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Qsn 1:

# Output of the decision tree for Optmized option

tree= 1, node=  1, feature=15, thr= 21.57, gain=0.171177

tree= 1, node=  2, feature= 4, thr= 41.18, gain=0.016817

tree= 1, node=  3, feature=13, thr= 58.82, gain=0.263448

tree= 1, node=  4, feature= 9, thr= 15.69, gain=0.030192

tree= 1, node=  5, feature=10, thr= 39.22, gain=0.007873

tree= 1, node=  6, feature= 0, thr= 35.29, gain=0.003319

tree= 1, node=  7, feature= 8, thr= 56.86, gain=0.204910

tree= 1, node=  8, feature=14, thr= 60.78, gain=0.008166

tree= 1, node=  9, feature= 5, thr= 64.71, gain=0.016976

tree= 1, node= 10, feature=14, thr= 37.25, gain=0.005500

tree= 1, node= 11, feature= 3, thr= 90.20, gain=0.009075

tree= 1, node= 12, feature=14, thr= 37.25, gain=0.004570

tree= 1, node= 13, feature=10, thr= 29.41, gain=0.004927

tree= 1, node= 14, feature=14, thr= 96.08, gain=0.115286

tree= 1, node= 15, feature= 7, thr= 24.33, gain=0.010582

tree= 1, node= 16, feature= 1, thr= 73.53, gain=0.000225

tree= 1, node= 17, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node= 18, feature=15, thr=  0.41, gain=0.019792

tree= 1, node= 19, feature= 9, thr= 60.47, gain=0.012737

tree= 1, node= 20, feature=12, thr= 30.06, gain=0.045173

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tree= 1, node= 21, feature= 8, thr= 34.59, gain=0.000588

tree= 1, node= 22, feature= 6, thr= 72.55, gain=0.018306

tree= 1, node= 23, feature= 7, thr= 77.10, gain=0.005448

tree= 1, node= 24, feature= 1, thr= 84.51, gain=0.008112

tree= 1, node= 25, feature=13, thr= 14.78, gain=0.010684

tree= 1, node= 26, feature=15, thr= 31.18, gain=0.000778

tree= 1, node= 27, feature= 9, thr= 19.61, gain=0.008927

tree= 1, node= 28, feature=11, thr= 31.67, gain=0.017619

tree= 1, node= 29, feature=13, thr= 71.06, gain=0.046137

tree= 1, node= 30, feature= 2, thr= 54.90, gain=0.000670

tree= 1, node= 31, feature= 9, thr= 58.82, gain=0.165928

tree= 1, node= 32, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node= 33, feature= 6, thr= -1.00, gain=0.000000

tree= 1, node= 34, feature= 7, thr= 66.47, gain=0.000000

tree= 1, node= 35, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 36, feature=14, thr= 25.49, gain=0.022833

tree= 1, node= 37, feature= 0, thr= 39.22, gain=0.000353

tree= 1, node= 38, feature= 3, thr= 96.71, gain=0.000000

tree= 1, node= 39, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node= 40, feature= 9, thr=  1.43, gain=0.000227

tree= 1, node= 41, feature= 6, thr= 68.14, gain=0.022807

tree= 1, node= 42, feature=14, thr= 96.08, gain=0.044263

tree= 1, node= 43, feature= 1, thr= 82.35, gain=0.023921

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tree= 1, node= 44, feature= 2, thr= 88.59, gain=0.014297

tree= 1, node= 45, feature= 5, thr= 89.29, gain=0.006092

tree= 1, node= 46, feature= 8, thr= 76.47, gain=0.004424

tree= 1, node= 47, feature= 6, thr= 50.47, gain=0.038524

tree= 1, node= 48, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node= 49, feature= 3, thr= 87.45, gain=0.011421

tree= 1, node= 50, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node= 51, feature= 0, thr= 53.57, gain=0.000449

tree= 1, node= 52, feature=15, thr= 67.29, gain=0.013275

tree= 1, node= 53, feature=10, thr= 67.06, gain=0.028261

tree= 1, node= 54, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node= 55, feature=12, thr= 21.57, gain=0.018615

tree= 1, node= 56, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node= 57, feature= 5, thr= 54.41, gain=0.001217

tree= 1, node= 58, feature= 6, thr= 96.08, gain=0.000631

tree= 1, node= 59, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node= 60, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node= 61, feature= 1, thr=  3.92, gain=0.021497

tree= 1, node= 62, feature= 5, thr= 13.35, gain=0.000000

tree= 1, node= 63, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node= 64, feature= 7, thr= 71.86, gain=0.032849

tree= 1, node= 65, feature=10, thr= 60.78, gain=0.036585

tree= 1, node= 66, feature= 5, thr= -1.00, gain=0.000000

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tree= 1, node= 67, feature= 1, thr= 92.47, gain=0.000147

tree= 1, node= 68, feature= 5, thr= 68.63, gain=0.000000

tree= 1, node= 69, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node= 70, feature= 8, thr= 18.67, gain=0.007784

tree= 1, node= 71, feature= 7, thr= 73.02, gain=0.000053

tree= 1, node= 72, feature=12, thr= 55.47, gain=0.003880

tree= 1, node= 73, feature= 8, thr= 49.82, gain=0.032651

tree= 1, node= 74, feature= 1, thr= 39.18, gain=0.047304

tree= 1, node= 75, feature= 6, thr= -1.00, gain=0.000000

tree= 1, node= 76, feature= 5, thr= 15.69, gain=0.025578

tree= 1, node= 77, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node= 78, feature= 0, thr= 78.43, gain=0.015256

tree= 1, node= 79, feature= 5, thr= 84.31, gain=0.037238

tree= 1, node= 80, feature= 9, thr= -1.00, gain=0.000000

tree= 1, node= 81, feature= 6, thr= 70.59, gain=0.007151

tree= 1, node= 82, feature= 8, thr= -1.00, gain=0.000000

tree= 1, node= 83, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 84, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node= 85, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node= 86, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 87, feature= 8, thr=  1.96, gain=0.000008

tree= 1, node= 88, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 89, feature=14, thr=  1.96, gain=0.000063

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tree= 1, node= 90, feature= 4, thr= 62.75, gain=0.000194

tree= 1, node= 91, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 92, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node= 93, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node= 94, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 95, feature= 1, thr= 26.47, gain=0.001552

tree= 1, node= 96, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node= 97, feature= 6, thr= 45.33, gain=0.006400

tree= 1, node= 98, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node= 99, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=100, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=101, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=102, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=103, feature=13, thr=  6.08, gain=0.000000

tree= 1, node=104, feature=13, thr=  5.10, gain=0.037664

tree= 1, node=105, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=106, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=107, feature= 7, thr= 54.53, gain=0.075519

tree= 1, node=108, feature= 9, thr= -1.00, gain=0.000000

tree= 1, node=109, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=110, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=111, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=112, feature= 5, thr= 74.55, gain=0.000769

