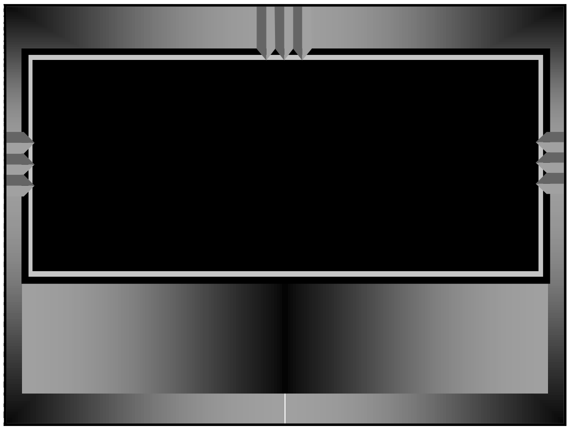

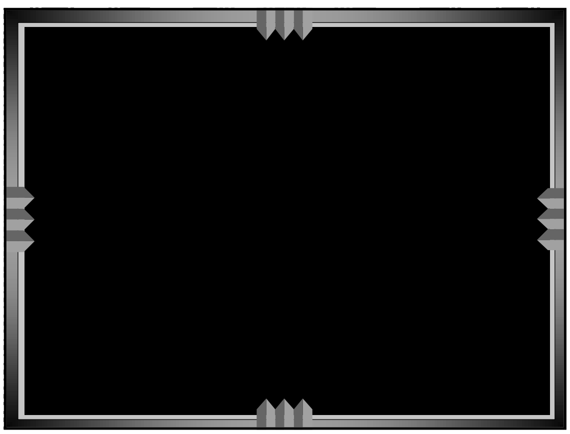

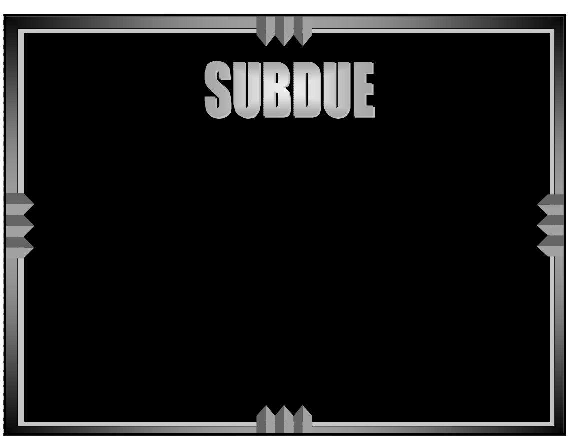
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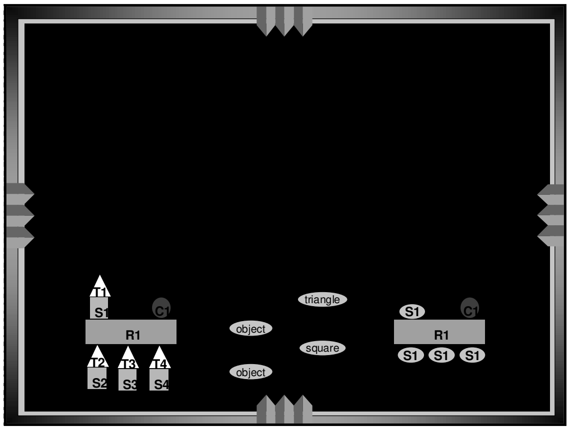
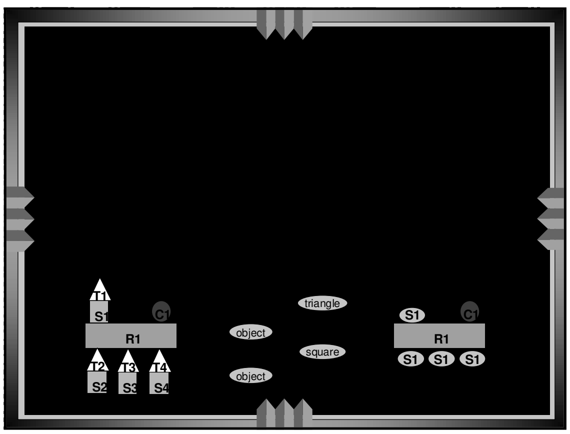

