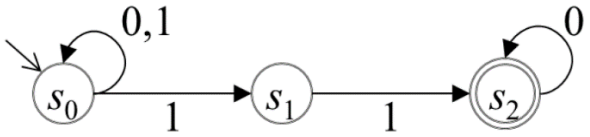
オートマトンと言語　演習問題

276156 根本 貴大

問3. 入力記号の有限集合Σ={0,1}とする．また，NFA $M_3=(Q, \Sigma, \delta, q_0, F)$は次の図示表現で与えられるとする．非決定性有限オートマトンを，部分集合構成法を用いて決定性有限オートマトンに返還せよ．解答にあたっては，最終的な決定性有限オートマトンのみではなく，解答に至る過程を理解できるように記述すること．



Q = {φ, {s_0}, {s_1}, {s_2}, {s_0, s_1}, {s_0, s_2}, {s_1, s_2,}, {s_0, s_1, s_2}}
F = {{s_2}, {s_0, s_2}, {s_1, s_2}, {s_0, s_1, s_2}}
δ = (φ, 0) = {φ}, (φ, 1) = {φ}
((s_0, 0) = {s_0}, (s_0, 1) = {s_0}
(s_1, 0) = {φ}, (s_1, 1) = {s_2}
(s_2, 0) = {s_2}, (s_2, 1) = {φ}
((s_0, s_1), 0) = {s_0}, ((s_0, s_1), 1) = {s_0, s_1, s_2}
((s_0, s_2), 0) = {s_0, s_2}, ((s_0, s_2) , 1) = {s_0, s_1}
((s_1, s_2,), 0) = {s_2}, ((s_1, s_2,) , 1) = {s_2}
((s_0, s_1, s_2) , 0) = {s_0, s_2}, ((s_0, s_1, s_2) , 1) = {s_0, s_1, s_2}

NFA M

	0	1
→s_0	{s_0}	{s_0, s_1}
s_1	{φ}	{s_2}
*s_2	{s_2}	{φ}

DFA M

	0	1
{φ}	{φ}	{φ}
→{s_0}	{s_0}	{s_0, s_1}
{s_1}	{φ}	{s_2}
{s_2}	{s_2}	{φ}
{s_0, s_1}	{s_0}	{s_0, s_1, s_2}
{s_0, s_2}	{s_0, s_2}	{s_0, s_1}
{s_1, s_2,}	{s_2}	{s_2}
{s_0, s_1, s_2}	{s_0, s_2}	{s_0, s_1, s_2}