Rajshahi University of Engineering & Technology
Department of Computer Science and Engineering

Compiler
Lexical Analysis

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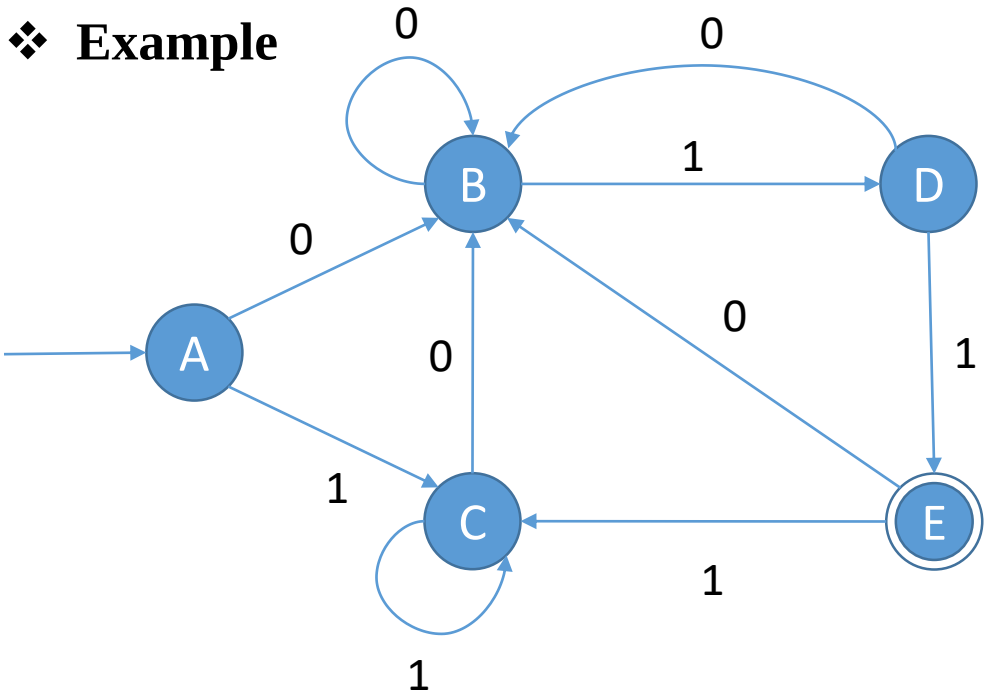
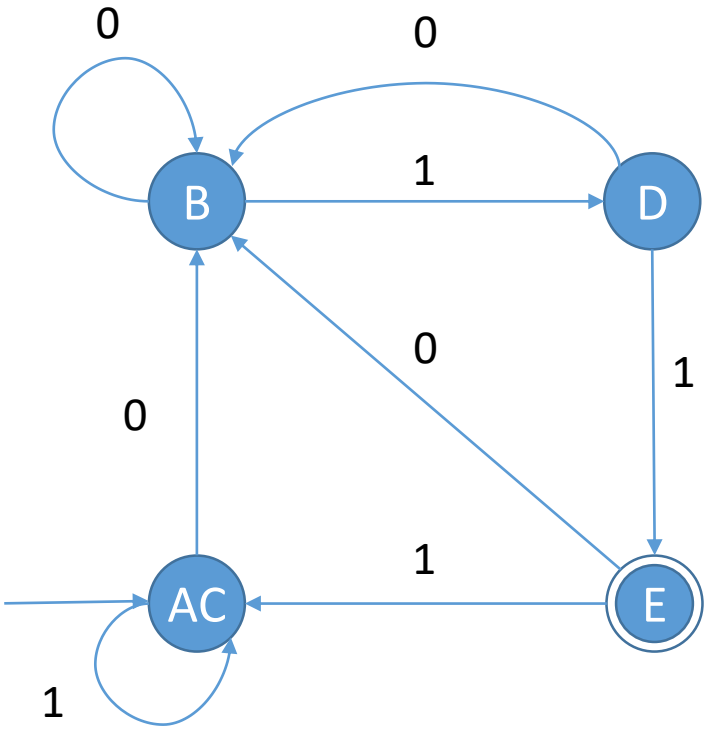
❖ **Example**

