```
In [4]: ChiMerge(attribute='humidity', threshold=2.71)
Result from ChiMerge algorithm for attribute = humidity , threshold = 2.71 ,
minIntervals = 2 , maxIntervals = inf
Initial Frequency Table:
  humidity play don't play Total
        65
1
              2
        70
                          1
                                3
2
        75
              1
                          0
                                1
3
        78
              1
                          0
                                1
4
        80
              1
                          2
                                3
5
        85
              1
                          0
                                1
6
        90
              1
                          1
                                2
7
        95
              0
                          1
                                1
8
        96
              0
                          1
                                1
Contingency table with observed values:
           play don't play row_sum
humidity
65
              1
                          0
                                  1
              2
                                  3
70
                          1
column_sum
              3
                          1
                                  4
Contingency table with expected values:
            play don't play row_sum
humidity
                        0.25
                                   1
65
            0.75
            2.25
                        0.75
70
                                   3
column_sum
                           1
                                   4
Contingency table with Chi square value:
                  play don't play row sum
humidity
                                         1
65
            0.0833333
                            0.125
70
            0.0277778
                        0.0833333
                                         3
column_sum
                     3
                                1
                                         4
Contingency table with observed values:
           play don't play row sum
humidity
              2
70
                          1
                                  3
75
              1
                          0
                                  1
              3
                          1
                                  4
column_sum
Contingency table with expected values:
            play don't play row_sum
humidity
70
            2.25
                        0.75
                                   3
75
            0.75
                        0.25
                                   1
column sum
               3
                                   4
Contingency table with Chi square value:
                  play don't play row_sum
humidity
```

0.0277778 0.0833333

75 column_sum	0.0833333	3	0.125 1	1 4
Contingency	table wit			
humidity 75 78 column_sum	1 1 2	0 0 0	1 1 2	
Contingency	table wit			
humidity 75 78 column_sum	1 1 2	0 0 0	1 0w_sum 1 1 2	
Contingency	/ table wit play don't			
humidity 75 78 column_sum	0 0 2	0 0 0	1 0w_sum 1 1 2	
Contingency	/ table wit play don't			
humidity 78 80 column_sum	1 1 2	0 2 2	_ 1 3 4	
Contingency		th expe	ected va	lues:
humidity 78 80 column_sum	0.5 1.5 2	0.5 1.5 2	1 3 4	
Contingency			square play ro	
humidity 78 80 column_sum	0.5 0.166667 2		0.5 56667 2	1 3 4
Contingency	/ table wit play don't			
humidity 80 85 column_sum	1 1 2	2 0 2	3 1 4	