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tree= 1, node=113, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=114, feature= 9, thr=  5.61, gain=0.000013

tree= 1, node=115, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=116, feature= 6, thr= 58.29, gain=0.002248

tree= 1, node=117, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=118, feature= 0, thr= 73.33, gain=0.000214

tree= 1, node=119, feature=11, thr=  9.06, gain=0.065426

tree= 1, node=120, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node=121, feature= 7, thr= 67.06, gain=0.049331

tree= 1, node=122, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=123, feature= 0, thr= 60.78, gain=0.012267

tree= 1, node=124, feature= 9, thr= 18.55, gain=0.016989

tree= 1, node=125, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=126, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=127, feature= 1, thr= 79.29, gain=0.003685

tree= 1, node=128, feature= 4, thr= 48.04, gain=0.000980

tree= 1, node=129, feature=11, thr= 39.69, gain=0.021379

tree= 1, node=130, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=131, feature= 7, thr= -1.00, gain=0.000000

tree= 1, node=132, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=133, feature= 8, thr= -1.00, gain=0.000000

tree= 1, node=134, feature= 6, thr= -1.00, gain=0.000000

tree= 1, node=135, feature= 1, thr= -1.00, gain=0.000000

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tree= 1, node=136, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=137, feature= 8, thr= -1.00, gain=0.000000

tree= 1, node=138, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=139, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node=140, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=141, feature= 9, thr= 88.47, gain=0.000000

tree= 1, node=142, feature= 6, thr= 67.45, gain=0.001880

tree= 1, node=143, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=144, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=145, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=146, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=147, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=148, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=149, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=150, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=151, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=152, feature= 1, thr= 89.59, gain=0.000110

tree= 1, node=153, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=154, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=155, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=156, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=157, feature= 3, thr= 89.02, gain=0.000067

tree= 1, node=158, feature= 8, thr= 24.51, gain=0.021367

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tree= 1, node=159, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=160, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=161, feature=14, thr= 52.94, gain=0.011728

tree= 1, node=162, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=163, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node=164, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=165, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node=166, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=167, feature= 2, thr= 45.71, gain=0.000000

tree= 1, node=168, feature= 7, thr= 17.69, gain=0.000000

tree= 1, node=169, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=170, feature= 1, thr= 81.37, gain=0.000339

tree= 1, node=171, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=172, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=173, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=174, feature= 9, thr= -1.00, gain=0.000000

tree= 1, node=175, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=176, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=177, feature=15, thr=  9.12, gain=0.021405

tree= 1, node=178, feature= 6, thr= 21.57, gain=0.011781

tree= 1, node=179, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=180, feature= 1, thr= 66.67, gain=0.000000

tree= 1, node=181, feature= 2, thr= -1.00, gain=0.000000

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tree= 1, node=182, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=183, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=184, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=185, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node=186, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=187, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=188, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=189, feature= 3, thr= 99.12, gain=0.000086

tree= 1, node=190, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=191, feature= 2, thr= 41.47, gain=0.000000

tree= 1, node=192, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=193, feature= 2, thr= 86.33, gain=0.000024

tree= 1, node=194, feature= 7, thr= -1.00, gain=0.000000

tree= 1, node=195, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=196, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=197, feature= 0, thr= -1.00, gain=0.000000

**classification accuracy=0.7842**

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# and, for  randomized value:

tree= 1, node=  1, feature= 9, thr= 29.41, gain=0.013121

tree= 1, node=  2, feature= 0, thr= 49.02, gain=0.227658

tree= 1, node=  3, feature= 9, thr= 57.45, gain=0.014977

tree= 1, node=  4, feature=12, thr= 47.06, gain=0.073539

tree= 1, node=  5, feature= 2, thr= 31.37, gain=0.028222

tree= 1, node=  6, feature= 8, thr= 62.75, gain=0.301268

tree= 1, node=  7, feature=15, thr=  1.96, gain=0.005145

tree= 1, node=  8, feature=10, thr= 25.49, gain=0.108099

tree= 1, node=  9, feature= 4, thr= 23.53, gain=0.081452

tree= 1, node= 10, feature= 8, thr= 23.53, gain=0.015688

tree= 1, node= 11, feature= 1, thr= 92.18, gain=0.454675

tree= 1, node= 12, feature= 6, thr= 37.25, gain=0.013582

tree= 1, node= 13, feature=15, thr= 24.98, gain=0.001722

tree= 1, node= 14, feature= 6, thr= 70.59, gain=0.311688

tree= 1, node= 15, feature= 4, thr= 80.39, gain=0.071078

tree= 1, node= 16, feature=10, thr=  0.49, gain=0.010826

tree= 1, node= 17, feature= 1, thr= 79.29, gain=0.091811

tree= 1, node= 18, feature=12, thr= 77.57, gain=0.001086

tree= 1, node= 19, feature= 8, thr= 35.29, gain=0.025001

tree= 1, node= 20, feature= 2, thr= 11.55, gain=0.013764

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tree= 1, node= 21, feature= 6, thr= 37.25, gain=0.133895

tree= 1, node= 22, feature= 0, thr= 67.65, gain=0.118961

tree= 1, node= 23, feature= 1, thr= 99.04, gain=0.074097

tree= 1, node= 24, feature=13, thr= 41.18, gain=0.273567

tree= 1, node= 25, feature=14, thr= 43.14, gain=0.458328

tree= 1, node= 26, feature=12, thr= 60.78, gain=0.011650

tree= 1, node= 27, feature=11, thr= 17.65, gain=0.027705

tree= 1, node= 28, feature=14, thr= 13.73, gain=0.088560

tree= 1, node= 29, feature= 9, thr= 66.24, gain=0.013111

tree= 1, node= 30, feature=12, thr= 37.65, gain=0.000871

tree= 1, node= 31, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node= 32, feature= 6, thr= 54.90, gain=0.018888

tree= 1, node= 33, feature= 9, thr=  5.12, gain=0.023970

tree= 1, node= 34, feature= 4, thr= 94.12, gain=0.279705

tree= 1, node= 35, feature=13, thr= 58.82, gain=0.115980

tree= 1, node= 36, feature=11, thr= 25.67, gain=0.003420

tree= 1, node= 37, feature=13, thr= 43.53, gain=0.048446

tree= 1, node= 38, feature= 1, thr= 88.88, gain=0.075949

tree= 1, node= 39, feature= 4, thr= 41.88, gain=0.110118

tree= 1, node= 40, feature= 5, thr= 54.65, gain=0.052043

tree= 1, node= 41, feature=11, thr= 41.24, gain=0.054304

tree= 1, node= 42, feature=10, thr= 84.47, gain=0.057087

tree= 1, node= 43, feature=13, thr= 90.59, gain=0.352649

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tree= 1, node= 44, feature= 5, thr= 70.67, gain=0.097558

tree= 1, node= 45, feature=14, thr= 35.29, gain=0.273712

tree= 1, node= 46, feature= 0, thr= 58.82, gain=0.192784

tree= 1, node= 47, feature= 9, thr= 10.24, gain=0.023056

tree= 1, node= 48, feature= 0, thr= 94.12, gain=0.232719

tree= 1, node= 49, feature= 1, thr= 63.33, gain=0.014691

tree= 1, node= 50, feature=11, thr= 45.10, gain=0.011532

tree= 1, node= 51, feature= 7, thr=  1.96, gain=0.057320

tree= 1, node= 52, feature=13, thr= 15.10, gain=0.009387

tree= 1, node= 53, feature= 0, thr=  1.96, gain=0.016021

tree= 1, node= 54, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node= 55, feature= 0, thr= 27.20, gain=0.000109

