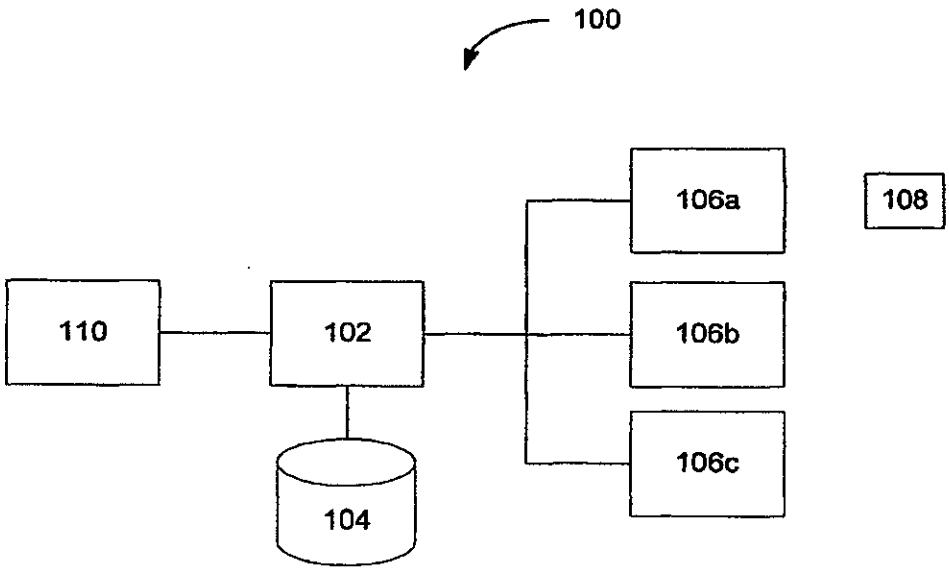


Figure 1

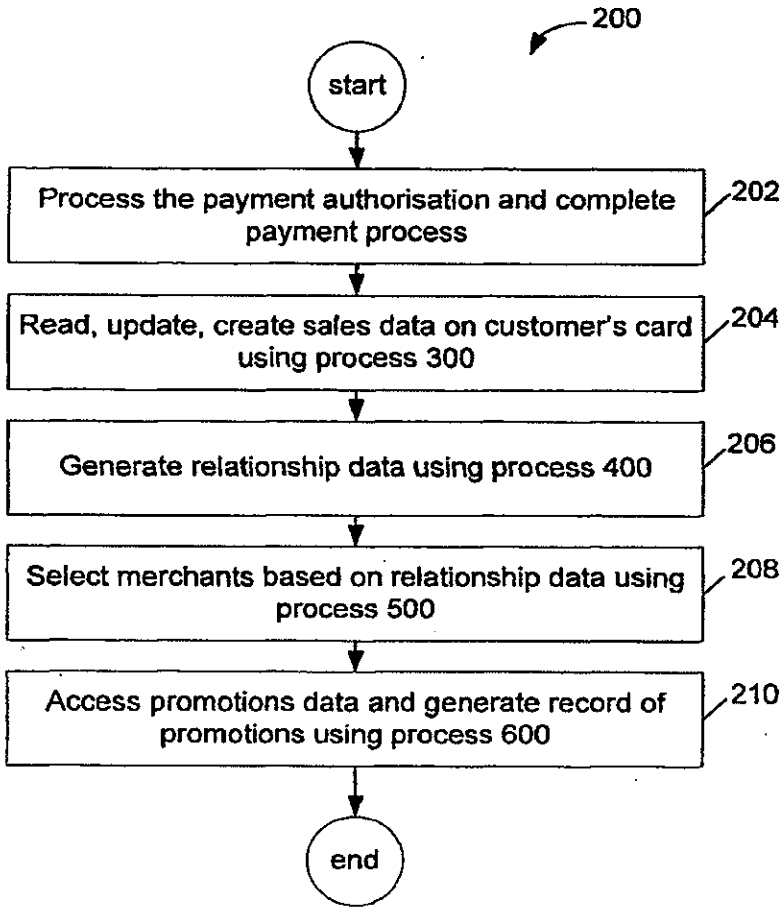

200
start
Process the payment authorisation and complete payment process
202
Read, update, create sales data on customer's card using process 300
204
Generate relationship data using process 400
206
Select merchants based on relationship data using process 500
208
Access promotions data and generate record of promotions using process 600
210
end

