1) Dado el siguiente autómata:

Diagrama

Descripción generada automáticamente



Hallar el AFD mínimo.

Armamos la cláusula de estados:

|  |  |
| --- | --- |
|  | λ |
| 🡪p | p,q,r |
| q | q,r |
| r | r,q |
| \*s | s |

Quitando la columna landa, copiamos las cláusulas de cada estado al que se llega en cada entrada.

|  |  |  |
| --- | --- | --- |
|  | a | b |
| 🡪p | q,r,s | p,q,r |
| q |  | q,r |
| r |  | p,q,r,s |
| \*s | s | q,r,s |

Tenemos el AFND

Realizamos el método para convertir el AFND en AFD

|  |  |  |
| --- | --- | --- |
|  | a | b |
| 🡪p | q,r,s | p,q,r |
| Q,r,\*s | s | P,q,r,s |
| P,q,r | Q,r,s | P,q,r,s |
| \*s | s | Q,r,s |
| P,q,r,\*s | Q,r,s | P,q,r,s |
| E | E | E |

{🡪p}🡪A

{\*q,r,s}🡪\*B

{p,q,r}🡪C

{\*s}🡪\*D

{\*p,q,r,s}🡪\*F

|  |  |  |
| --- | --- | --- |
|  | a | b |
| 🡪A | B | C |
| \*B | D | F |
| C | B | F |
| \*D | D | B |
| \*F | B | F |

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Obtenemos el AFD

Realizamos el método para minimizar el AFD

Q/E0={{A,C},{B,D,F}}

{A,C}🡪1

{B,D,F}🡪2

|  |  |  |
| --- | --- | --- |
|  | a | b |
| 🡪A | 2 | 1 |
| \*B | 2 | 2 |
| C | 2 | 2 |
| \*D | 2 | 2 |
| \*F | 2 | 2 |

Q/E1={{A},{C},{B,D,F}}

Q/E0≠Q/E1

{A}🡪3

{C}🡪4

{B,D,F}🡪5

|  |  |  |
| --- | --- | --- |
|  | a | b |
| 🡪A | 5 | 4 |
| \*B | 5 | 5 |
| C | 5 | 5 |
| \*D | 5 | 5 |
| \*F | 5 | 5 |

Q/E2={{A},{C},{B,D,F}}

Q/E1=Q/E2

{A}🡪G

{C}🡪H

{B,D,F}🡪I

|  |  |  |
| --- | --- | --- |
|  | a | b |
| 🡪G | I | H |
| H | I | I |
| \*I | I | I |

Obtenemos el AFD minimizado

Diagrama

Descripción generada automáticamente