tree= 1, node= 56, feature= 6, thr= 49.41, gain=0.003099

tree= 1, node= 57, feature=15, thr=  0.02, gain=0.016445

tree= 1, node= 58, feature= 1, thr= 82.00, gain=0.597107

tree= 1, node= 59, feature= 2, thr= 13.73, gain=0.001018

tree= 1, node= 60, feature=12, thr= 31.20, gain=0.008192

tree= 1, node= 61, feature=15, thr= 17.37, gain=0.058111

tree= 1, node= 62, feature=14, thr= 92.04, gain=0.073922

tree= 1, node= 63, feature=12, thr= 32.25, gain=0.085941

tree= 1, node= 64, feature= 4, thr= 62.75, gain=0.124067

tree= 1, node= 65, feature= 7, thr=  1.31, gain=0.016924

tree= 1, node= 66, feature= 1, thr= -1.00, gain=0.000000

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tree= 1, node= 67, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node= 68, feature=11, thr= 18.14, gain=0.021892

tree= 1, node= 69, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node= 70, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node= 71, feature= 4, thr=  0.43, gain=0.001050

tree= 1, node= 72, feature=15, thr=  0.76, gain=0.066930

tree= 1, node= 73, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node= 74, feature= 8, thr=  7.55, gain=0.023177

tree= 1, node= 75, feature=12, thr= 71.45, gain=0.459622

tree= 1, node= 76, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node= 77, feature= 1, thr= 79.14, gain=0.041125

tree= 1, node= 78, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node= 79, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node= 80, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node= 81, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node= 82, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 83, feature=12, thr= 68.24, gain=0.044078

tree= 1, node= 84, feature=11, thr= 51.45, gain=0.110581

tree= 1, node= 85, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node= 86, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 87, feature= 3, thr= 96.29, gain=0.072354

tree= 1, node= 88, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node= 89, feature=12, thr= 66.67, gain=0.073946

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tree= 1, node= 90, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node= 91, feature=10, thr= 60.78, gain=0.145002

tree= 1, node= 92, feature=12, thr= 93.10, gain=0.037439

tree= 1, node= 93, feature=11, thr=  1.39, gain=0.068748

tree= 1, node= 94, feature= 4, thr= 39.22, gain=0.172066

tree= 1, node= 95, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node= 96, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 97, feature=11, thr= 69.18, gain=0.004265

tree= 1, node= 98, feature=11, thr=  1.73, gain=0.046858

tree= 1, node= 99, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=100, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=101, feature= 8, thr= 27.96, gain=0.022693

tree= 1, node=102, feature= 3, thr= 97.29, gain=0.210961

tree= 1, node=103, feature= 5, thr= 31.12, gain=0.003166

tree= 1, node=104, feature=13, thr= 16.69, gain=0.041141

tree= 1, node=105, feature=12, thr= 69.41, gain=0.000315

tree= 1, node=106, feature= 8, thr= 66.67, gain=0.018295

tree= 1, node=107, feature= 3, thr= 42.63, gain=0.000767

tree= 1, node=108, feature=13, thr= 18.55, gain=0.002960

tree= 1, node=109, feature=11, thr= 47.35, gain=0.008401

tree= 1, node=110, feature= 4, thr= 25.49, gain=0.061371

tree= 1, node=111, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=112, feature= 3, thr= 91.37, gain=0.101167

Nabin Chapagain
1001551151

tree= 1, node=113, feature=13, thr= 23.53, gain=0.029114

tree= 1, node=114, feature= 8, thr= 73.65, gain=0.079197

tree= 1, node=115, feature=15, thr=  0.02, gain=0.011594

tree= 1, node=116, feature= 6, thr=  1.96, gain=0.023229

tree= 1, node=117, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=118, feature=14, thr=  1.61, gain=0.058149

tree= 1, node=119, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=120, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=121, feature= 1, thr= 76.47, gain=0.055084

tree= 1, node=122, feature= 4, thr= 95.29, gain=0.246258

tree= 1, node=123, feature= 9, thr=  0.57, gain=0.015692

tree= 1, node=124, feature= 5, thr= 60.49, gain=0.041717

tree= 1, node=125, feature= 0, thr= 13.82, gain=0.002608

tree= 1, node=126, feature= 3, thr= 57.63, gain=0.000207

tree= 1, node=127, feature= 6, thr= 52.12, gain=0.016069

tree= 1, node=128, feature= 5, thr= 64.45, gain=0.004092

tree= 1, node=129, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=130, feature= 2, thr= 11.24, gain=0.022709

tree= 1, node=131, feature=15, thr= 59.02, gain=0.003748

tree= 1, node=132, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=133, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=134, feature=10, thr= 38.67, gain=0.020373

tree= 1, node=135, feature= 9, thr=  0.57, gain=0.009631

Nabin Chapagain
1001551151

tree= 1, node=136, feature=10, thr= 25.10, gain=0.055367

tree= 1, node=137, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=138, feature=11, thr= 15.06, gain=0.031467

tree= 1, node=139, feature= 6, thr= 63.12, gain=0.030525

tree= 1, node=140, feature= 1, thr= 99.29, gain=0.208317

tree= 1, node=141, feature= 2, thr= 19.35, gain=0.037986

tree= 1, node=142, feature= 9, thr=  0.10, gain=0.000326

tree= 1, node=143, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=144, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=145, feature= 8, thr= 48.24, gain=0.186114

tree= 1, node=146, feature= 4, thr= 50.98, gain=0.153742

tree= 1, node=147, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=148, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=149, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=150, feature= 5, thr= 45.35, gain=0.000117

tree= 1, node=151, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=152, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node=153, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node=154, feature= 9, thr= 44.29, gain=0.087281

tree= 1, node=155, feature=10, thr= 41.18, gain=0.149261

tree= 1, node=156, feature= 0, thr= 46.59, gain=0.064217

tree= 1, node=157, feature=13, thr= 99.18, gain=0.280808

tree= 1, node=158, feature= 2, thr= -1.00, gain=0.000000

Nabin Chapagain
1001551151

tree= 1, node=159, feature= 5, thr= 87.35, gain=0.016340

tree= 1, node=160, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=161, feature= 8, thr= 48.67, gain=0.040165

tree= 1, node=162, feature=12, thr= 36.47, gain=0.059235

tree= 1, node=163, feature= 1, thr= 88.39, gain=0.044958

tree= 1, node=164, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=165, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=166, feature= 7, thr= 72.33, gain=0.103825

tree= 1, node=167, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=168, feature= 5, thr= 73.65, gain=0.141156

tree= 1, node=169, feature=15, thr=  0.18, gain=0.062406

tree= 1, node=170, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=171, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=172, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=173, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=174, feature= 4, thr= 19.61, gain=0.004353

tree= 1, node=175, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=176, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=177, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=178, feature=11, thr= 78.98, gain=0.005743

tree= 1, node=179, feature=10, thr= 78.59, gain=0.075835

tree= 1, node=180, feature= 8, thr= 20.59, gain=0.048692

tree= 1, node=181, feature= 0, thr= -1.00, gain=0.000000

Nabin Chapagain
1001551151

tree= 1, node=182, feature=15, thr=  0.02, gain=0.028210

tree= 1, node=183, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=184, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=185, feature= 0, thr=  3.92, gain=0.023778

tree= 1, node=186, feature=13, thr= 20.08, gain=0.014393

tree= 1, node=187, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=188, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=189, feature=12, thr= 21.27, gain=0.003507

tree= 1, node=190, feature= 8, thr= 73.65, gain=0.041339

tree= 1, node=191, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=192, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=193, feature=13, thr= 54.90, gain=0.067437

tree= 1, node=194, feature= 1, thr= 75.29, gain=0.100946

tree= 1, node=195, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=196, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=197, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=198, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=199, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=200, feature=14, thr= 60.78, gain=0.004246

tree= 1, node=201, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=202, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=203, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node=204, feature= 2, thr= -1.00, gain=0.000000

