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Registration Number: 20BPS1022

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LAB-05

CSE2021

DISTRIBUTED REAL-TIME SYSTEMS

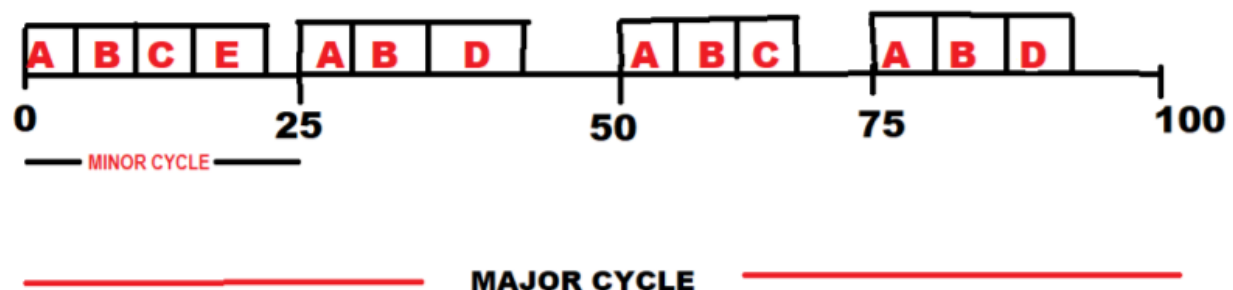
Tools Used: Ptolemy

Task: Creating cyclic scheduling using Finite State Machine (FSM).

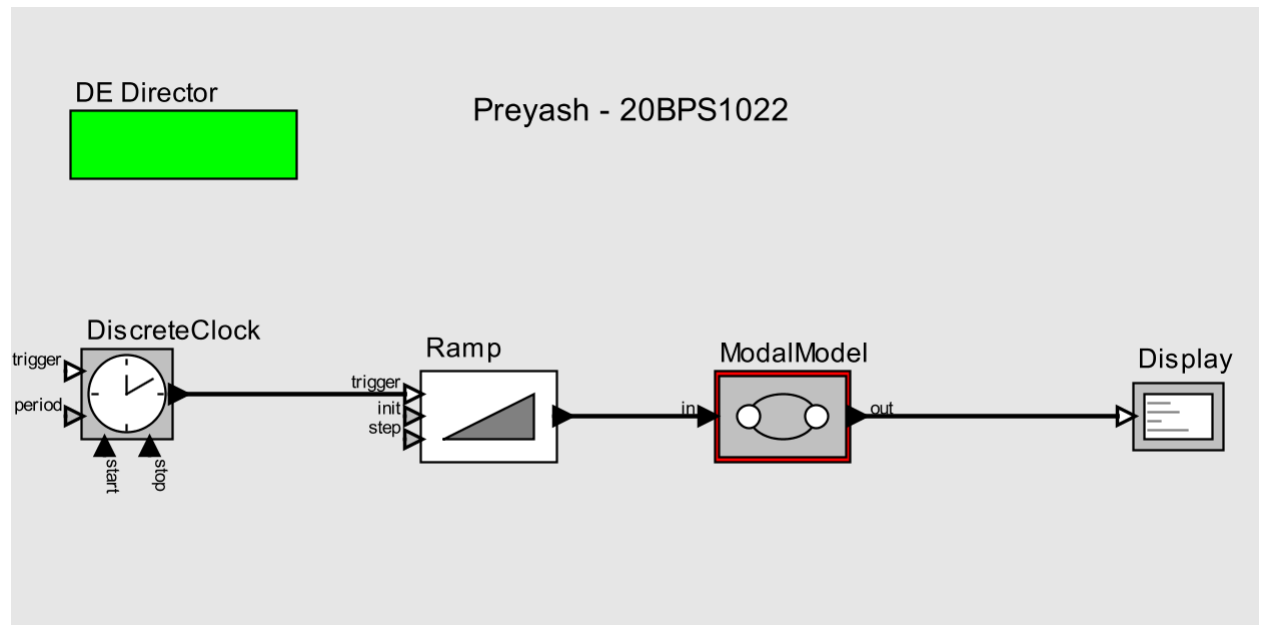
Question:

♦ Clock-driven (time-driven) scheduling algorithm	Process	Period	Comp. Time
♦ Off-line algorithm	A	25	10
♦ Minor Cycle (e.g. 25ms) - gcd of all periods	B	25	8
♦ Major Cycle (e.g. 100ms) - lcm of all periods	C	50	5
Construction of a cyclic executive is equivalent to <u>bin packing</u>	D	50	4
	E	100	2

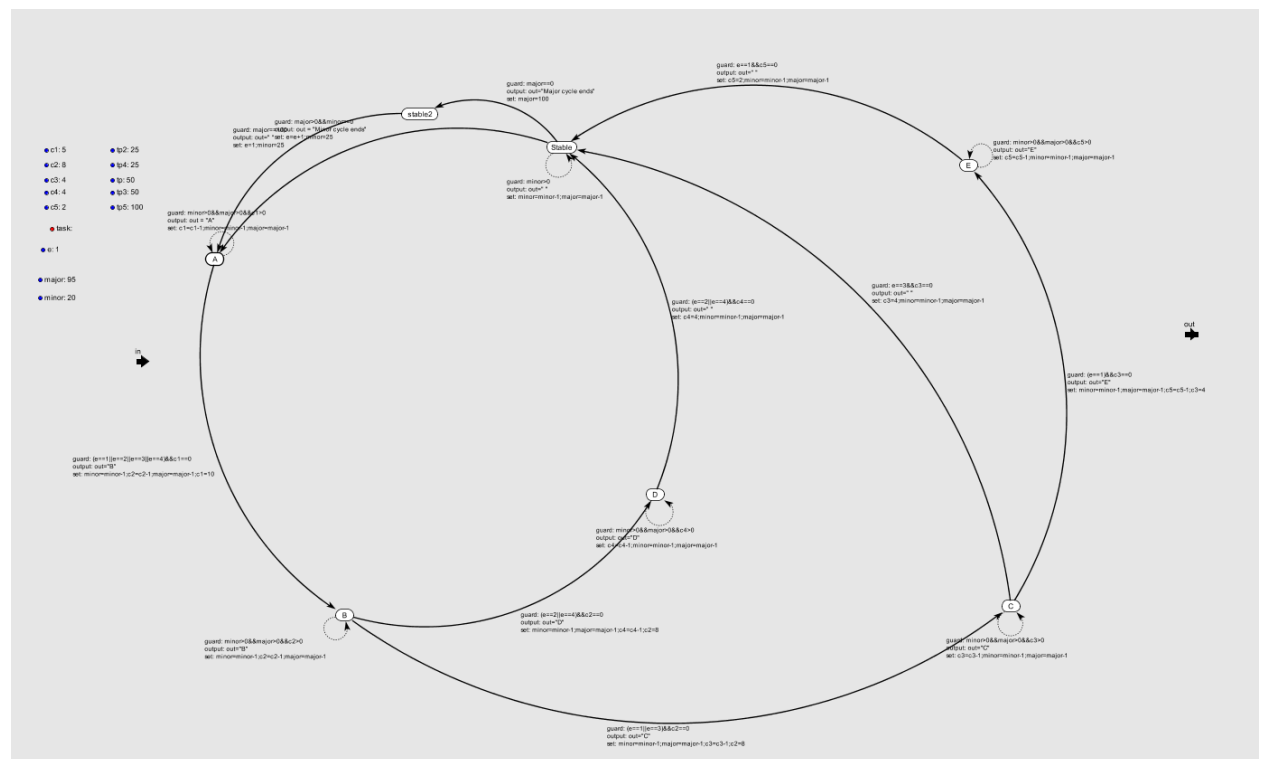
Schedule:



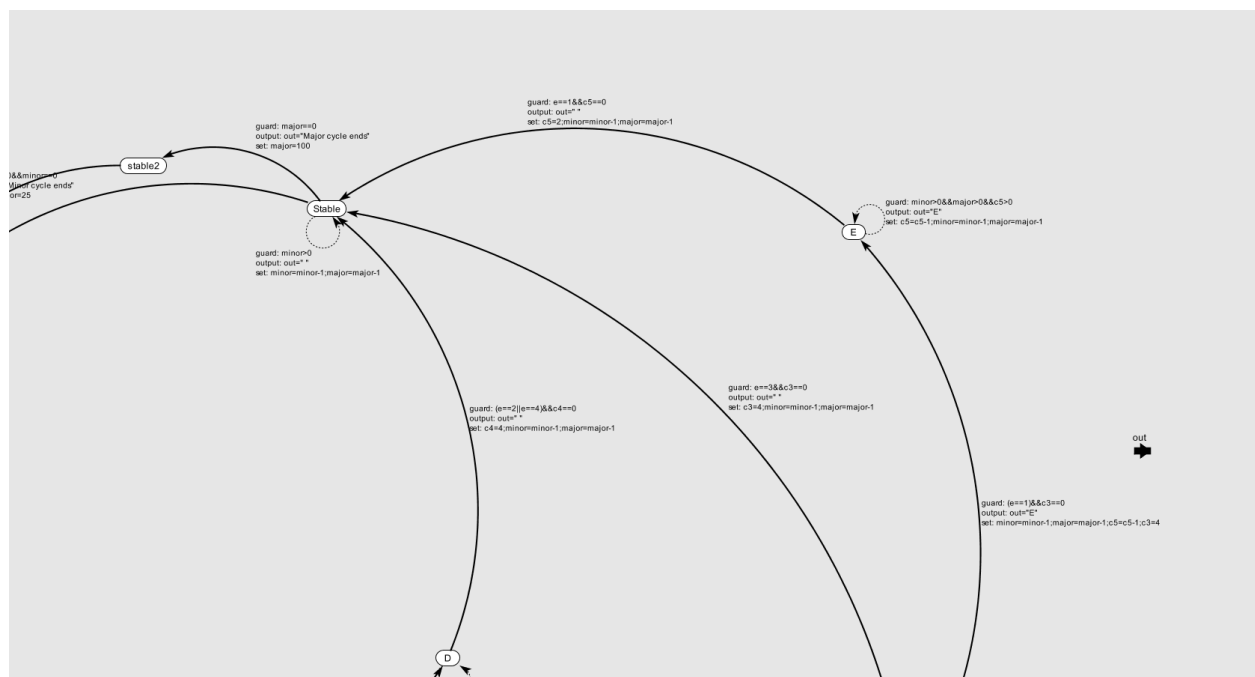
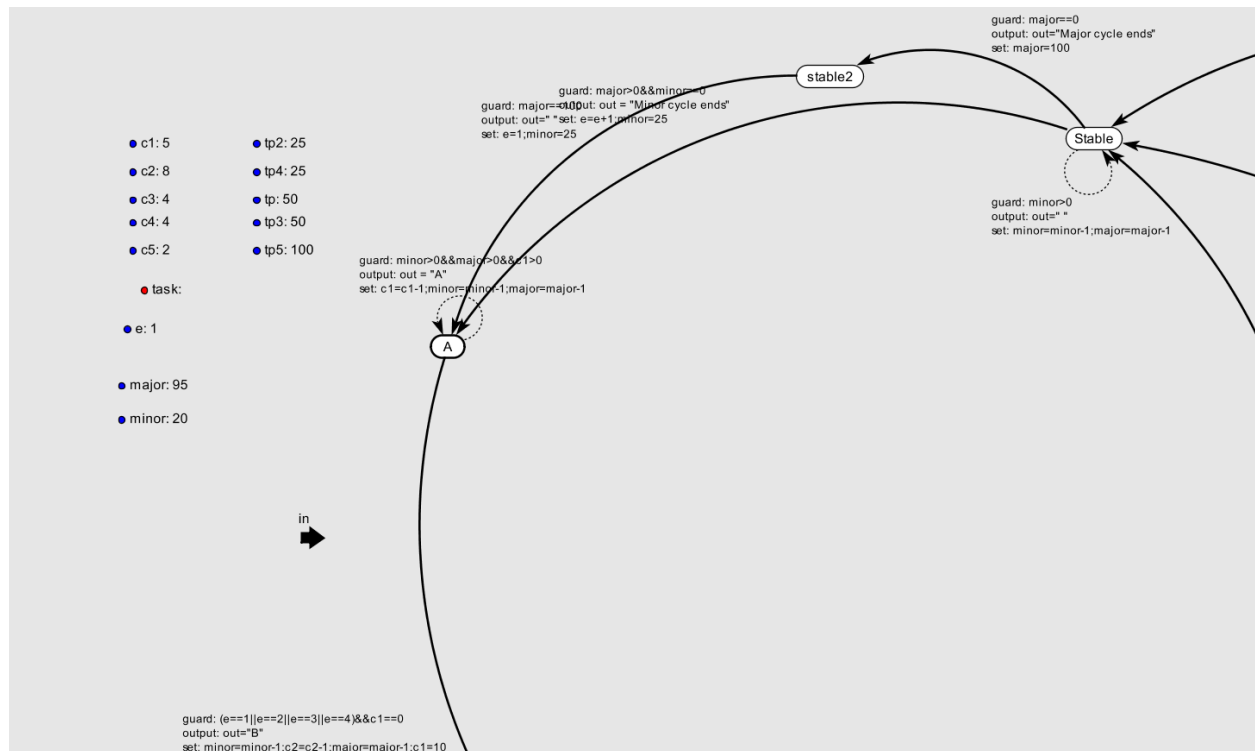
Circuit:

