba)$
$\vdash_M (q_0, \triangleright abb\sqcup bb\sqcup\sqcup\underline{\sqcup} aba)$
$\vdash_M (q_0, \triangleright abb\sqcup bb\sqcup\sqcup\sqcup \underline{a}ba)$
$\vdash_M (q_1, \triangleright abb\sqcup bb\sqcup\sqcup\underline{\sqcup} aba)$
$\vdash_M (q_1, \triangleright abb\sqcup bb\sqcup\underline{\sqcup}\sqcup aba)$
$\vdash_M (q_1, \triangleright abb\sqcup bb\underline{\sqcup}\sqcup\sqcup aba)$
$\vdash_M (q_1, \triangleright abb\sqcup b\underline{b}\sqcup\sqcup\sqcup aba)$
$\vdash_M (q_2, \triangleright abb\sqcup\underline{b}b\sqcup\sqcup\sqcup aba)$
$\vdash_M (h, \triangleright abb\sqcup bb\underline{\sqcup}\sqcup\sqcup aba)$

(b) M, bir a bulana kadar sağa tarar, sonra a b bulana kadar sola, sonra a ⊔ bulana kadar tekrar sağa tarar ve sonra durur.

Problem 6.1.3

(a) $(q_0, \triangleright \underline{a}aabbbaa) \vdash_M (q_2, \triangleright a\underline{a}abbbaa)$
$\vdash_M (q_1, \triangleright aab\underline{b}bbaa)$
$\vdash_M (q_2, \triangleright aa\underline{b}bbbaa)$
$\vdash_M (q_1, \triangleright aabb\underline{b}bbaa)$
$\vdash_M (q_2, \triangleright a\underline{b}bbbbaa)$
$\vdash_M (q_3, \triangleright aabb\underline{a}bbaa)$
$\vdash_M (q_4, \triangleright aabba\underline{b}baa)$
$\vdash_M (q_4, \triangleright aabbab\underline{b}aa)$
$\vdash_M (q_4, \triangleright aabbabb\underline{a}a)$
$\vdash_M (q_2, \triangleright aabbabba\underline{a})$
$\vdash_M (q_1, \triangleright aabbabb\underline{a}b)$
$\vdash_M (q_2, \triangleright aabbabba\underline{b}\sqcup)$
$\vdash_M (h, \triangleright aabbabba\underline{\sqcup})$

(b) Özellikle karmaşık olmasada, bu Turing makinelerinin eylemleri, belirli bir hesaplamaya ilgili olan δ'nın gösterimini basitçe listelemekten çok daha resmi bir şekilde tanımlanamaz.