Contingency table with expected values: play don't play row\_sum humidity

80 85	1.5 0.5	1.5 0.5	3 1	
column_sum	2	2	4	
Contingency		h Chi squ don't pla		
humidity 80 85	0.166667 0.5	0.16666 0.		
column_sum	2		2 4	
Contingency	table wit			
humidity 85	1	0	1	
90	1	1	2	
column_sum	2	1	3	
Contingency		h expecte don't pla		
humidity 85	0 666667	0.33333	2 1	
90		0.66666		
column_sum	2		1 3	
Contingency				
	play	don't pl	ay row sum	
humidity	play	don't pl	ay row_sum	
85	0.166667	0.2222	22 1	
85 90	0.166667 0.0833333	0.2222 0.1666	22 1 67 2	
85 90 column_sum	0.166667 0.0833333	0.2222 0.1666	22 1 67 2 1 3	
85 90 column_sum Contingency	0.166667 0.0833333	0.2222 0.1666	22 1 67 2 1 3	
85 90 column_sum Contingency humidity	0.166667 0.0833333 2 table wit play don't	0.2222 0.1666 th observe	22 1 67 2 1 3 d values: _sum	
85 90 column_sum Contingency	0.166667 0.0833333 2 table wit	0.2222 0.1666	22 1 67 2 1 3	
85 90 column_sum Contingency humidity 90	0.166667 0.0833333 2 table wit play don't	0.2222 0.1666 th observe play row	22 1 67 2 1 3 d values: _sum	
85 90 column_sum Contingency humidity 90 95	0.166667 0.08333333 table wit play don't  1 0 1 table wit	0.2222 0.1666 ch observe play row 1 1 2	22 1 67 2 1 3 d values: _sum 2 1 3 d values:	
85 90 column_sum Contingency humidity 90 95 column_sum Contingency humidity	0.166667 0.0833333 2 table wit play don't  1 0 1 table wit play	0.2222 0.1666 ch observe play row 1 1 2 ch expecte don't pla	22	
85 90 column_sum Contingency humidity 90 95 column_sum Contingency humidity 90	0.166667 0.0833333 2 table wit play don't  1 0 1 table wit play	0.2222 0.1666 ch observe play row 1 1 2 ch expecte don't pla 1.3333	22 1 67 2 1 3 d values: _sum 2 1 3 d values: y row_sum 3 2	
85 90 column_sum Contingency humidity 90 95 column_sum Contingency humidity 90 95	0.166667 0.0833333 table wit play don't  1 0 1 table wit play 0.666667 0.3333333	0.2222 0.1666 ch observe play row 1 1 2 ch expecte don't pla 1.3333 0.66666	22 1 67 2 1 3 d values: _sum 2 1 3 d values: y row_sum 3 2 7 1	
85 90 column_sum  Contingency humidity 90 95 column_sum  Contingency humidity 90 95 column_sum	0.166667 0.0833333 table wit play don't 1 0 1 table wit play 0.666667 0.3333333	0.2222 0.1666 ch observe play row 1 1 2 ch expecte don't pla 1.3333 0.666666	22 1 67 2 1 3 d values: _sum  2 1 3 3 d values: y row_sum  3 2 7 1 2 3	
85 90 column_sum Contingency humidity 90 95 column_sum Contingency humidity 90 95 column_sum Contingency	0.166667 0.0833333 table wit play don't  1 0 1 table wit play 0.666667 0.3333333 1 table wit	0.2222 0.1666 ch observe play row 1 1 2 ch expecte don't pla 1.3333 0.666666	22 1 67 2 1 3 d values: _sum 2 1 3 3 d values: y row_sum 3 2 7 1 2 3 are value:	
85 90 column_sum Contingency humidity 90 95 column_sum Contingency humidity 90 95 column_sum Contingency humidity	0.166667 0.0833333 table wit play don't  1 0 1 table wit play 0.666667 0.333333 1 table wit play	n 0.2222 n 0.1666 th observe play row 1 1 2 th expecte don't pla 1.3333 0.66666	22	
85 90 column_sum Contingency humidity 90 95 column_sum Contingency humidity 90 95 column_sum Contingency	0.166667 0.0833333 table wit play don't  1 0 1 table wit play 0.666667 0.333333 1 table wit play	0.2222 0.1666 ch observe play row 1 1 2 ch expecte don't pla 1.3333 0.666666	22 1 67 2 1 3 d values: _sum  2 1 3 d values: y row_sum 3 2 7 1 2 3 are value: y row_sum 3 2	
85 90 column_sum Contingency humidity 90 95 column_sum Contingency humidity 90 95 column_sum Contingency humidity 90 91 Contingency humidity 90 90 91 91 92 93 95 94 95 95 95 96 96 97 97 98 98 98 99 99 99 99 99 99 99 99 99 99	0.166667 0.0833333 table wit play don't  1 0 1 table wit play 0.666667 0.333333 1 table wit play	0.2222 0.1666 ch observe play row 1 1 2 ch expecte don't pla 1.3333 0.66666 ch Chi squ don't pla 0.083333 0.16666	22 1 67 2 1 3 d values: _sum  2 1 3 d values: y row_sum 3 2 7 1 2 3 are value: y row_sum 3 2	

Contingency table with observed values: play don't play row\_sum

humidity 95 96 column_sum	0 0 0	1 1 2		1 1 2				
	Contingency table with expected values:  play don't play row_sum							
humidity 95	0	1		1				
96	0	1		1				
column_sum	0	2		2				
Contingency		le with Chi	-					
bumi di tu	р1ау	don't play	row_s	um				
humidity 95	0	0		1				
96	0	0		1				
column_sum	0	2		2				
coramii_sam	Ū	_		2				
Frequency T	able	with Chi So	quare (	(Before merging):				
		don't play	•					
0 65	1	. 0	1	0.319444				
1 70	2	1	3	0.319444				
2 75	1	0	1	0				
3 78	1	0	1	1.33333				
4 80	1	2	3	1.33333				
5 85	1	0	1	0.638889				
6 90	1	1	2	0.638889				
7 95	0	1	1	0				
8 96	0	1	1	None				
Frequency T	able	with Chi So	uare (	(After merging):				
		don't play						
0 65	1	0	1	0.319444				
1 70	2	1	3	0.319444				
2 75	2	0	2	None				
3 80	1	2	3	1.33333				
4 85	1	0	1	0.638889				
5 90	1	1	2	0.638889				
6 95	0	1	1	0				
7 96	0	1	1	None				
Contingency		le with obse don't play						
humidity	ртау	don c pray	1 OW_3	AIII				
70	2	1		3				
7 <del>0</del> 75	2	0		2				
column_sum	4	1		5				
_		_						
Contingency table with expected values:  play don't play row_sum								
humidity		. ,	_					
70	2.4	0.6		3				
75	1.6	0.4		2				

column sum Contingency table with Chi square value: play don't play row\_sum humidity 0.0666667 0.266667 0.1 0.32 column sum Contingency table with observed values: play don't play row sum humidity column\_sum Contingency table with expected values: play don't play row\_sum humidity 1.2 0.8 1.8 1.2 column\_sum Contingency table with Chi square value: play don't play row\_sum humidity 0.533333 0.8 0.355556 0.533333 column\_sum Frequency Table with Chi Square (Before merging): humidity play don't play Total chi\_square 0.319444 0.753333 2.22222 1.33333 0.638889 0.638889 None Frequency Table with Chi Square (After merging): humidity play don't play Total chi\_square 0.319444 0.753333 2.22222 1.33333 0.638889

