

Exercise #5

We have given below sessions,

S1: <P1, P2, P5, P2, P7, P3>

S2: <P1, P4, P5, P1, P6, P7>

S3: <P1, P6, P1, P4>

S4: <P5, P4, P1, P6, P7>

S5: <P5, P3>

S6: <P1, P2, P7, P3>

S7: <P2, P7>

S8: <P1, P2, P4, P1, P2, P6, P7, P3>

We also have Start and End for Markov Model in LuDM05.

- **Start:** <P1, P1, P1, P5, P5, P1, P2, P1>
So, Transition Probability is $1/8 = 0.125$
Start -> P1 = $0.125 \times 5 = 0.625$
Start -> P5 = $0.125 \times 2 = 0.25$
Start -> P2 = $0.125 \times 1 = 0.125$
- **P1:** <P2, P4, P6, P6, P4, P6, P2, P2, P2>
So, Transition Probability is $1/9 = 0.111$
P1 -> P2 = $0.111 \times 4 = 0.444$
P1 -> P4 = $0.111 \times 2 = 0.222$
P1 -> P6 = $0.111 \times 3 = 0.333$
- **P2:** <5, 7, 7, 7, 4, 6>
So, Transition Probability is $1/6 = 0.167$
P2 -> P5 = $0.167 \times 1 = 0.167$
P2 -> P7 = $0.167 \times 3 = 0.5$
P2 -> P4 = $0.167 \times 1 = 0.167$
P2 -> P6 = $0.167 \times 1 = 0.167$
- **P3:** <E, E, E, E>
So, Transition Probability is $1/4 = 0.25$
P3 -> End = $0.25 \times 4 = 1$
- **P4:** <5, E, 1, 1>
So, Transition Probability is $1/4 = 0.25$
P4 -> P5 = $0.25 \times 1 = 0.25$
P4 -> End = $0.25 \times 1 = 0.25$
P4 -> P1 = $0.25 \times 2 = 0.5$
- **P5:** <2, 1, 4, 3>
So, Transition Probability is $1/4 = 0.25$
P5 -> P2 = $0.25 \times 1 = 0.25$
P5 -> P1 = $0.25 \times 1 = 0.25$
P5 -> P4 = $0.25 \times 1 = 0.25$
P5 -> P3 = $0.25 \times 1 = 0.25$

- **P6:** $\langle 7, 1, 7, 7 \rangle$
 So, Transition Probability is $1/4 = 0.25$
 $P6 \rightarrow P7 = 0.25 \cdot 3 = 0.75$
 $P6 \rightarrow P1 = 0.25 \cdot 1 = 0.25$
- **P7:** $\langle 3, E, E, 3, E, 3 \rangle$
 So, Transition Probability is $1/6 = 0.167$
 $P7 \rightarrow P3 = 0.167 \cdot 3 = 0.5$
 $P7 \rightarrow \text{End} = 0.167 \cdot 3 = 0.5$