Figure 2

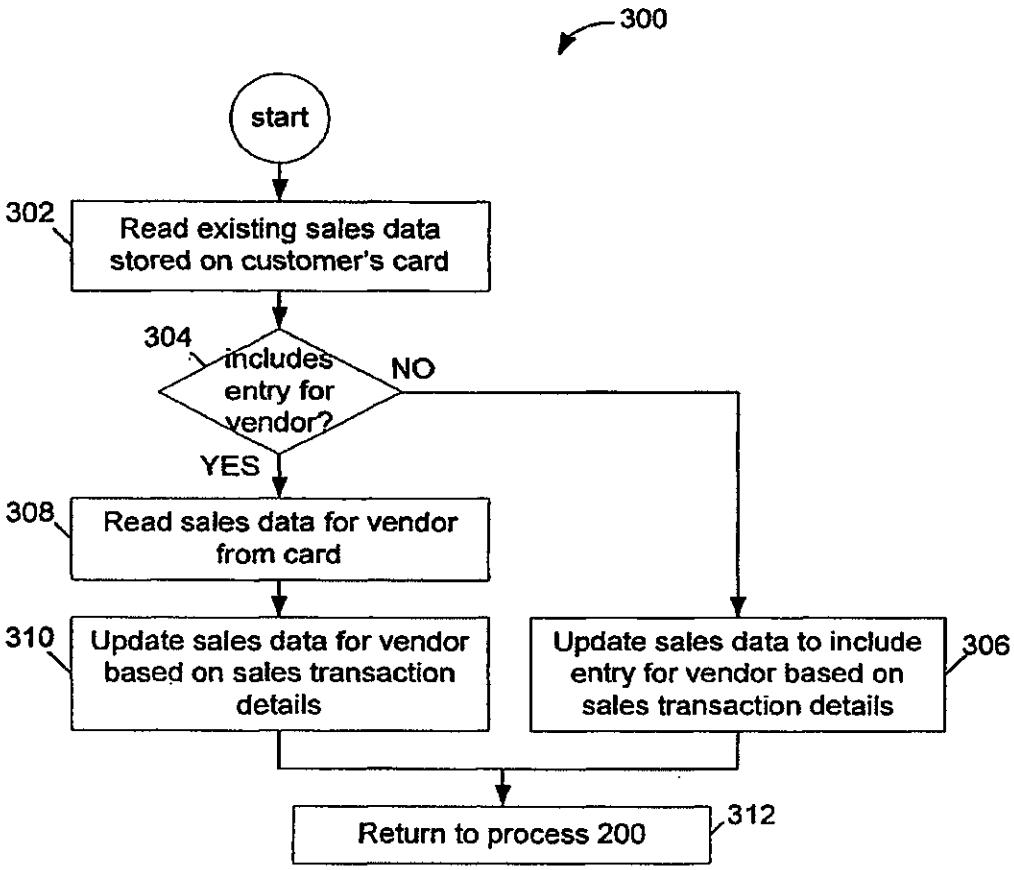

300
start
302
Read existing sales data stored on customer's card
304
includes entry for vendor?
NO
YES
308
Read sales data for vendor from card
310
Update sales data for vendor based on sales transaction details
Update sales data to include entry for vendor based on sales transaction details
306
Return to process 200
312