Contingency table with observed values: play don't play row\_sum humidity

0.638889

None

90	1	1	2
95	0	2	2
column_sum	1	3	4

Contingency table with expected values:

play don't play row\_sum humidity
90 0.5 1.5 2
95 0.5 1.5 2
column\_sum 1 3 4

Contingency table with Chi square value: play don't play row\_sum

humidity

90 0.5 0.166667 2 95 0.5 0.166667 2 column sum 1 3 4

Frequency Table with Chi Square (Before merging):

humidity play don't play Total chi\_square 0.319444 0.753333 2.22222 1.33333 0.638889 1.33333 None

Frequency Table with Chi Square (After merging):

humidity play don't play Total chi\_square None 2.22222 1.33333 0.638889 1.33333 None

Contingency table with observed values: play don't play row\_sum

humidity

65 3 1 4 75 2 0 2 column\_sum 5 1 6

Contingency table with expected values:

play don't play row\_sum

humidity

65 3.33333 0.6666667 4 75 1.66667 0.333333 2 column\_sum 5 1 6

Contingency table with Chi square value: play don't play row\_sum

humidity

65 75 column_sum	0.0333333 0.0666667 5	0.166 0.222		4 2 6	
	able with Cl play don't p 3 2 1 1 0			efore merging) hi_square 0.488889 2.22222 1.33333 0.638889 1.33333 None	:
	able with Cl play don't p 5 1 1 0			fter merging): hi_square None 1.33333 0.638889 1.33333 None	
	table with play don't p 5 1 6				
_ Contingency	table with play don't p 4 2				
column_sum Contingency humidity	6 table with play don't		9 Juare	value:	
65 80 column_sum	0.25 0.5 6	0.5 1 3		6 3 9	
	able with C play don't p 5 1 1 0			efore merging) hi_square 2.25 1.33333 0.638889 1.33333 None	:
	able with C play don't p 5 1			fter merging): hi_square 2.25 1.33333	

2 85 3 95	2 0	1 2	3 2	None None
Contingency	/ table wit play don't			es:
humidity			_	
80 85	1 2	2 1	3 3	
column_sum	3	3	6	
Contingency	/ table wit	h avnact	ed valu	۵¢۰
concingency	play don't	•		<b>.</b>
humidity			_	
80	1.5	1.5	3	
85	1.5	1.5	3	
column_sum	3	3	6	
	/ table with play o	h Chi sq don't pl		
humidity	0.466667	0 1666	· 67	2
80	0.166667			3
85	0.166667	0.1666		3
column_sum	3		3	6
Contingency	/ table with play don't			es:
humidity	-		_	
85	2	1	3	
95	0	2	2	
column_sum	2	3	5	
Contingency	/ table with play don't	•		es:
humidity	pray don c	pray 10	w_3a	
85	1.2	1.8	3	
95	0.8	1.2	2	
column_sum	2	3	5	
Contingency	/ table with play o	h Chi sq don't pl		
humidity				
85	0.533333			3
95	0.8	0.5333		2
column_sum	2		3	5
	Γable with ( play don't			ore merging):
0 65	5	1	6	2.25
1 80	1	2		.666667
2 85	2	1		2.2222
3 95	0	2	2	None

Frequency Table with Chi Square (After merging): humidity play don't play Total chi\_square

0	65	5	1	6	2.25
1	80	3	3	6	None
2	95	0	2	2	None

Contingency table with observed values:

Contingency table with expected values: play don't play row\_sum

humidity 65 4 2 6 80 4 2 6 column\_sum 8 4 12

Contingency table with Chi square value: play don't play row\_sum

humidity
65 0.25 0.5 6
80 0.25 0.5 6
column\_sum 8 4 12

Contingency table with observed values: play don't play row sum

humidity 80 3 3 6 95 0 2 2 column\_sum 3 5 8

Contingency table with expected values: play don't play row\_sum

humidity
80 2.25 3.75 6
95 0.75 1.25 2
column\_sum 3 5 8

Contingency table with Chi square value: play don't play row\_sum

humidity
80 0.25 0.15 6
95 0.75 0.45 2
column\_sum 3 5 8

Frequency Table with Chi Square (Before merging):
 humidity play don't play Total chi\_square

0 65 5 6 1.5 1 3 1 80 3 6 1.6 2 95 0 2 2 None

Frequency Table with Chi Square (After merging): humidity play don't play Total chi\_square

0 65 8 4 12 None 1 95 0 2 2 None

In [5]: