Assignment -3

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Output:

Scenario -1: Deadlock-free

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∨ TERMINAL

PS C:\Users\kaavi\OneDrive\Desktop\CS 746 Software Modeling and Analysis\Assignment\Assign3> javac PetriNets.java
PS C:\Users\kaavi\OneDrive\Desktop\CS 746 Software Modeling and Analysis\Assignment\Assign3> java PetriNets
Enter number of places: 8
Enter place name and initial token count (e.g., p1 1): r1 1
Enter place name and initial token count (e.g., p1 1): r2 1
Enter place name and initial token count (e.g., p1 1): p1 1
Enter place name and initial token count (e.g., p1 1): p2 0
Enter place name and initial token count (e.g., p1 1): p3 0
Enter place name and initial token count (e.g., p1 1): p4 1
Enter place name and initial token count (e.g., p1 1): p5 0
Enter place name and initial token count (e.g., p1 1): p6 0
Enter number of transitions:6
Enter transition name:T1
Enter input places (add-space):p1 r1
Enter output places (add-space):p2
Enter transition name:T2
Enter input places (add-space):p2 r2
Enter output places (add-space):p3
Enter transition name:T3
Enter input places (add-space):p3
Enter output places (add-space):p1 r2 r1
Enter transition name:T4
Enter input places (add-space):p4 r1
Enter output places (add-space):p5
Enter transition name:T5
Enter input places (add-space):p5 r2
Enter output places (add-space):p6
Enter transition name:T6
Enter input places (add-space):p6
Enter output places (add-space):p4 r2 r1
Marking of the Petri Net <r1=1, r2=1, p1=1, p2=0, p3=0, p4=1, p5=0, p6=0>
Conflict detected between transitions: T1, T4
Enter the transition to fire: T1
Markings of the Petri Net <r1=0, r2=1, p1=0, p2=1, p3=0, p4=1, p5=0, p6=0>

Marking of the Petri Net <r1=0, r2=1, p1=0, p2=1, p3=0, p4=1, p5=0, p6=0>
Transitions T2 are enabled and so fired.
Markings of the Petri Net <r1=0, r2=0, p1=0, p2=0, p3=1, p4=1, p5=0, p6=0>
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Marking of the Petri Net <r1=0, r2=0, p1=0, p2=0, p3=1, p4=1, p5=0, p6=0>
Transitions T3 are enabled and so fired.
Markings of the Petri Net <r1=1, r2=1, p1=1, p2=0, p3=0, p4=1, p5=0, p6=0>

Marking of the Petri Net <r1=1, r2=1, p1=1, p2=0, p3=0, p4=1, p5=0, p6=0>
Conflict detected between transitions: T1, T4
Enter the transition to fire: T1
Markings of the Petri Net <r1=0, r2=1, p1=0, p2=1, p3=0, p4=1, p5=0, p6=0>

Marking of the Petri Net <r1=0, r2=1, p1=0, p2=1, p3=0, p4=1, p5=0, p6=0>
Transitions T2 are enabled and so fired.
Markings of the Petri Net <r1=0, r2=0, p1=0, p2=0, p3=1, p4=1, p5=0, p6=0>

Marking of the Petri Net <r1=0, r2=0, p1=0, p2=0, p3=1, p4=1, p5=0, p6=0>
Transitions T3 are enabled and so fired.
Markings of the Petri Net <r1=1, r2=1, p1=1, p2=0, p3=0, p4=1, p5=0, p6=0>

Marking of the Petri Net <r1=1, r2=1, p1=1, p2=0, p3=0, p4=1, p5=0, p6=0>
Conflict detected between transitions: T1, T4
Enter the transition to fire: T1
Markings of the Petri Net <r1=0, r2=1, p1=0, p2=1, p3=0, p4=1, p5=0, p6=0>

Marking of the Petri Net <r1=0, r2=1, p1=0, p2=1, p3=0, p4=1, p5=0, p6=0>
Transitions T2 are enabled and so fired.
Markings of the Petri Net <r1=0, r2=0, p1=0, p2=0, p3=1, p4=1, p5=0, p6=0>

Marking of the Petri Net <r1=0, r2=0, p1=0, p2=0, p3=1, p4=1, p5=0, p6=0>
Transitions T3 are enabled and so fired.
Markings of the Petri Net <r1=1, r2=1, p1=1, p2=0, p3=0, p4=1, p5=0, p6=0>

Marking of the Petri Net <r1=1, r2=1, p1=1, p2=0, p3=0, p4=1, p5=0, p6=0>
Conflict detected between transitions: T1, T4
Enter the transition to fire: T4
Markings of the Petri Net <r1=0, r2=1, p1=1, p2=0, p3=0, p4=0, p5=1, p6=0>

Marking of the Petri Net <r1=0, r2=1, p1=1, p2=0, p3=0, p4=0, p5=1, p6=0>
Transitions T5 are enabled and so fired.
Markings of the Petri Net <r1=0, r2=0, p1=1, p2=0, p3=0, p4=0, p5=0, p6=1>
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Scenario - 2: Deadlock

TERMINAL

PS C:\Users\kaavi\OneDrive\Desktop\CS 746 Software Modeling and Analysis\Assignment\Assign3> javac PetriNets.java
PS C:\Users\kaavi\OneDrive\Desktop\CS 746 Software Modeling and Analysis\Assignment\Assign3> java PetriNets
Enter number of places: 8
Enter place name and initial token count (e.g., p1 1): r1 1
Enter place name and initial token count (e.g., p1 1): r2 1
Enter place name and initial token count (e.g., p1 1): p1 1
Enter place name and initial token count (e.g., p1 1): p2 0
Enter place name and initial token count (e.g., p1 1): p3 0
Enter place name and initial token count (e.g., p1 1): p4 1
Enter place name and initial token count (e.g., p1 1): p5 0
Enter place name and initial token count (e.g., p1 1): p6 0
Enter number of transitions:6
Enter transition name:T1
Enter input places (add-space):p1 r1
Enter output places (add-space):p2
Enter transition name:T2
Enter input places (add-space):p2 r2
Enter output places (add-space):p3
Enter transition name:T3
Enter input places (add-space):p3
Enter output places (add-space):p1 r1 r2
Enter transition name:T4
Enter input places (add-space):p4 r2
Enter output places (add-space):p5
Enter transition name:T5
Enter input places (add-space):p5 r1
Enter output places (add-space):p6
Enter transition name:T6
Enter output places (add-space):p4 r1 r2
Marking of the Petri Net <r1=1, r2=1, p1=1, p2=0, p3=0, p4=1, p5=0, p6=0>
Transitions T1 and T4 are enabled and so fired.
Markings of the Petri Net <r1=0, r2=0, p1=0, p2=1, p3=0, p4=0, p5=1, p6=0>

Marking of the Petri Net <r1=0, r2=0, p1=0, p2=1, p3=0, p4=0, p5=1, p6=0>
No transitions are enabled. Deadlock detected
PS C:\Users\kaavi\OneDrive\Desktop\CS 746 Software Modeling and Analysis\Assignment\Assign3>

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