EXPERIMENT 5

AIM

To convert epsilon-NFA to NFA.

ALGORITHM

1. Start
2. Check if there is at least one path from initial state to one of the many possible accepting states which can be traversed only by null transitions. If so, add the initial state to the set of accepting states.
3. Now, choose two states in e-NFA (let's call them p and q) having null transitions between them.
4. Remove the null transition.
5. Any incoming transition to p is to be added as an incoming transition to q.
6. Repeat steps 3,4,5 for all the null transitions in the e-NFA.
7. Stop

OUTPUT

```
enter the number of alphabets?
3
NOTE:- [ use letter e as epsilon]
NOTE:- [e must be last character ,if it is present]
Enter alphabets?
a
b
e
Enter the number of states?
5
Enter the start state?
1
Enter the number of final states?
1
Enter the final states?
3
Enter the number of transitions?
7
NOTE:- [Transition is in the form--> qno   alphabet   qno]
NOTE:- [States number must be greater than zero]

Enter transition?
1 a 2
1 e 3
2 a 1
```

3 b 4
4 b 3
3 a 5
5 b 3

Equivalent NFA without epsilon
---
start state:{q1,}
Alphabets:a b e
States :{q1,} {q2,} {q3,} {q4,} {q5,}
Transitions are...:

{q1,} a {q2,q5,}
{q1,} b {q4,}
{q2,} a {q1,q3,}
{q2,} b {}
{q3,} a {q5,}
{q3,} b {q4,}
{q4,} a {}
{q4,} b {q3,}
{q5,} a {}
{q5,} b {q3,}
Final states:{q1,} {q3,}

SCREENSHOT