Figure 3

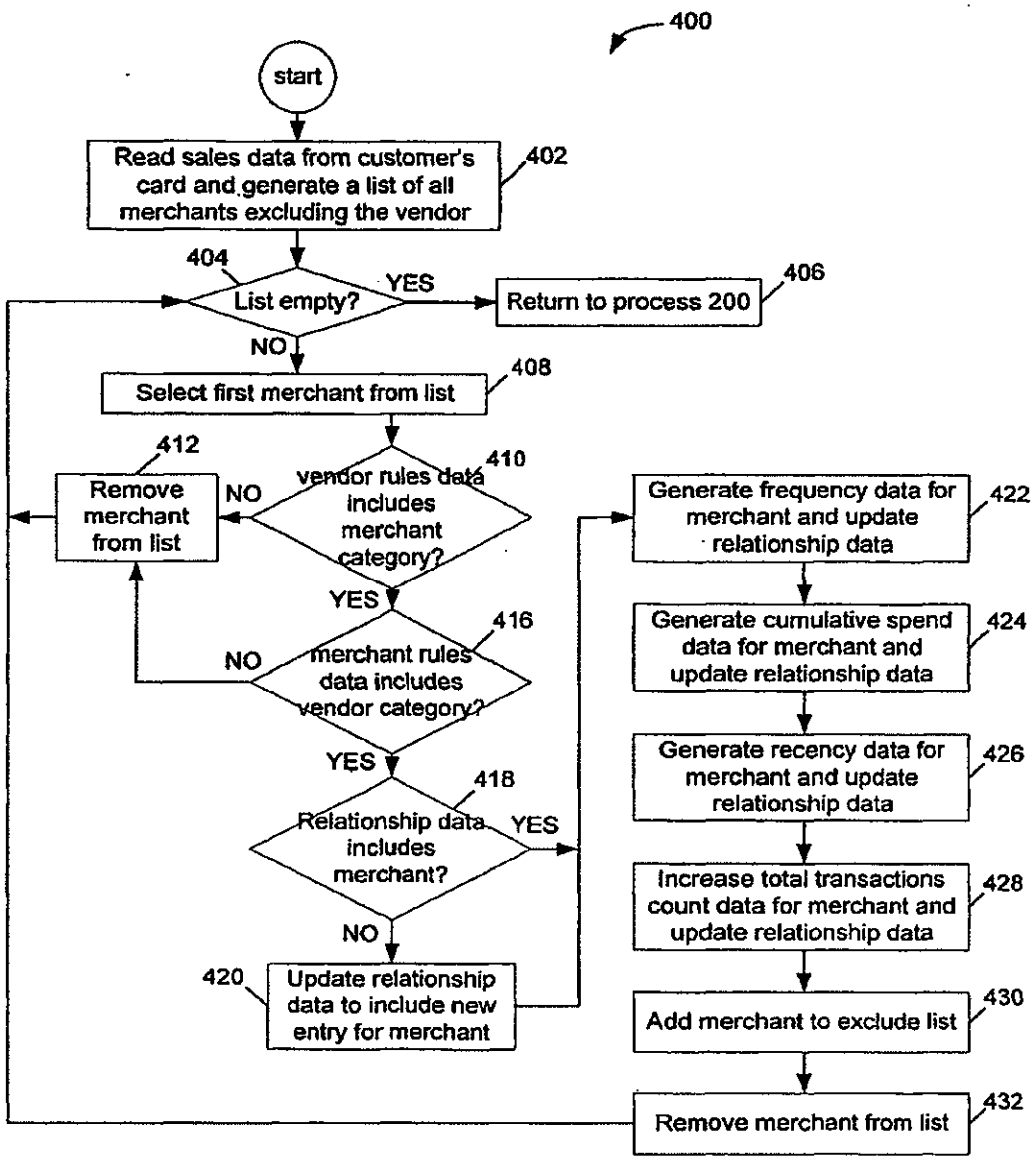

400
start
Read sales data from customer's card and generate a list of all merchants excluding the vendor
402
404
List empty?
YES
Return to process 200
406
NO
Select first merchant from list
408
412
Remove merchant from list
NO
vendor rules data includes merchant category?
410
YES
merchant rules data includes vendor category?
416
NO
YES
Relationship data includes merchant?
418
YES
NO
420
Update relationship data to include new entry for merchant
Generate frequency data for merchant and update relationship data
422
Generate cumulative spend data for merchant and update relationship data
424
Generate recency data for merchant and update relationship data
426
Increase total transactions count data for merchant and update relationship data
428
Add merchant to exclude list
430
Remove merchant from list
432

