

Assignment - 4

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Part 1:

Emission prob

	Hello	Hey	Hi
Rasika		0.4	0.6
Zhihaa	0.9	0.1	

Transition prob

	Rasika	Zhihaa	end
start		1	
Rasika	0.5	0.3	0.2
Zhihaa	0.3	0.5	0.2

vitruvi:

Lattice:

	Hello	Hey	Hi	End
Rasika	= 0	From R = 0 From Z = $0.9 \times 0.4 \times 0.3$ = 0.108 //	From R = $0.108 \times 0.6 \times 0.5$ = 0.0324 //	
Zhihaa	= $0.9 \times 1 = 0.9$	From R = 0 From Z = $0.9 \times 0.1 \times 0.5$ = 0.045 //	From Z = $0.045 \times 0.6 \times 0.3$ = 0.0081 From R = $0.108 \times 0 = 0$ From Z = $0.045 \times 0 = 0$	From R = $0.0324 \times 1 \times 0.2$ = 0.00648 //
end	= 0	0		

1 a) Prob of emitting this sentence =
 $= 0.00648$

Decoding
Hello = zhihao
Hey = Rasika
Hi = Rasika

b) yes. state sequence is "zhihao \rightarrow zhihao \rightarrow Rasika"
Total prob of emitting this sentence is
 $= 0.00648 + 0.00162 = 0.0081$