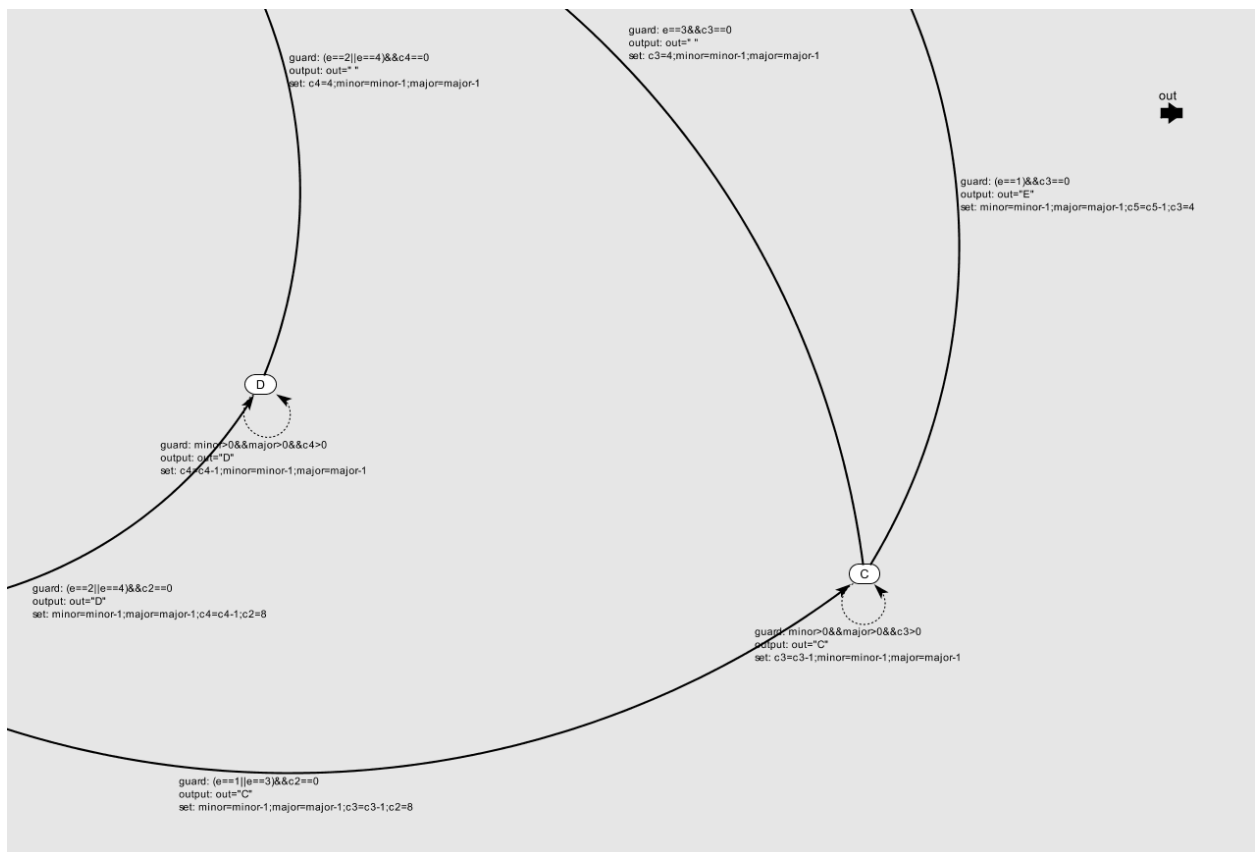
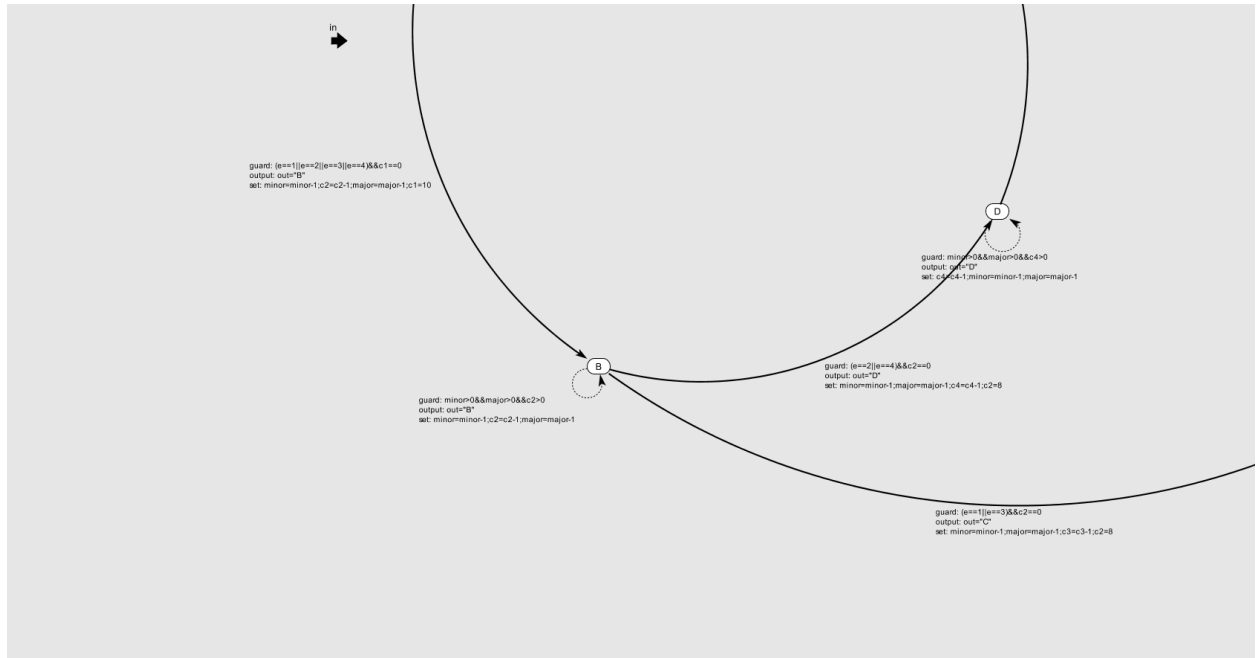


FSM:



Closer view:





Output:

A
A
A
A
A
A
A
A
A
A
A
B
B
B
B
B
B
B
B
C
C
C
C
E
E

Minor cycle ends

A
A
A
A
A
A
A
A
A
A
B
B
B
B
B
B
B
B
D
D
D
D

Minor cycle ends

```
A
A
A
A
A
A
A
A
A
B
B
B
B
B
B
B
B
B
B
C
C
C
C
```

Minor cycle ends

```
A
A
A
A
A
A
A
A
A
A
A
B
B
B
B
B
B
B
B
B
D
D
D
D
```

Major cycle ends

Note: The Program will keep on running for every major cycle in similar way.