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1001551151

tree= 1, node=205, feature= 1, thr= 79.29, gain=0.239646

tree= 1, node=206, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=207, feature= 0, thr=  6.45, gain=0.029441

tree= 1, node=208, feature= 4, thr=  0.00, gain=0.000000

tree= 1, node=209, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=210, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=211, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=212, feature= 8, thr=  3.02, gain=0.001615

tree= 1, node=213, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=214, feature=15, thr= 19.61, gain=0.074693

tree= 1, node=215, feature=11, thr= 32.35, gain=0.018671

tree= 1, node=216, feature= 6, thr= 33.41, gain=0.012748

tree= 1, node=217, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=218, feature=14, thr= 15.69, gain=0.469591

tree= 1, node=219, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=220, feature= 0, thr= 25.29, gain=0.068948

tree= 1, node=221, feature= 6, thr= 95.06, gain=0.050167

tree= 1, node=222, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=223, feature= 2, thr= 16.18, gain=0.001468

tree= 1, node=224, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=225, feature= 0, thr= 61.18, gain=0.024080

tree= 1, node=226, feature= 8, thr= 32.35, gain=0.001377

tree= 1, node=227, feature= 1, thr= -1.00, gain=0.000000

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1001551151

tree= 1, node=228, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=229, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=230, feature= 8, thr= -1.00, gain=0.000000

tree= 1, node=231, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=232, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=233, feature= 3, thr= 88.35, gain=0.006851

tree= 1, node=234, feature= 9, thr= 43.18, gain=0.060025

tree= 1, node=235, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=236, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=237, feature=14, thr= 22.69, gain=0.034664

tree= 1, node=238, feature= 1, thr= 83.53, gain=0.010531

tree= 1, node=239, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=240, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node=241, feature=13, thr=100.00, gain=0.000000

tree= 1, node=242, feature= 4, thr= 90.20, gain=0.184249

tree= 1, node=243, feature=12, thr= 58.35, gain=0.008954

tree= 1, node=244, feature=13, thr= 12.35, gain=0.052372

tree= 1, node=245, feature=13, thr= 14.12, gain=0.039754

tree= 1, node=246, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=247, feature=12, thr= 54.39, gain=0.060372

tree= 1, node=248, feature= 6, thr= 78.31, gain=0.081603

tree= 1, node=249, feature= 5, thr= 75.53, gain=0.006429

tree= 1, node=250, feature= 2, thr= -1.00, gain=0.000000

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tree= 1, node=251, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=252, feature=14, thr=  9.25, gain=0.000638

tree= 1, node=253, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=254, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=255, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=256, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=257, feature= 1, thr= 84.31, gain=0.027716

tree= 1, node=258, feature=14, thr= 96.63, gain=0.014352

tree= 1, node=259, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=260, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=261, feature=14, thr= 26.71, gain=0.002510

tree= 1, node=262, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=263, feature= 4, thr= 48.04, gain=0.026798

tree= 1, node=264, feature= 1, thr= 99.29, gain=0.438583

tree= 1, node=265, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=266, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=267, feature= 4, thr= 35.18, gain=0.005131

tree= 1, node=268, feature=15, thr=  0.00, gain=0.000000

tree= 1, node=269, feature= 0, thr= 33.33, gain=0.036488

tree= 1, node=270, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=271, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=272, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=273, feature= 0, thr= 70.35, gain=0.006176

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tree= 1, node=274, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=275, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=276, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=277, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=278, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=279, feature= 0, thr=  0.25, gain=0.000851

tree= 1, node=280, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=281, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=282, feature= 7, thr= -1.00, gain=0.000000

tree= 1, node=283, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=284, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=285, feature=15, thr=  1.96, gain=0.041779

tree= 1, node=286, feature= 0, thr= 29.18, gain=0.000223

tree= 1, node=287, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=288, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=289, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=290, feature= 1, thr= 75.00, gain=0.001839

tree= 1, node=291, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=292, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=293, feature= 6, thr= 36.35, gain=0.014240

tree= 1, node=294, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=295, feature=12, thr= 49.35, gain=0.018559

tree= 1, node=296, feature= 0, thr=  2.45, gain=0.003348

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tree= 1, node=297, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=298, feature=15, thr= 13.45, gain=0.049006

tree= 1, node=299, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=300, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=301, feature= 2, thr= 21.12, gain=0.000908

tree= 1, node=302, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=303, feature= 1, thr= 99.45, gain=0.271019

tree= 1, node=304, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=305, feature= 8, thr= -1.00, gain=0.000000

tree= 1, node=306, feature=14, thr= 59.57, gain=0.034811

tree= 1, node=307, feature=11, thr= 13.76, gain=0.000783

tree= 1, node=308, feature= 3, thr= 71.53, gain=0.011271

tree= 1, node=309, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=310, feature= 0, thr= 12.71, gain=0.007024

tree= 1, node=311, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=312, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=313, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=314, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=315, feature= 4, thr= 70.59, gain=0.042787

tree= 1, node=316, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=317, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=318, feature= 6, thr= 56.24, gain=0.022425

tree= 1, node=319, feature= 1, thr= -1.00, gain=0.000000

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1001551151

tree= 1, node=320, feature=14, thr= 57.00, gain=0.078114

tree= 1, node=321, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=322, feature= 8, thr= 61.24, gain=0.083480

tree= 1, node=323, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=324, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=325, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=326, feature=10, thr= 99.35, gain=0.020672

tree= 1, node=327, feature=13, thr=  0.25, gain=0.014054

tree= 1, node=328, feature=12, thr= 41.24, gain=0.039289

tree= 1, node=329, feature= 2, thr= 52.45, gain=0.015995

tree= 1, node=330, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=331, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=332, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=333, feature= 9, thr= 69.12, gain=0.026386

tree= 1, node=334, feature= 7, thr= 58.24, gain=0.178755

tree= 1, node=335, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=336, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=337, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=338, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=339, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=340, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=341, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=342, feature= 1, thr= 88.71, gain=0.141912

Nabin Chapagain
1001551151

tree= 1, node=343, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=344, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=345, feature=10, thr= 57.20, gain=0.044851

tree= 1, node=346, feature= 0, thr= 30.41, gain=0.000251

tree= 1, node=347, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=348, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=349, feature= 9, thr= -1.00, gain=0.000000

tree= 1, node=350, feature= 8, thr= 24.78, gain=0.000256

tree= 1, node=351, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=352, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=353, feature= 0, thr= 47.16, gain=0.058035

tree= 1, node=354, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=355, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=356, feature= 6, thr= 42.00, gain=0.074704

tree= 1, node=357, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=358, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=359, feature=14, thr=100.00, gain=0.000000

tree= 1, node=360, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=361, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=362, feature=11, thr=  8.41, gain=0.006421

tree= 1, node=363, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=364, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=365, feature= 7, thr= 35.82, gain=0.000789