T1
S1
C1
R1
T2
T3
T4
S2
S3
S4
object
object
triangle
square
S1
C1
R1
S1
S1
S1


T1
S1
C1
R1
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S4
object
object
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square
S1
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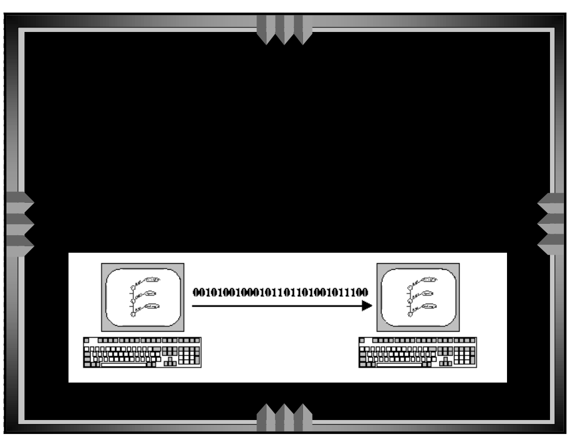
R1
S1
S1
S1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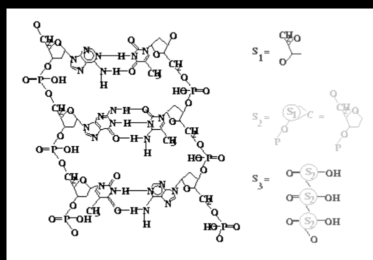
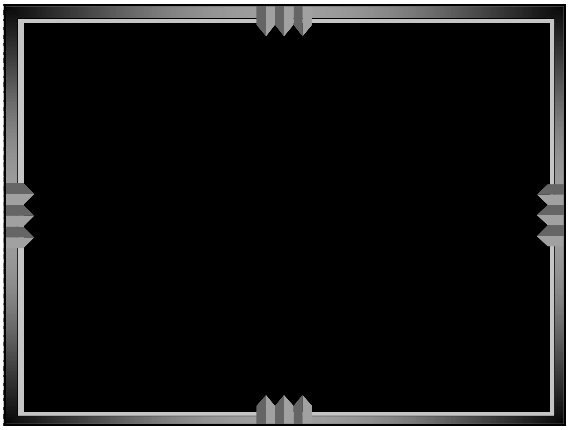
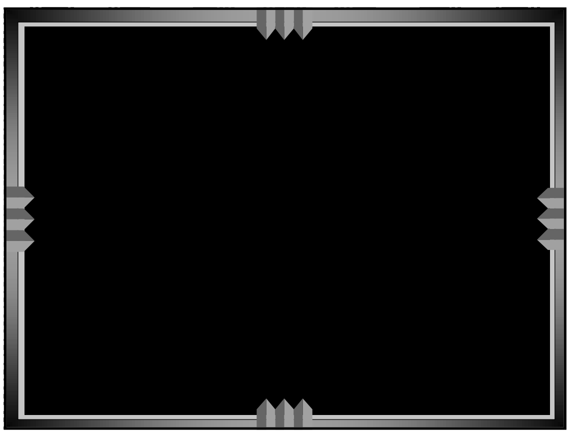
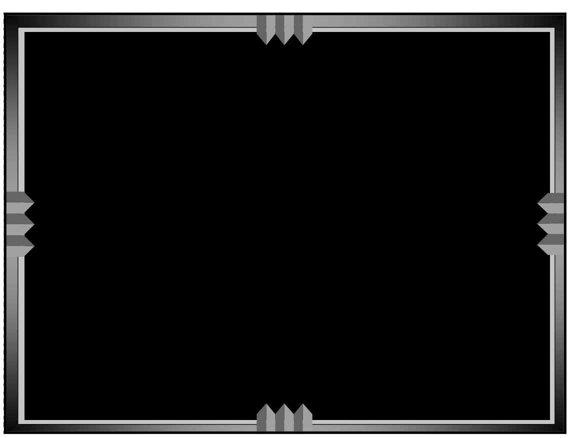
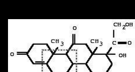
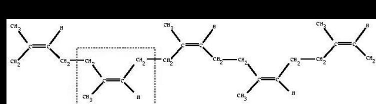


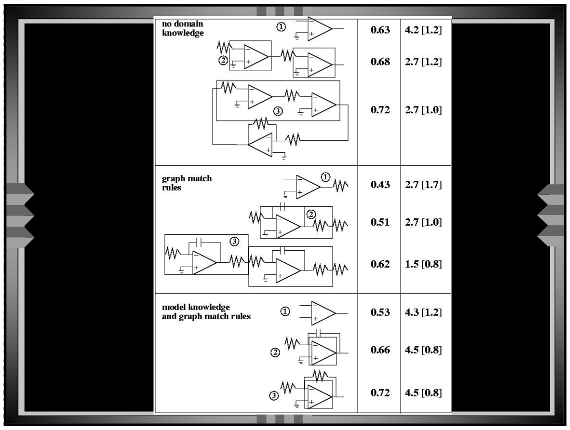


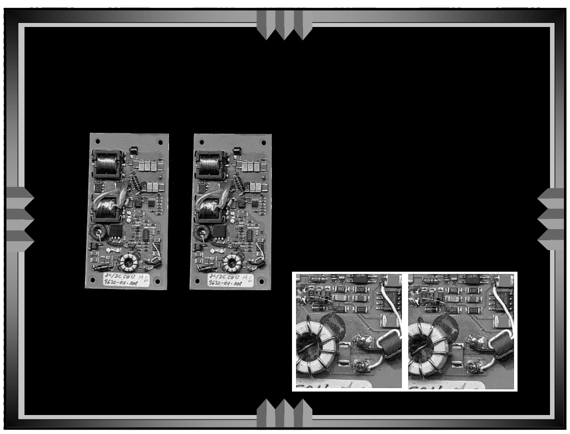


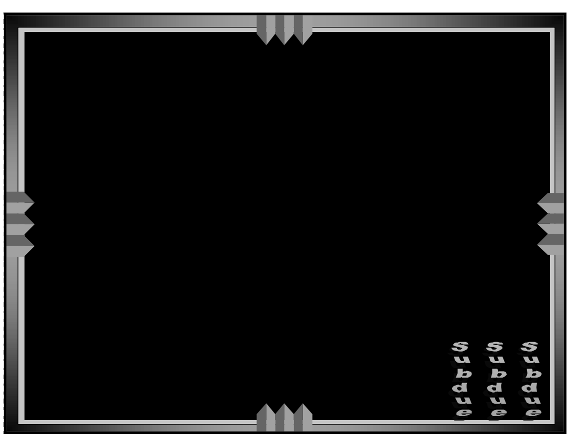


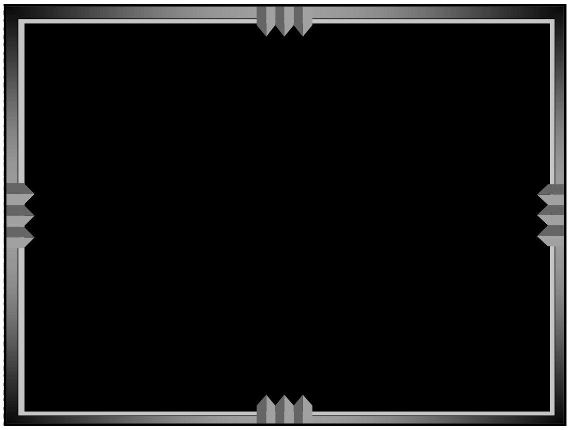


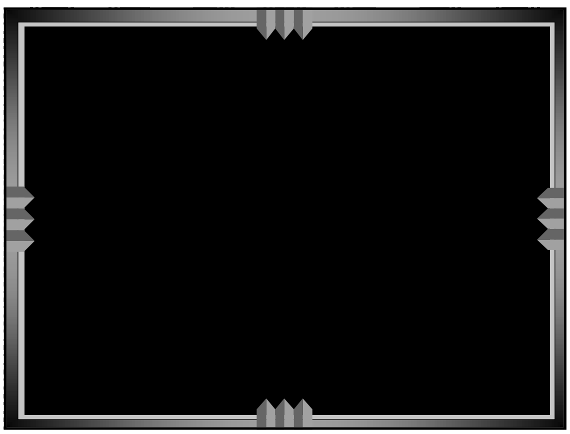


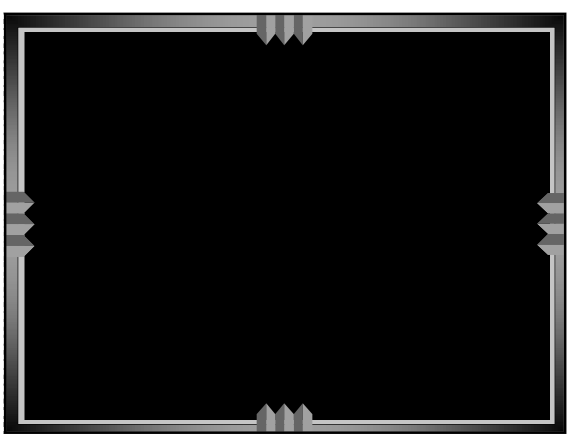

no domain knowledge
0.63
4.2 [1.2]
0.68
2.7 [1.2]
0.72
2.7 [1.0]
graph match rules
0.43
2.7 [1.7]
0.51
2.7 [1.0]
0.62
1.5 [0.8]
model knowledge and graph match rules
0.53
4.3 [1.2]
0.66
4.5 [0.8]
0.72
4.5 [0.8]

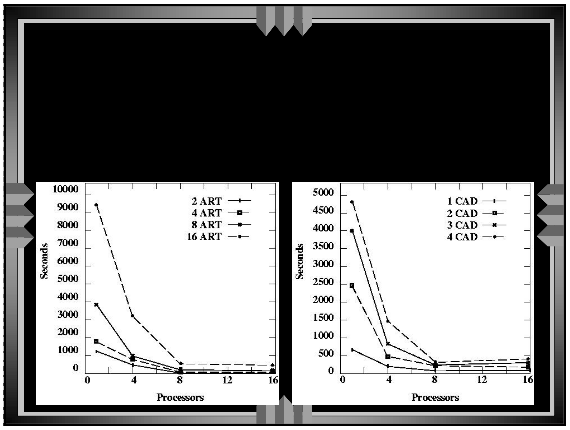


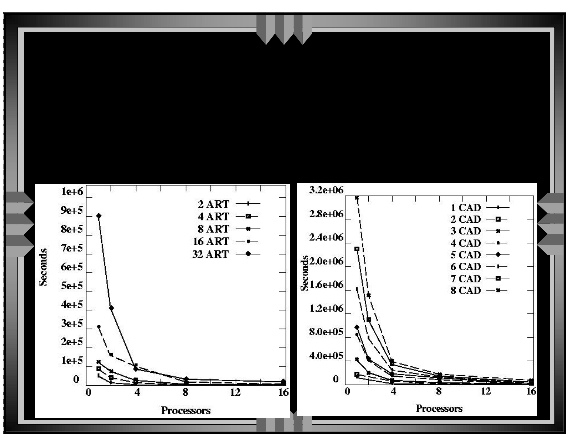

Subdue
Subdue
Subdue








Seconds
Processors
2 ART
4 ART
8 ART
16 ART
1 CAD
2 CAD
3 CAD
4 CAD


Seconds
Processors
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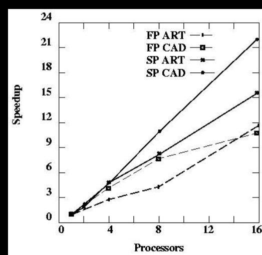
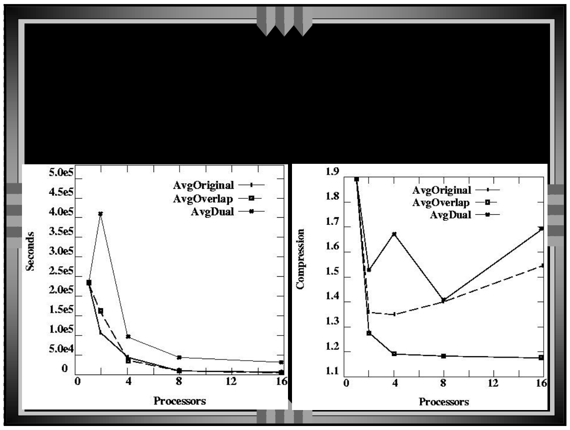
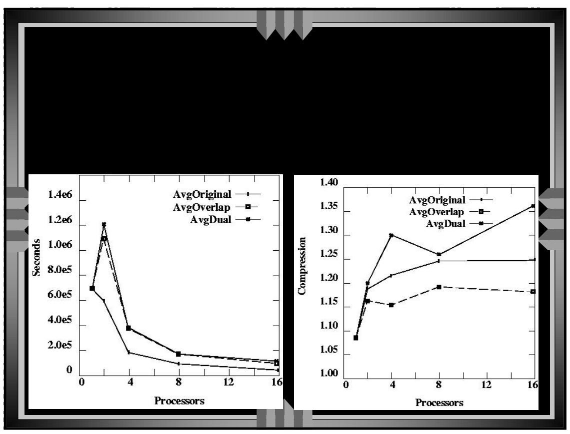
4 ART
8 ART
16 ART
32 ART
1 CAD
2 CAD
3 CAD
4 CAD
5 CAD
6 CAD
7 CAD
8 CAD



Database	1	2	4	8	16
2 ART	2.081	1.979	2.111	2.333	3.080
4 ART	1.969	1.444	1.396	1.333	1.332
8 ART	1.970	1.254	1.147	1.284	1.203
16 ART	1.965	1.094	1.094	1.075	1.073
32 ART	1.866	1.037	1.026	1.025	1.016
1000 Vertices	1.947	2.670	2.920	3.191	3.578
2000 Vertices	2.126	2.709	3.006	3.263	3.348
4000 Vertices	2.131	2.696	2.944	3.140	3.335