Figure 4

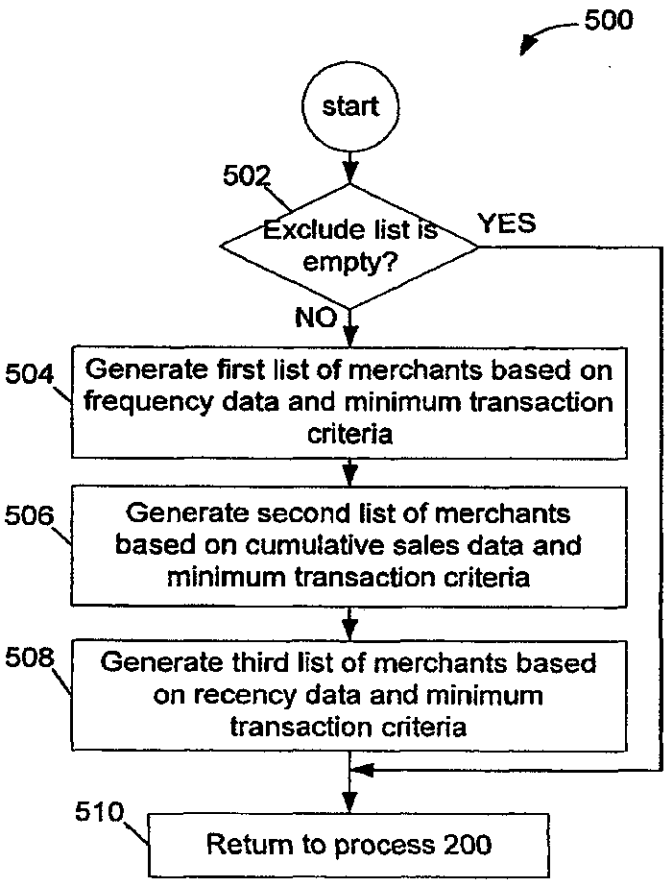

500
start
502
Exclude list is empty?
YES
NO
504
Generate first list of merchants based on frequency data and minimum transaction criteria
506
Generate second list of merchants based on cumulative sales data and minimum transaction criteria
508
Generate third list of merchants based on recency data and minimum transaction criteria
510
Return to process 200

Figure 5

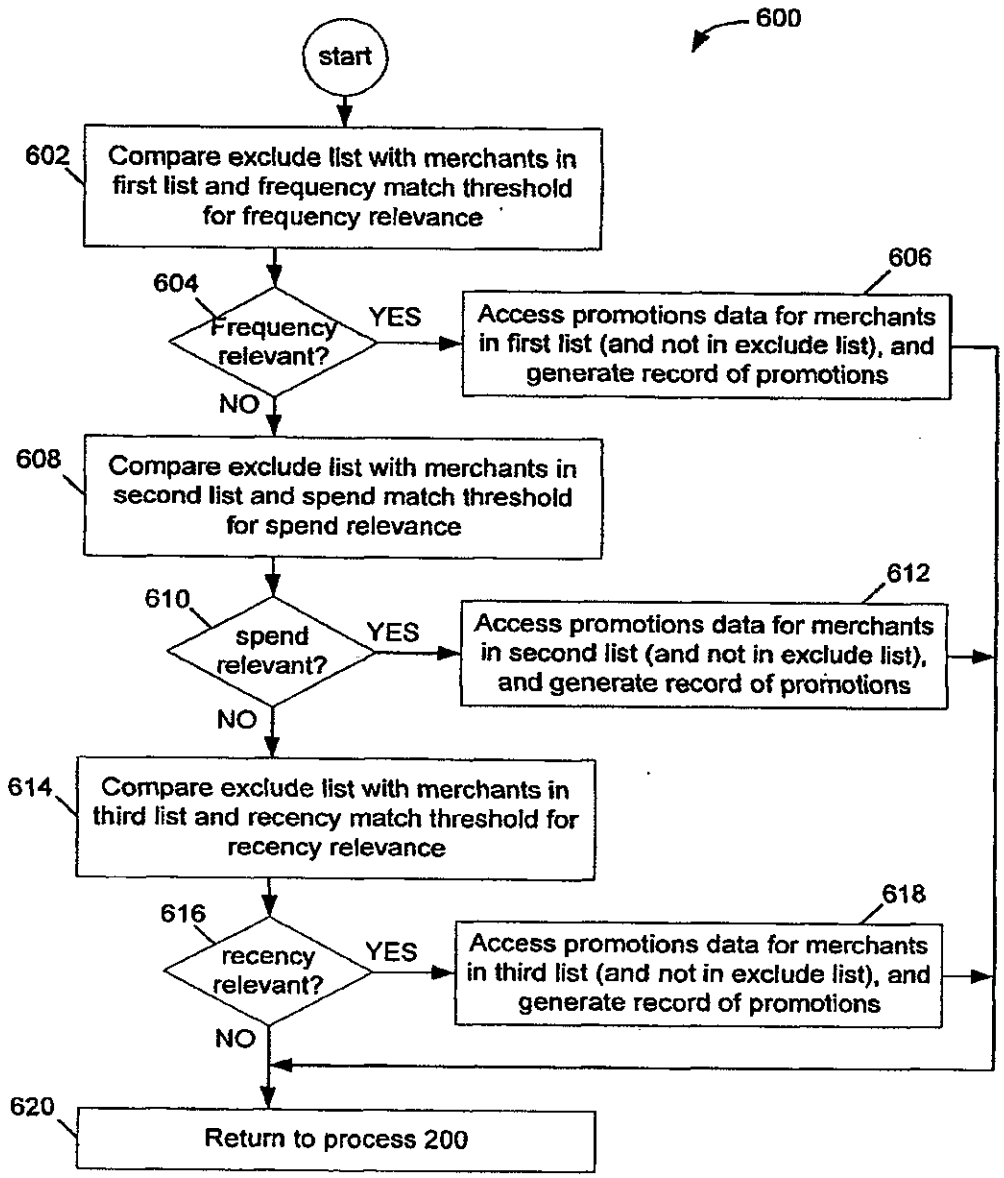

600
start
602
Compare exclude list with merchants in first list and frequency match threshold for frequency relevance
604
Frequency relevant?
YES
606
Access promotions data for merchants in first list (and not in exclude list), and generate record of promotions
NO
608
Compare exclude list with merchants in second list and spend match threshold for spend relevance
610
spend relevant?
YES
612
Access promotions data for merchants in second list (and not in exclude list), and generate record of promotions
NO
614
Compare exclude list with merchants in third list and recency match threshold for recency relevance
616
recency relevant?
YES
618
Access promotions data for merchants in third list (and not in exclude list), and generate record of promotions
NO
620
Return to process 200

Figure 6

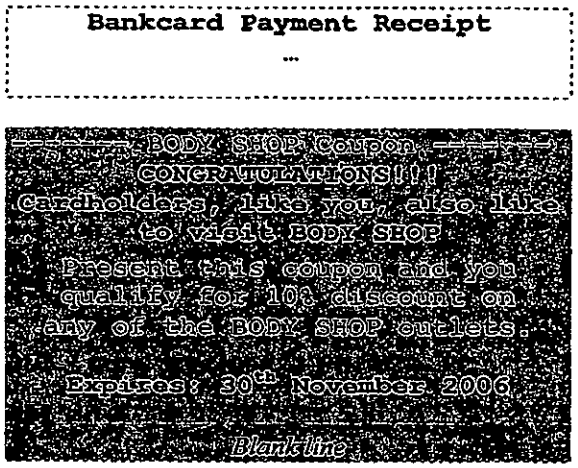


Figure 7

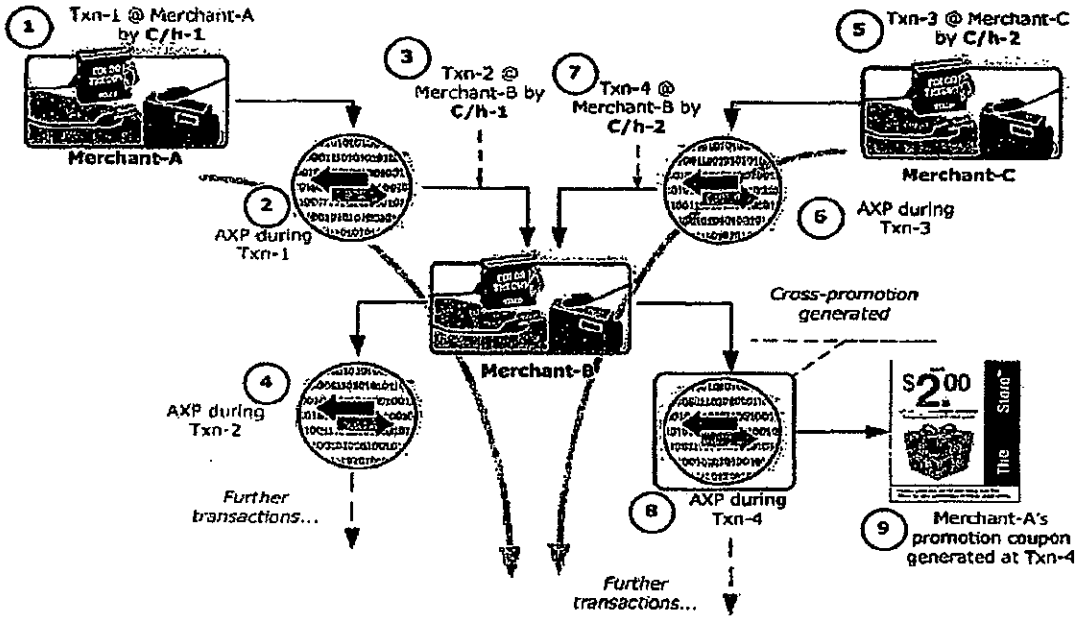


Figure 8

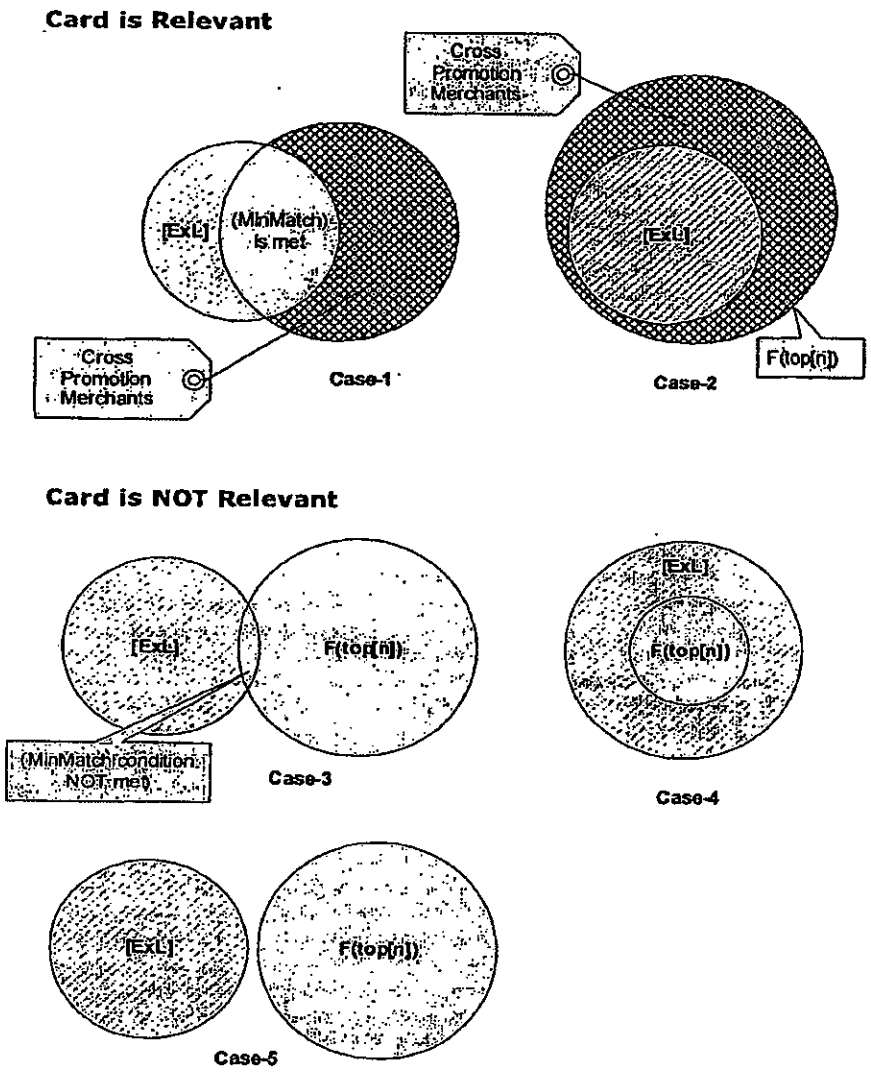

Card is Relevant
Cross Promotion Merchants
[Ext.]
(MinMatch) is met
Cross Promotion Merchants
Case-1
[Ext.]
F(top[n])
Case-2
Card is NOT Relevant
[Ext.]
F(top[n])
(MinMatch)condition NOT met
Case-3
[Ext.]
F(top[n])
Case-4
[Ext.]
F(top[n])
Case-5

Figure 9