Nabin Chapagain
1001551151

tree= 1, node=366, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=367, feature= 7, thr=  0.63, gain=0.001673

tree= 1, node=368, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=369, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=370, feature= 6, thr= -1.00, gain=0.000000

tree= 1, node=371, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=372, feature= 6, thr= -1.00, gain=0.000000

tree= 1, node=373, feature= 6, thr= 35.69, gain=0.041141

tree= 1, node=374, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=375, feature=10, thr= 13.73, gain=0.031793

tree= 1, node=376, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=377, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=378, feature=10, thr= 21.57, gain=0.449526

tree= 1, node=379, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=380, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=381, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=382, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=383, feature=13, thr=  1.18, gain=0.001380

tree= 1, node=384, feature=15, thr=  6.08, gain=0.044751

tree= 1, node=385, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=386, feature=15, thr=  5.18, gain=0.012519

tree= 1, node=387, feature= 9, thr= 49.37, gain=0.000674

tree= 1, node=388, feature= 1, thr= 82.12, gain=0.032730

Nabin Chapagain
1001551151

tree= 1, node=389, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=390, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=391, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=392, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=393, feature= 4, thr= 63.33, gain=0.213831

tree= 1, node=394, feature=11, thr= 50.67, gain=0.040299

tree= 1, node=395, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=396, feature= 4, thr=  8.33, gain=0.003653

tree= 1, node=397, feature=13, thr= 24.47, gain=0.001468

tree= 1, node=398, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=399, feature=15, thr=  0.00, gain=0.000000

tree= 1, node=400, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=401, feature= 6, thr= 99.43, gain=0.194554

tree= 1, node=402, feature=15, thr=  0.00, gain=0.000000

tree= 1, node=403, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=404, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=405, feature= 7, thr= -1.00, gain=0.000000

tree= 1, node=406, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=407, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=408, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=409, feature= 9, thr=  6.49, gain=0.001051

tree= 1, node=410, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=411, feature= 4, thr= 65.82, gain=0.017804

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tree= 1, node=412, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=413, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=414, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=415, feature= 7, thr= -1.00, gain=0.000000

tree= 1, node=416, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=417, feature= 6, thr= -1.00, gain=0.000000

tree= 1, node=418, feature= 1, thr=100.00, gain=0.000000

tree= 1, node=419, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=420, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=421, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=422, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=423, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=424, feature= 9, thr= 48.25, gain=0.175779

tree= 1, node=425, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=426, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=427, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=428, feature= 4, thr= 46.31, gain=0.056313

tree= 1, node=429, feature=12, thr= 45.53, gain=0.000470

tree= 1, node=430, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=431, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=432, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=433, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=434, feature= 0, thr= -1.00, gain=0.000000

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tree= 1, node=435, feature= 1, thr= 96.12, gain=0.002197

tree= 1, node=436, feature= 5, thr= 70.59, gain=0.054730

tree= 1, node=437, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=438, feature= 5, thr= 71.41, gain=0.029345

tree= 1, node=439, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=440, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=441, feature= 8, thr= 98.20, gain=0.185869

tree= 1, node=442, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=443, feature= 2, thr=  1.02, gain=0.002471

tree= 1, node=444, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=445, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=446, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=447, feature= 4, thr= 58.43, gain=0.011335

tree= 1, node=448, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=449, feature= 4, thr= 66.29, gain=0.000234

tree= 1, node=450, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=451, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=452, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=453, feature= 9, thr=  0.20, gain=0.000566

tree= 1, node=454, feature=13, thr=  0.02, gain=0.006667

tree= 1, node=455, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=456, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=457, feature= 9, thr= 46.24, gain=0.002939

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tree= 1, node=458, feature= 7, thr= 43.51, gain=0.000620

tree= 1, node=459, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=460, feature=13, thr=  1.18, gain=0.001467

tree= 1, node=461, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=462, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=463, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=464, feature=14, thr= 42.59, gain=0.000678

tree= 1, node=465, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=466, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=467, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=468, feature=12, thr= 75.39, gain=0.002334

tree= 1, node=469, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=470, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=471, feature= 5, thr= 93.12, gain=0.021606

tree= 1, node=472, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=473, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=474, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=475, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=476, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=477, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=478, feature= 0, thr= 75.18, gain=0.139233

tree= 1, node=479, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=480, feature= 0, thr= -1.00, gain=0.000000

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tree= 1, node=481, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=482, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=483, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=484, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=485, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=486, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=487, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=488, feature=11, thr= 68.14, gain=0.043242

tree= 1, node=489, feature= 1, thr= 77.45, gain=0.107278

tree= 1, node=490, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=491, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=492, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=493, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=494, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=495, feature= 0, thr= -1.00, gain=0.000000

**classification accuracy=0.4460**

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## and for forest3:

tree= 1, node=  1, feature= 9, thr= 29.41, gain=0.013121

tree= 1, node=  2, feature=14, thr= 68.63, gain=0.571084

tree= 1, node=  3, feature=12, thr= 64.71, gain=0.078791

tree= 1, node=  4, feature= 9, thr= 12.51, gain=0.032035

tree= 1, node=  5, feature= 5, thr= 55.14, gain=0.102288

tree= 1, node=  6, feature=14, thr= 15.69, gain=0.225881

tree= 1, node=  7, feature= 5, thr= 64.71, gain=0.153156

tree= 1, node=  8, feature=12, thr= 72.55, gain=0.058697

tree= 1, node=  9, feature= 0, thr= 78.43, gain=0.334843

tree= 1, node= 10, feature= 5, thr= 47.41, gain=0.038140

tree= 1, node= 11, feature= 7, thr= 44.35, gain=0.002163

tree= 1, node= 12, feature= 2, thr= 21.57, gain=0.087237

tree= 1, node= 13, feature=11, thr= 58.82, gain=0.113186

tree= 1, node= 14, feature= 6, thr= 49.02, gain=0.060973

tree= 1, node= 15, feature= 4, thr= 35.29, gain=0.076487

tree= 1, node= 16, feature=14, thr= 38.67, gain=0.009237

tree= 1, node= 17, feature= 2, thr= 29.41, gain=0.007119

tree= 1, node= 18, feature= 0, thr=  6.12, gain=0.026554

tree= 1, node= 19, feature=13, thr= 35.29, gain=0.358657

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tree= 1, node= 20, feature= 1, thr= 99.20, gain=0.193082

tree= 1, node= 21, feature= 3, thr= 72.98, gain=0.369391

tree= 1, node= 22, feature= 3, thr= 88.57, gain=0.231741

tree= 1, node= 23, feature=11, thr=  0.94, gain=0.003338

tree= 1, node= 24, feature=13, thr= 49.02, gain=0.279579

tree= 1, node= 25, feature= 7, thr= 76.47, gain=0.107279

tree= 1, node= 26, feature=11, thr= 32.98, gain=0.057891

tree= 1, node= 27, feature= 9, thr= 65.69, gain=0.085764

tree= 1, node= 28, feature=11, thr= 58.20, gain=0.001790

tree= 1, node= 29, feature= 1, thr= 98.04, gain=0.342380

tree= 1, node= 30, feature=15, thr=  0.25, gain=0.002210

tree= 1, node= 31, feature= 2, thr= 66.67, gain=0.132297

tree= 1, node= 32, feature= 5, thr= 75.00, gain=0.037686

tree= 1, node= 33, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node= 34, feature= 0, thr= 82.35, gain=0.066148

tree= 1, node= 35, feature= 7, thr= 14.75, gain=0.014900

tree= 1, node= 36, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node= 37, feature=11, thr= 41.80, gain=0.010563

tree= 1, node= 38, feature= 0, thr= 92.18, gain=0.103966

tree= 1, node= 39, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node= 40, feature=14, thr= 88.45, gain=0.228143

tree= 1, node= 41, feature=10, thr= 39.22, gain=0.523331

tree= 1, node= 42, feature= 3, thr= -1.00, gain=0.000000

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tree= 1, node= 43, feature=11, thr= 28.25, gain=0.036228

