Вариант 12 Задание 1

Преобразовать заданный автомат Мили в эквивалентный ему автомат Мура.



Для автомата , определить реакцию на входное слово.



Мили



Рис. (1) – Граф изначальный

S1={(S1,y2)}=S`1

S2={(S2,y1),(S2,y2)}=S`2, S`3

|  |  |
| --- | --- |
| σ | (S1,X2)=S2 |
| α | (S1,X2)=y1 |
| σ | (S2,X2)=S2 |
| α | (S2,X2)=y2 |
| σ | (S2,X1)=S3 |
| α | (S2,X1)=y1 |
| σ | (S3,X1)=S2 |
| α | (S3,X1)=y1 |
| σ | (S2,X2)=S2 |
| α | (S2,X2)=y2 |
| σ | (S2,X1)=S3 |
| α | (S2,X1)=y1 |

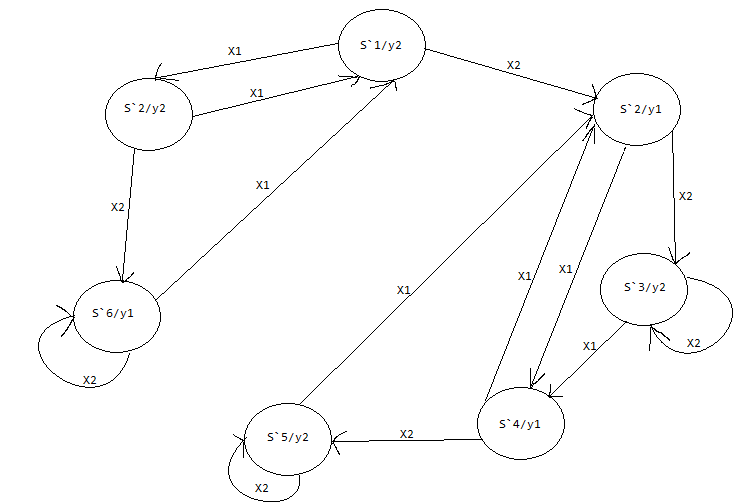
S3={(S3,y1),(S3,y2)}=S`4, S`5

S4={(S4,y1),(S4,y2)}=S`6, S`7

|  |  |  |  |
| --- | --- | --- | --- |
| Y |  | X1 | X2 |
| Y2 | S`1 | S`7 | S`3 |
| Y1 | S`2 | S`4 | S`2 |
| Y2 | S`3 | S`4 | S`3 |
| Y1 | S`4 | S`2 | S`5 |
| Y2 | S`5 | S`2 | S`5 |
| Y1 | S`6 | S`1 | S`6 |
| Y2 | S`7 | S`1 | S`6 |

|  |  |
| --- | --- |
| x1 | S`1=S`7 |
| x2 | S`1=S`2 |
| x1 | S`2,S`3=S`4 |
| x2 | S`2,S`3=S`3 |
| x1 | S`4,S`5=S`2 |
| x2 | S`4,S`5=S`5 |
| x1 | S`6,S`7=S`1 |
| x2 | S`6,S`7=S`6 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| X2 | X2 | X1 | X1 | X2 | X1 |  |
| S1 | S2 | S2 | S3 | S2 | S2 | S3 |
| y1 | y2 | y1 | y1 | y2 | y1 |  |

Мура

|  |  |
| --- | --- |
| σ | (S`1,X2)=S`2 |
| α | (S`2)=y1 |
| σ | (S`2,X`2)=S`3 |
| α | (S`3)=y2 |
| σ | (S`3,X1)=S`4 |
| α | (S`4)=y1 |
| σ | (S`4,X1)=S`2 |
| α | (S`2)=y1 |
| σ | (S`2,X2)=S`3 |
| α | (S`3)=y2 |
| σ | (S`3,X1)=S`4 |
| α | (S`4)=y1 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| X2 | X2 | X1 | X1 | X2 | X1 |  |
| S`1 | S`2 | S`3 | S`4 | S`2 | S`3 | S`4 |
| y2 | y1 | y2 | y1 | y1 | y2 | y1 |

Задание 2

Решения машины Тьюринга.

Условие машины Тьюринга MТ12.

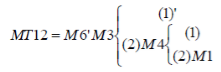


Таблица 2.1. Машина М1

|  |  |  |
| --- | --- | --- |
| M1 | 0 | 1 |
| A1 | 0RA1 | 0SA2 |
| A2 | 0SA0 | 1RA2 |

Таблица 2.2. Машина М3

|  |  |  |
| --- | --- | --- |
| M3 | 0 | 1 |
| C1 | 1RC1 | 0RC2 |
| C2 | 0SC0(1) | 1SC0(2) |

Таблица 2.3. Машина М4

|  |  |  |
| --- | --- | --- |
| M4 | 0 | 1 |
| D1 | 0RD2 | 1SD0(1 |
| D2 | 1LD1 | 1SD0(2) |

Таблица 2.4. Машина М6

|  |  |  |
| --- | --- | --- |
| M6 | 0 | 1 |
| F1 | 0LF1 | 1RF2 |
| F2 | 1RF1 | 0SF0 |

Таблица машины Тьюринга

|  |  |  |
| --- | --- | --- |
| MT | 0 | 1 |
| F1 | 0LF1 | 1RF2 |
| F2 | 1RF1 | 0SF0 |
| C1 | 1RC1 | 0RC2 |
| C2 | OSC0(1) | 1SC0(2) |
| D1 | ORD2 | 1SD0(1) |
| D2 | 1CD1 | 1SDO(2) |
| A1 | 0RA1 | 0SA2 |
| A2 | 0SA0 | 1RA2 |

Связная таблица Тьюринга

|  |  |  |
| --- | --- | --- |
| MT | 0 | 1 |
| F1 | 0LF1 | 1RF2 |
| F2 | 1RF1 | 0SF0 |
| C1 | 1RC1 | 0RC2 |
| C2 | OSF1 | 1SD1 |
| D1 | ORD2 | 1SD0 |
| D2 | 1CD1 | 1SA1 |
| A1 | 0RA1 | 0SA2 |
| A2 | 0SA0 | 1RA2 |

