Outline: ME algorithm

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0.Notation

L-t:Local table move, find the best table for a customer given others fixed
L-d:Local dish move, find the best dish for a table given others fixed
M-t:Merge table move, merge two tables
S-t:Split table move, split one tables into several new tables
S-p:Sampling proposal,roughly reconfig restaurant
L-w: Local word move, reallocate the words distribution in a dish given others fixed
M-d:Merge dish move, merge two dishes
DR:Decompose Restaurant
DD:Decompose Dish
DD-init:Delete the dish and reconfig relevant Restaurants

Method	**Problems**	**Solution**
Gibbs Sampler(t-k)	1) Slow speed of convergence 2) Hard to get rid of noisy result	**L-t+L-d**
L-t+L-d	(No merge:) Two tables with distinct words may be better merged but changing one customer from one table to the other will be worse off	+**M-t**
L-t+L-d+M-t	(No split) If the restaurant has only one table then no move can be made.	+**S-t**
S-t+(L-t+L-d+M-t)	1) hard to determine the number of parts to split into 2)normal k-means algorithm is costly	**S-t⇒S-P**
DR=S-p+(L-t+L-d+M-t)	(No split)If a dish should be splitted into two, then each DR may not want to split the dish	**DD-init**
DD-init	(No local:)Reallocate all customers with one certain word from one dish to another may be beneficial	+**L-w**
DD-init+L-w	(No merge:)Two dishes may be better merged but each DR will be worse off	+**M-d**
DD=DD-init+L-w+M-d		