tree= 1, node= 44, feature=10, thr= 29.41, gain=0.279278

tree= 1, node= 45, feature= 9, thr=  0.57, gain=0.006288

tree= 1, node= 46, feature= 5, thr= 97.10, gain=0.144071

tree= 1, node= 47, feature=11, thr=  9.29, gain=0.015896

tree= 1, node= 48, feature=12, thr= 42.47, gain=0.075664

tree= 1, node= 49, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node= 50, feature= 0, thr= 64.71, gain=0.273437

tree= 1, node= 51, feature= 7, thr= 94.14, gain=0.079566

tree= 1, node= 52, feature=10, thr= 39.22, gain=0.138749

tree= 1, node= 53, feature= 7, thr= 67.08, gain=0.274448

tree= 1, node= 54, feature= 2, thr=  7.84, gain=0.088609

tree= 1, node= 55, feature=14, thr= 60.47, gain=0.031183

tree= 1, node= 56, feature= 7, thr= 55.16, gain=0.038447

tree= 1, node= 57, feature= 7, thr= 15.37, gain=0.026261

tree= 1, node= 58, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 59, feature= 7, thr= 57.65, gain=0.036002

tree= 1, node= 60, feature= 9, thr= 56.08, gain=0.024578

tree= 1, node= 61, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node= 62, feature=13, thr= 13.25, gain=0.015776

tree= 1, node= 63, feature=15, thr= 16.57, gain=0.043798

tree= 1, node= 64, feature=10, thr= 98.04, gain=0.062667

tree= 1, node= 65, feature= 2, thr= -1.00, gain=0.000000

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1001551151

tree= 1, node= 66, feature=14, thr= 24.00, gain=0.009174

tree= 1, node= 67, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node= 68, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node= 69, feature=15, thr= 68.63, gain=0.044750

tree= 1, node= 70, feature=10, thr= 52.94, gain=0.421916

tree= 1, node= 71, feature= 0, thr= 54.33, gain=0.036347

tree= 1, node= 72, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 73, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 74, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 75, feature= 4, thr= 65.06, gain=0.000339

tree= 1, node= 76, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 77, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 78, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 79, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node= 80, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node= 81, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node= 82, feature= 2, thr= 19.61, gain=0.003276

tree= 1, node= 83, feature= 6, thr= 61.76, gain=0.007460

tree= 1, node= 84, feature=12, thr= 39.22, gain=0.004158

tree= 1, node= 85, feature= 4, thr= 84.31, gain=0.149505

tree= 1, node= 86, feature= 9, thr=  0.57, gain=0.030468

tree= 1, node= 87, feature= 4, thr= 39.22, gain=0.014964

tree= 1, node= 88, feature= 4, thr= -1.00, gain=0.000000

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tree= 1, node= 89, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node= 90, feature=12, thr= 32.63, gain=0.011298

tree= 1, node= 91, feature= 4, thr= 70.59, gain=0.166615

tree= 1, node= 92, feature=10, thr= 60.76, gain=0.155314

tree= 1, node= 93, feature=10, thr= 59.41, gain=0.112761

tree= 1, node= 94, feature=15, thr= 15.29, gain=0.034194

tree= 1, node= 95, feature= 3, thr= 89.18, gain=0.349813

tree= 1, node= 96, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node= 97, feature= 2, thr= 25.49, gain=0.042232

tree= 1, node= 98, feature= 2, thr=  0.14, gain=0.011904

tree= 1, node= 99, feature= 3, thr= 65.49, gain=0.095824

tree= 1, node=100, feature=10, thr= 81.88, gain=0.087368

tree= 1, node=101, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=102, feature=15, thr=  1.96, gain=0.101067

tree= 1, node=103, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=104, feature= 9, thr= 34.12, gain=0.000173

tree= 1, node=105, feature= 2, thr= 51.88, gain=0.109490

tree= 1, node=106, feature= 1, thr=100.00, gain=0.000000

tree= 1, node=107, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=108, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=109, feature=10, thr= 73.53, gain=0.008068

tree= 1, node=110, feature= 6, thr= 46.75, gain=0.055240

tree= 1, node=111, feature= 2, thr= 10.35, gain=0.021116

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tree= 1, node=112, feature= 0, thr= 35.39, gain=0.008937

tree= 1, node=113, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node=114, feature= 2, thr= 15.69, gain=0.015800

tree= 1, node=115, feature=15, thr= 33.33, gain=0.060768

tree= 1, node=116, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=117, feature= 2, thr=  5.12, gain=0.007142

tree= 1, node=118, feature= 5, thr= 68.82, gain=0.033026

tree= 1, node=119, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=120, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=121, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=122, feature= 6, thr= 68.63, gain=0.010179

tree= 1, node=123, feature= 4, thr= 15.69, gain=0.085934

tree= 1, node=124, feature= 4, thr= 48.76, gain=0.016946

tree= 1, node=125, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node=126, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=127, feature= 1, thr= 79.82, gain=0.028046

tree= 1, node=128, feature=13, thr= 25.29, gain=0.015598

tree= 1, node=129, feature= 8, thr= 48.94, gain=0.075268

tree= 1, node=130, feature= 7, thr= 67.24, gain=0.039881

tree= 1, node=131, feature=12, thr= 50.59, gain=0.017274

tree= 1, node=132, feature= 8, thr= 59.02, gain=0.042522

tree= 1, node=133, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=134, feature= 1, thr= -1.00, gain=0.000000

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tree= 1, node=135, feature= 2, thr= 35.29, gain=0.029543

tree= 1, node=136, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=137, feature= 2, thr= 45.53, gain=0.007489

tree= 1, node=138, feature= 7, thr= 57.35, gain=0.207697

tree= 1, node=139, feature= 0, thr= 33.88, gain=0.005563

tree= 1, node=140, feature=10, thr= 19.61, gain=0.032238

tree= 1, node=141, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=142, feature=12, thr= 25.98, gain=0.022764

tree= 1, node=143, feature= 6, thr= 58.82, gain=0.145794

tree= 1, node=144, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=145, feature=14, thr=  8.16, gain=0.003651

tree= 1, node=146, feature=15, thr=  7.06, gain=0.001086

tree= 1, node=147, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=148, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=149, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=150, feature= 2, thr=  4.41, gain=0.002046

tree= 1, node=151, feature= 1, thr= 84.51, gain=0.124847

tree= 1, node=152, feature=10, thr= 38.53, gain=0.102600

tree= 1, node=153, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=154, feature= 6, thr= 33.33, gain=0.033292

tree= 1, node=155, feature= 1, thr= 96.55, gain=0.185884

tree= 1, node=156, feature= 1, thr= 94.12, gain=0.673543

tree= 1, node=157, feature= 2, thr= -1.00, gain=0.000000

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tree= 1, node=158, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=159, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=160, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=161, feature= 8, thr= -1.00, gain=0.000000

tree= 1, node=162, feature= 6, thr= 18.25, gain=0.001410

tree= 1, node=163, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=164, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=165, feature=12, thr= 76.67, gain=0.000355

tree= 1, node=166, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=167, feature=15, thr=  0.00, gain=0.000000

tree= 1, node=168, feature= 2, thr= 49.84, gain=0.038053

tree= 1, node=169, feature=15, thr=  1.22, gain=0.091402

tree= 1, node=170, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=171, feature= 5, thr= 99.31, gain=0.060276

tree= 1, node=172, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=173, feature= 0, thr= 43.59, gain=0.000745

tree= 1, node=174, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=175, feature= 3, thr= 97.06, gain=0.036164