Database	1	2	4	8	16
1 CAD	1.081	1.280	1.383	1.538	1.436
2 CAD	1.081	1.261	1.294	1.249	1.238
3 CAD	1.081	1.216	1.217	1.261	1.279
4 CAD	1.081	1.189	1.213	1.257	1.297
5 CAD	1.081	1.164	1.188	1.211	1.220
6 CAD	1.081	1.130	1.137	1.149	1.184
7 CAD	1.081	1.123	1.123	1.149	1.155
8 CAD	1.081	1.106	1.113	1.114	1.159


AvgOriginal
AvgOverlap
AvgDual
Seconds
Processors
AvgOriginal
AvgOverlap
AvgDual
Compression
Processors


AvgOriginal
AvgOverlap
AvgDual
Seconds
Processors
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Compression
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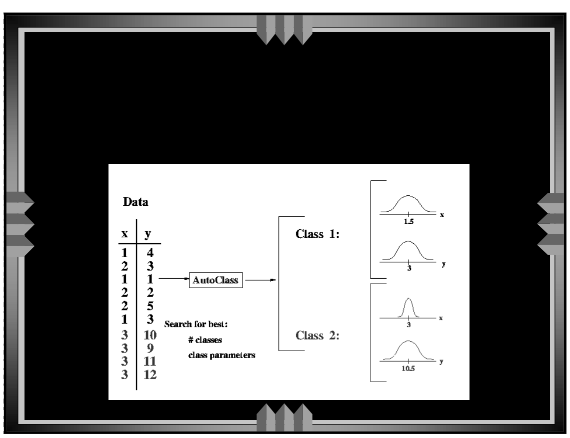
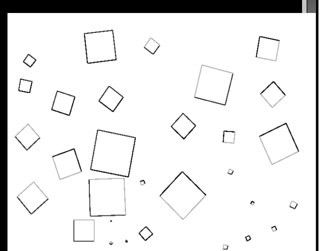
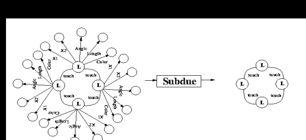
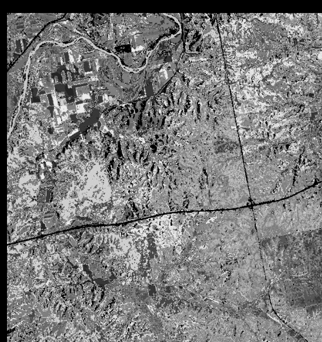
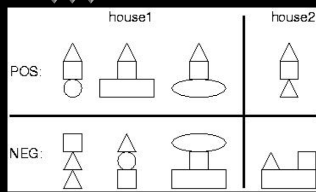
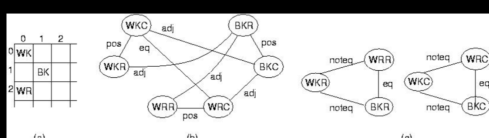

Data
x y
1 4
2 3
1 1
2 2
2 5
1 3
3 10
3 9
3 11
3 12
AutoClass
Search for best:
classes
class parameters
Class 1:
Class 2:
1.5
3
3
10.5

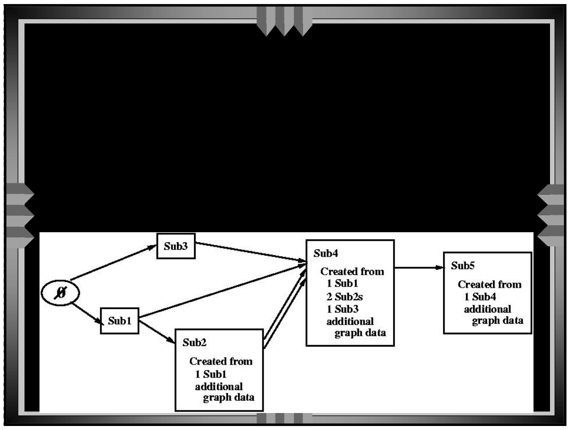



X2
Angle
Length
Color
X1
touch
L
Subdue




house1
house2
POS:
NEG:


0 1 2
WK
BK
WR
WKC
BKR
WKR
BKC
WRR
WRC
pos
adj
eq
noteq
(a)
(b)
(c)


Sub3
Sub1
Sub2
Created from
1 Sub1
additional
graph data
Sub4
Created from
1 Sub1
2 Sub2s
1 Sub3
additional
graph data
Sub5
Created from
1 Sub4
additional
graph data