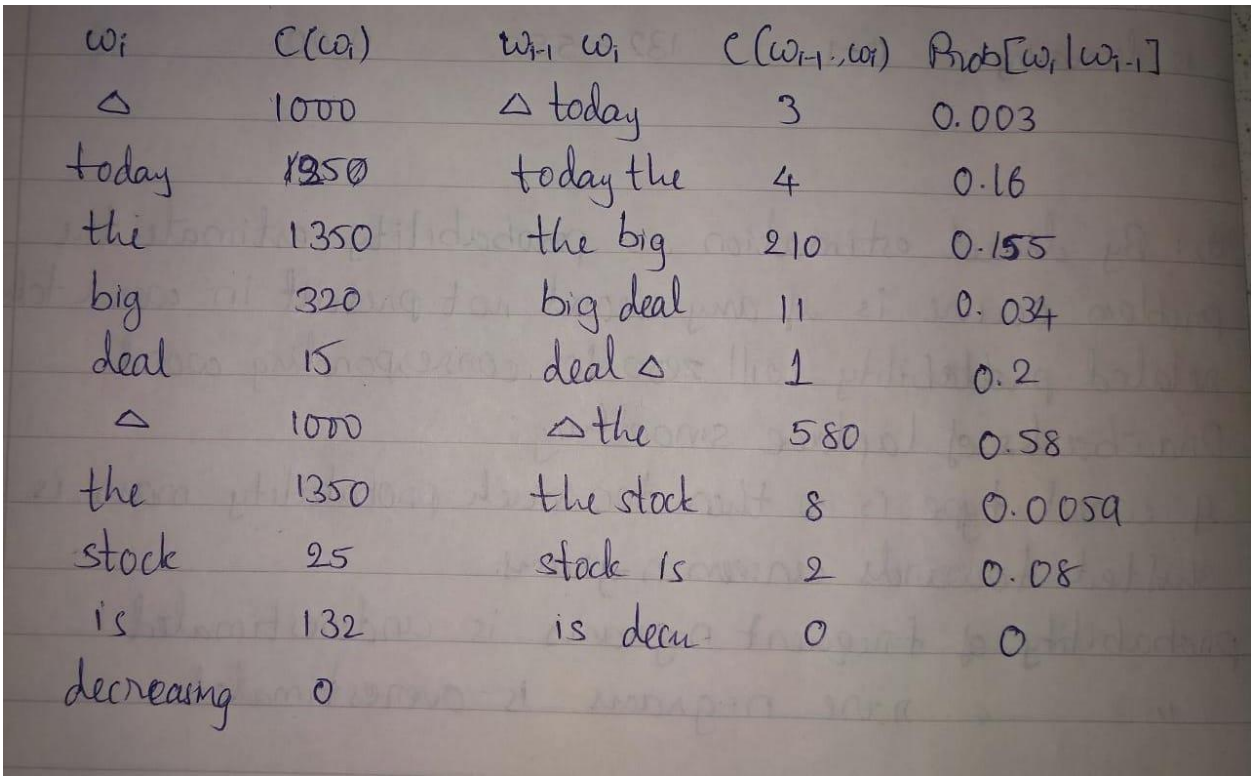
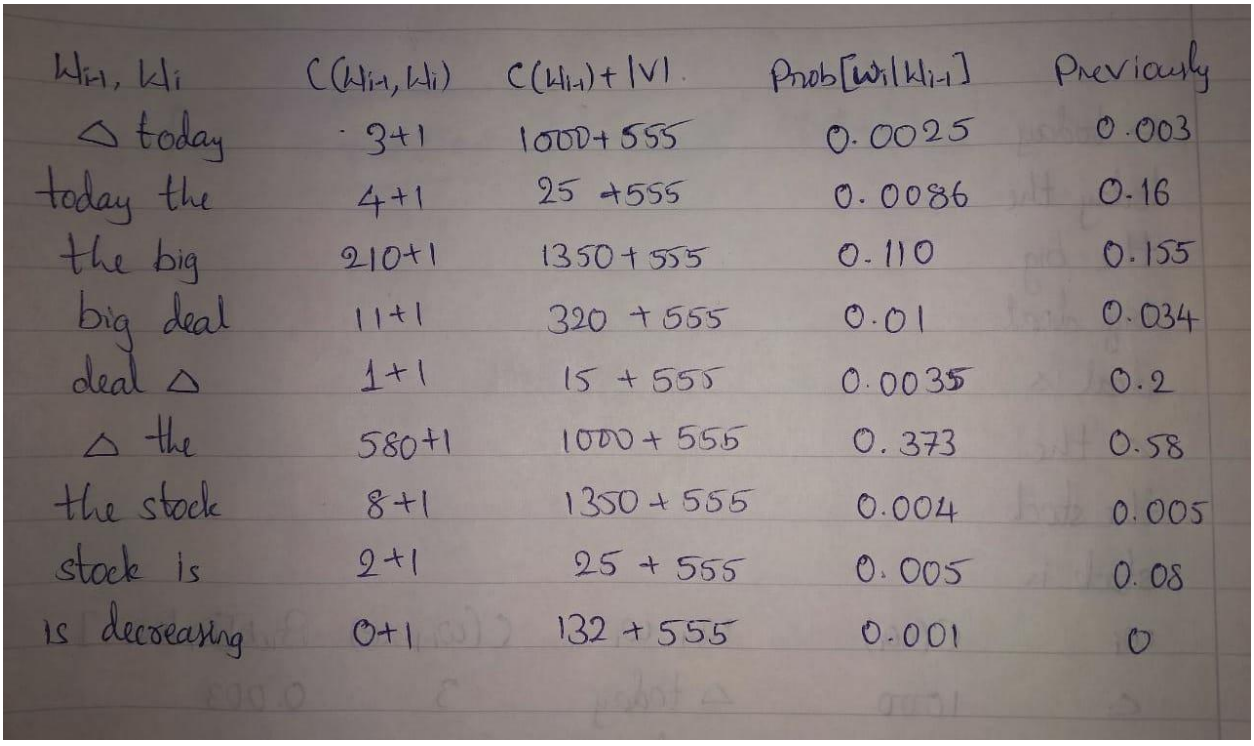
Q1. Compute the probabilities of the two sequences with and without Laplace smoothing.



w_i	$C(w_i)$	w_{i-1} w_i	$C(w_{i-1}, w_i)$	$Prob[w_i \mid w_{i-1}]$
△	1000	△ today	3	0.003
today	1850	today the	4	0.16
the	1350	the big	210	0.155
big	320	big deal	11	0.034
deal	15	deal △	1	0.2
△	1000	△ the	580	0.58
the	1350	the stock	8	0.0059
stock	25	stock is	2	0.08
is	132	is decr	0	0
decreasing	0			



W_{i-1}, W_i	$C(W_{i-1}, W_i)$	$C(W_{i-1}) + \lvert V \rvert$	$Prob[w_i \mid W_{i-1}]$	Previously
△ today	3+1	1000+555	0.0025	0.003
today the	4+1	25 +555	0.0086	0.16
the big	210+1	1350+555	0.110	0.155
big deal	11+1	320 +555	0.01	0.034
deal △	1+1	15 +555	0.0035	0.2
△ the	580+1	1000+555	0.373	0.58
the stock	8+1	1350+555	0.004	0.005
stock is	2+1	25 +555	0.005	0.08
is decreasing	0+1	132 +555	0.001	0