tree= 1, node=176, feature=15, thr=  9.06, gain=0.000128

tree= 1, node=177, feature= 9, thr=  0.24, gain=0.037744

tree= 1, node=178, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=179, feature=15, thr= 39.22, gain=0.125118

tree= 1, node=180, feature= 6, thr= -1.00, gain=0.000000

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tree= 1, node=181, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=182, feature= 4, thr= 31.37, gain=0.066406

tree= 1, node=183, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=184, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=185, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=186, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=187, feature= 3, thr= 83.43, gain=0.300391

tree= 1, node=188, feature=11, thr= 15.37, gain=0.049614

tree= 1, node=189, feature= 6, thr=  1.96, gain=0.008307

tree= 1, node=190, feature=15, thr=  0.78, gain=0.000231

tree= 1, node=191, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=192, feature= 8, thr= 34.33, gain=0.013040

tree= 1, node=193, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=194, feature= 6, thr= 44.84, gain=0.019032

tree= 1, node=195, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=196, feature=14, thr= 92.04, gain=0.059972

tree= 1, node=197, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=198, feature= 8, thr= 33.41, gain=0.037495

tree= 1, node=199, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=200, feature=14, thr=100.00, gain=0.000000

tree= 1, node=201, feature= 8, thr= 43.29, gain=0.017230

tree= 1, node=202, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=203, feature= 0, thr= -1.00, gain=0.000000

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tree= 1, node=204, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=205, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=206, feature=10, thr= 98.69, gain=0.029810

tree= 1, node=207, feature= 7, thr= 40.24, gain=0.112269

tree= 1, node=208, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=209, feature= 1, thr= 82.12, gain=0.163551

tree= 1, node=210, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=211, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=212, feature= 3, thr= 89.41, gain=0.380064

tree= 1, node=213, feature=13, thr=  2.20, gain=0.002068

tree= 1, node=214, feature= 1, thr= 56.37, gain=0.029311

tree= 1, node=215, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=216, feature= 1, thr= 96.82, gain=0.165308

tree= 1, node=217, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=218, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=219, feature= 6, thr= 94.51, gain=0.076384

tree= 1, node=220, feature= 6, thr= 56.86, gain=0.132534

tree= 1, node=221, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=222, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=223, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=224, feature=13, thr= 38.24, gain=0.021689

tree= 1, node=225, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=226, feature= 1, thr= -1.00, gain=0.000000

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tree= 1, node=227, feature= 7, thr=  1.04, gain=0.002949

tree= 1, node=228, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=229, feature= 7, thr= 67.96, gain=0.150856

tree= 1, node=230, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=231, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=232, feature=10, thr= 39.22, gain=0.008428

tree= 1, node=233, feature=13, thr= 54.35, gain=0.088072

tree= 1, node=234, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=235, feature= 1, thr= 93.41, gain=0.027794

tree= 1, node=236, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=237, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=238, feature= 2, thr= 45.29, gain=0.042999

tree= 1, node=239, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=240, feature= 6, thr= 70.59, gain=0.276176

tree= 1, node=241, feature= 1, thr= 75.35, gain=0.036862

tree= 1, node=242, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=243, feature= 9, thr= -1.00, gain=0.000000

tree= 1, node=244, feature= 7, thr=  0.86, gain=0.000070

tree= 1, node=245, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=246, feature= 7, thr= 36.71, gain=0.056920

tree= 1, node=247, feature= 6, thr= -1.00, gain=0.000000

tree= 1, node=248, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=249, feature= 1, thr= -1.00, gain=0.000000

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tree= 1, node=250, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=251, feature=13, thr= 74.12, gain=0.019121

tree= 1, node=252, feature= 4, thr=  0.59, gain=0.000339

tree= 1, node=253, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=254, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node=255, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=256, feature= 9, thr=  0.00, gain=0.000000

tree= 1, node=257, feature= 4, thr= 35.41, gain=0.026798

tree= 1, node=258, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=259, feature= 0, thr= 64.71, gain=0.241638

tree= 1, node=260, feature=13, thr= 23.04, gain=0.000107

tree= 1, node=261, feature= 7, thr= 41.18, gain=0.005560

tree= 1, node=262, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=263, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=264, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=265, feature= 5, thr= 85.06, gain=0.018894

tree= 1, node=266, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=267, feature= 9, thr= 13.18, gain=0.015927

tree= 1, node=268, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=269, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=270, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=271, feature= 7, thr= 56.18, gain=0.072945

tree= 1, node=272, feature= 1, thr= -1.00, gain=0.000000

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tree= 1, node=273, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=274, feature= 9, thr= 43.12, gain=0.000360

tree= 1, node=275, feature= 8, thr= 58.06, gain=0.004877

tree= 1, node=276, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=277, feature=14, thr=  0.25, gain=0.020407

tree= 1, node=278, feature=11, thr= 58.10, gain=0.098638

tree= 1, node=279, feature= 9, thr= 61.65, gain=0.036319

tree= 1, node=280, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=281, feature= 8, thr= 72.55, gain=0.058995

tree= 1, node=282, feature= 8, thr= 62.75, gain=0.005640

tree= 1, node=283, feature= 7, thr= 82.33, gain=0.034039

tree= 1, node=284, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=285, feature= 9, thr= -1.00, gain=0.000000

tree= 1, node=286, feature= 9, thr= 31.22, gain=0.000447

tree= 1, node=287, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=288, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=289, feature= 3, thr= 83.53, gain=0.365365

tree= 1, node=290, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=291, feature= 5, thr= 99.47, gain=0.009683

tree= 1, node=292, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=293, feature= 3, thr= 31.67, gain=0.000311

tree= 1, node=294, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=295, feature= 1, thr= -1.00, gain=0.000000

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tree= 1, node=296, feature= 7, thr= 25.43, gain=0.003646

tree= 1, node=297, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=298, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=299, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=300, feature= 4, thr= -1.00, gain=0.000000

tree= 1, node=301, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=302, feature= 9, thr= -1.00, gain=0.000000

tree= 1, node=303, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=304, feature=15, thr=  0.02, gain=0.056312

tree= 1, node=305, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=306, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=307, feature= 7, thr= 76.06, gain=0.044440

tree= 1, node=308, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=309, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=310, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=311, feature= 3, thr= 91.18, gain=0.000286

tree= 1, node=312, feature= 5, thr= 72.43, gain=0.075842

tree= 1, node=313, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=314, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=315, feature=13, thr= 75.49, gain=0.019635

tree= 1, node=316, feature=11, thr= 49.67, gain=0.001009

tree= 1, node=317, feature= 6, thr=  1.31, gain=0.000169

tree= 1, node=318, feature= 3, thr= -1.00, gain=0.000000

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tree= 1, node=319, feature= 2, thr= 67.43, gain=0.010267

tree= 1, node=320, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=321, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=322, feature=12, thr= 49.92, gain=0.007704

tree= 1, node=323, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=324, feature= 7, thr= 36.47, gain=0.000747

tree= 1, node=325, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=326, feature= 3, thr= 96.08, gain=0.001171

tree= 1, node=327, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=328, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=329, feature= 7, thr= 57.08, gain=0.002834

tree= 1, node=330, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=331, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=332, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=333, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=334, feature= 0, thr=  0.65, gain=0.001780

tree= 1, node=335, feature= 0, thr= 21.35, gain=0.001145

tree= 1, node=336, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=337, feature= 6, thr= 31.80, gain=0.000155