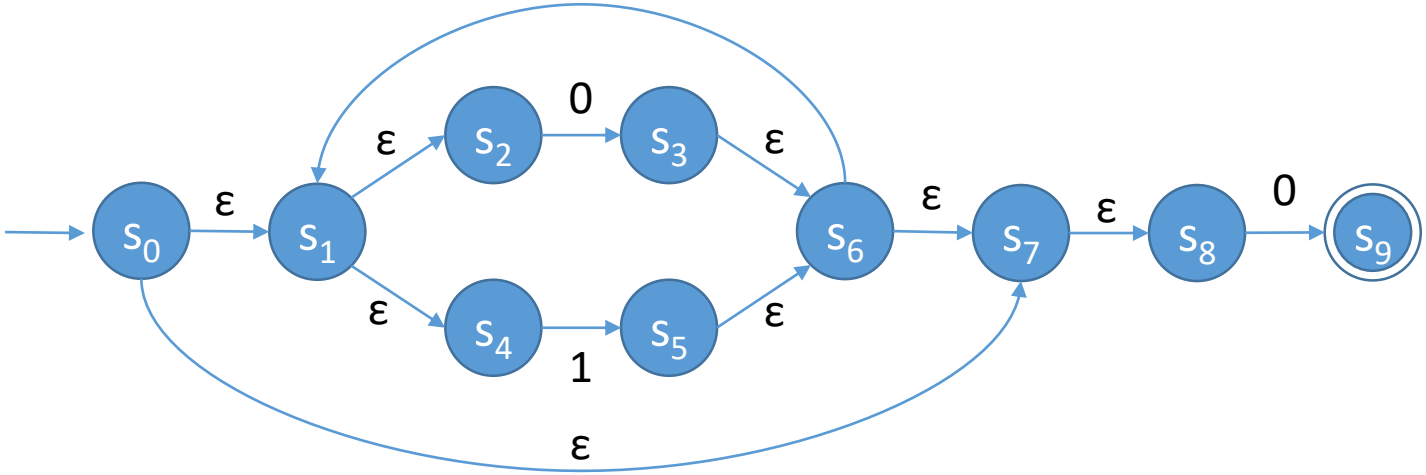


0 Equivalence: {A, B, C, D} {E}
1 Equivalence: {A, B, C} {D} {E}
2 Equivalence: {A, C} {B} {D} {E}
3 Equivalence: {A, C} {B} {D} {E}



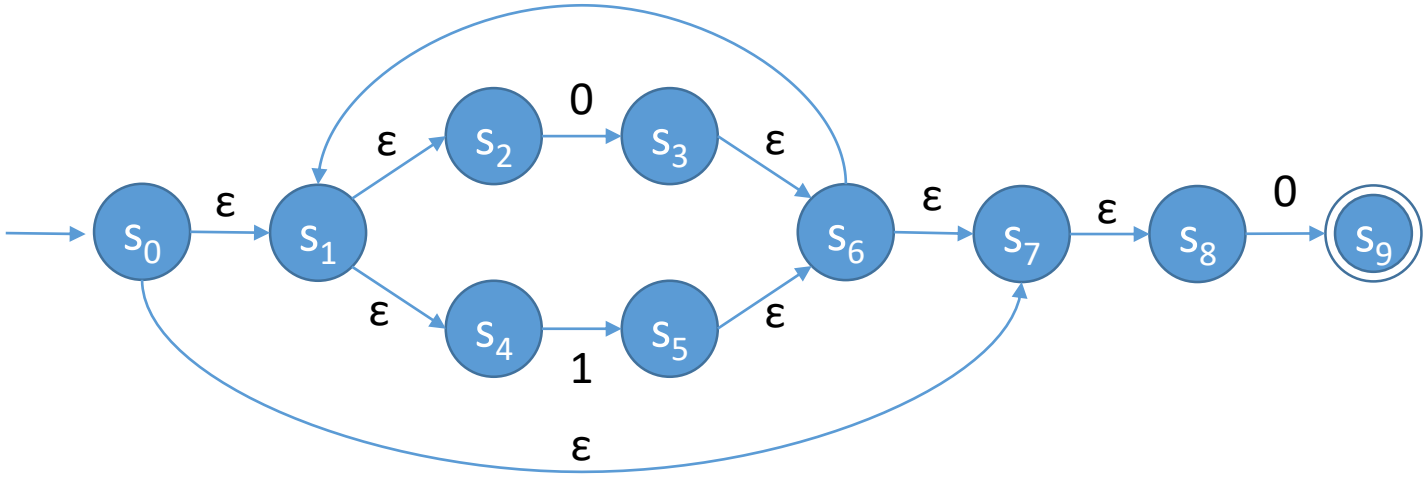
❖ Example

- Language: All binary even number
- Regular Expression: (0|1)*0
- NFA:



❖ Example

- DFA:



	Epsilon closure	0	1
s_0	{s0, s1, s2, s4, s7, s8}	{s3, s6, s1, s2, s4, s7, s8, s_9}	{s5, s6, s1, s2, s4, s7, s8}
{s3, s6, s1, s2, s4, s7, s8, s9}	{s3, s6, s1, s2, s4, s7, s8, s9}	{s3, s6, s1, s2, s4, s7, s8, s9}	{s5, s6, s1, s2, s4, s7, s8}
{s5, s6, s1, s2, s4, s7, s8}	{s5, s6, s1, s2, s4, s7, s8}	{s3, s6, s1, s2, s4, s7, s8, s9}	{s5, s6, s1, s2, s4, s7, s8}

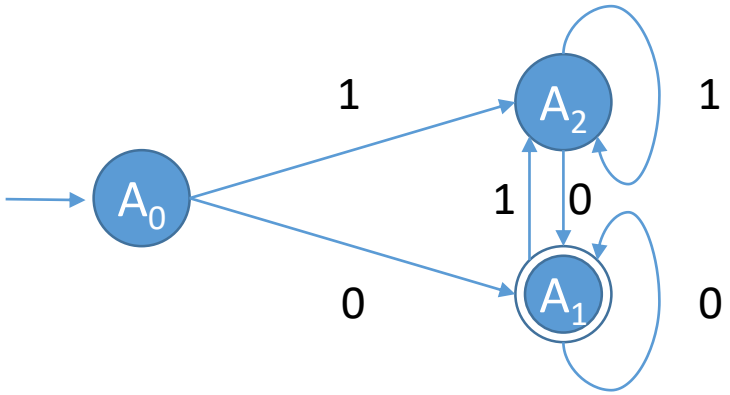
❖ Example

- DFA:

A_0 = {s0, s1, s2, s4, s7, s8}

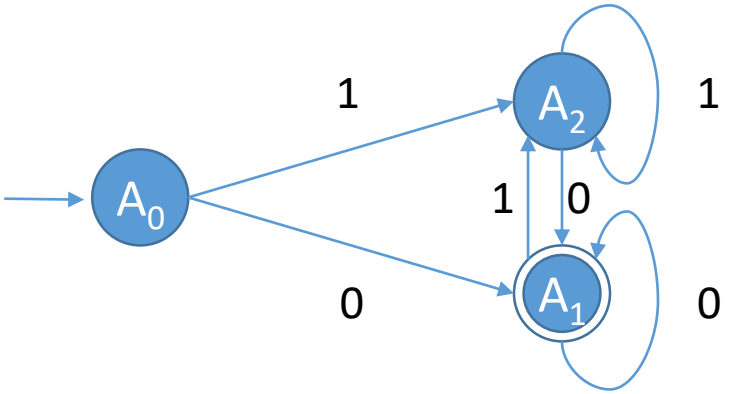
A_1 = {s3, s6, s1, s2, s4, s7, s8, s9}

A_2 = {s5, s6, s1, s2, s4, s7, s8}

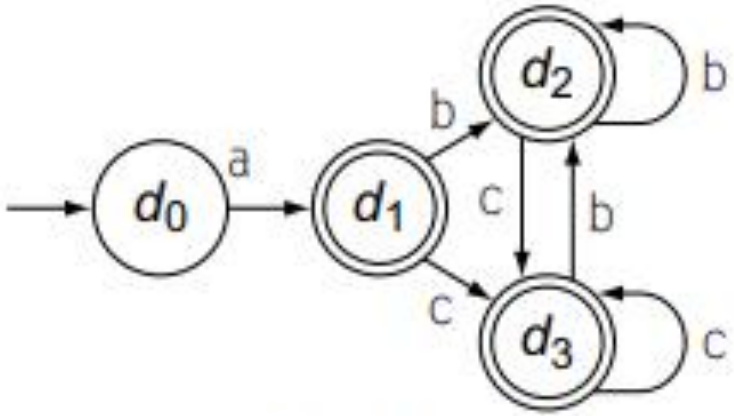


❖ Example

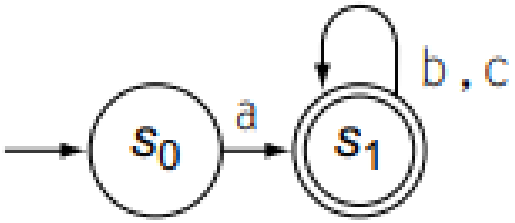
- Minimized DFA:



0 equivalence: $\{A_0, A_2\}\ \{A_1\}$
1 equivalence: $\{A_0, A_2\}\ \{A_1\}$



(a) Resulting DFA



(b) Minimized DFA