tree= 1, node=338, feature= 7, thr= 70.18, gain=0.051606

tree= 1, node=339, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=340, feature=11, thr= 28.94, gain=0.001190

tree= 1, node=341, feature= 2, thr= -1.00, gain=0.000000

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tree= 1, node=342, feature= 3, thr= 86.22, gain=0.082330

tree= 1, node=343, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=344, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node=345, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=346, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=347, feature= 9, thr= -1.00, gain=0.000000

tree= 1, node=348, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=349, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=350, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=351, feature= 8, thr= 28.63, gain=0.000403

tree= 1, node=352, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=353, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=354, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=355, feature= 1, thr= 77.29, gain=0.000486

tree= 1, node=356, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=357, feature= 5, thr= -1.00, gain=0.000000

tree= 1, node=358, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=359, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=360, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=361, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=362, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=363, feature= 0, thr=  0.00, gain=0.000000

tree= 1, node=364, feature= 6, thr= -1.00, gain=0.000000

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tree= 1, node=365, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=366, feature= 6, thr= -1.00, gain=0.000000

tree= 1, node=367, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=368, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=369, feature= 0, thr= 59.00, gain=0.001794

tree= 1, node=370, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=371, feature= 5, thr= 37.29, gain=0.059002

tree= 1, node=372, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=373, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=374, feature=14, thr= 96.16, gain=0.146594

tree= 1, node=375, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=376, feature= 1, thr= 84.31, gain=0.002670

tree= 1, node=377, feature= 1, thr= 87.06, gain=0.002005

tree= 1, node=378, feature=12, thr= 50.24, gain=0.000336

tree= 1, node=379, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=380, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=381, feature= 0, thr= 30.18, gain=0.001202

tree= 1, node=382, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=383, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=384, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=385, feature= 1, thr= 67.12, gain=0.000638

tree= 1, node=386, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=387, feature= 2, thr= -1.00, gain=0.000000

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tree= 1, node=388, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=389, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=390, feature=13, thr=  4.12, gain=0.003039

tree= 1, node=391, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=392, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=393, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=394, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=395, feature= 0, thr= 87.65, gain=0.053172

tree= 1, node=396, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=397, feature= 1, thr= 58.49, gain=0.000604

tree= 1, node=398, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=399, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=400, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=401, feature= 8, thr= 87.45, gain=0.004203

tree= 1, node=402, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=403, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=404, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=405, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=406, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=407, feature= 8, thr= 45.10, gain=0.017898

tree= 1, node=408, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=409, feature= 7, thr= -1.00, gain=0.000000

tree= 1, node=410, feature= 2, thr= -1.00, gain=0.000000

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tree= 1, node=411, feature= 6, thr= 42.63, gain=0.002612

tree= 1, node=412, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=413, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=414, feature= 8, thr=  3.53, gain=0.000822

tree= 1, node=415, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=416, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=417, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=418, feature= 0, thr= 62.24, gain=0.000547

tree= 1, node=419, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=420, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=421, feature=14, thr=  0.25, gain=0.000785

tree= 1, node=422, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=423, feature= 2, thr= -1.00, gain=0.000000

tree= 1, node=424, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=425, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=426, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=427, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=428, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=429, feature= 2, thr= 71.96, gain=0.133040

tree= 1, node=430, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=431, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=432, feature= 3, thr= 96.24, gain=0.020577

tree= 1, node=433, feature= 0, thr= -1.00, gain=0.000000

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tree= 1, node=434, feature= 0, thr= 97.18, gain=0.002591

tree= 1, node=435, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=436, feature= 7, thr= -1.00, gain=0.000000

tree= 1, node=437, feature= 1, thr= -1.00, gain=0.000000

tree= 1, node=438, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=439, feature= 4, thr= 61.22, gain=0.050953

tree= 1, node=440, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=441, feature=14, thr=  0.00, gain=0.000000

tree= 1, node=442, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=443, feature= 0, thr= 53.22, gain=0.000088

tree= 1, node=444, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=445, feature=10, thr= 80.24, gain=0.034016

tree= 1, node=446, feature= 3, thr= -1.00, gain=0.000000

tree= 1, node=447, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=448, feature= 0, thr= -1.00, gain=0.000000

tree= 1, node=449, feature= 0, thr= -1.00, gain=0.000000

**classification accuracy=0.1043**

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# Task 1B

I experimented with randomized option and 45 as my threshold, the classification accuracy was 0.4748.

I experimented with randomized option and 85 as my threshold, the classification accuracy was 0.3779. (so, it went down.)

I experimented with forest3 option and 45 as my threshold, the classification accuracy was 0.1058 which seems surprisingly low.

I experimented with optimized option and 45 as my threshold, the classification accuracy was 0.1058 which was really high.(0.7842)

From my experiment with different variables, most successful was the one with 45 as threshold and optimized option.

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# Qsn.2)

80 people decided to wait and 20 people decided to not wait.

a) initial entropy made by A:
H(A) = (-20/100)(log2(20/100)) -(0.8)*log2(0.8)
H(A) = 0.72198


b) Same thing can be written as:
20 out of 35 decided to wait and rest of the 15 decided not to for weekend.

So, entropy = (0.35)*(-20/35*log2(20/35)-(15/35)log2(15/35))
=0.34483

and, out of 65 cases of not weekend, 60 waited while 5 did not.

Entropy = (0.65)*((-60/65)log2(60/65)(-5/65)(5/65))
        = 0.254308

So, total entropy due to attribute weekend/not weekend:
        =0.34483+0.254308
        =0.599138
Information gain = entropy of entire class – entropy of attribute

                = 0.72198 – 0.599138
                = 0.122842

c) Since this attribute has already been used to filter out the data and use of this respective attribute leads to achieving final decision, entropy is always zero.
So, information gain = 0.72198-0
                =0.72198

d) Node F (because, it is not a weekend and it is raining.) Output will be "will wait"
e) weekend: yes, hungry = no, weekend =yes, This leads to Node H. Output:"will not wait"

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# **Task 3)**

We have the formula:
**Entropy = -Plog2P – Qlog2Q**

Here, p is probability of success and q is probability of a failure for a node.
We will be looking for each attribute A,B and C to calculate information gained.

To begin with entropy calculation of attribute A:
First of all we have to calculate entropy for parent node:

Therefore, entropy of parent node is:
P = total people belong to class X = 5/10
q = total people belong to class Y = 5/10

entropy of parent node = (-0.5log2(0.5)-0.5log2(0.5)) = 1


Now, for gain we use the formula:
We are going to use A as our root graduate.
Gain(X,A) = Entropy(X)- 0.3(0)-0.4(-3/4 log2(3/4)-1/4log2(1/4))-0.3(-2/3log2(2/3)-1/3log2(1/3))
= 1-0.324-0.275
=0.401


Now, we take another approach and consider B as my root. Similar to the process above,
Gain(X,B) = Entropy(X)-0.4(-3/4log2(3/4)-1/4log2(1/4)-0.2log2(1))
= 1-0.324-0.324-0.2
=0.152

Similarly, we take another approach with C:

Gain(X,C) = Entropy(X)-0.5(-1/5log2(0.2)-4/5log2(4/5))-0.4(-0.75log2(0.75) – 0.25 log(0.25)) -0.1(0)
= 1-0.361-0.325-0
=0.314
Since gain of 'A' is the highest, it is best to choose A.

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# Task 4)

We can see it quite intuitively that the lowest entropy would be achieved when all the class are in favor of a single class (say,A), then the value that we will achieve for entropy would be **0** considering there is no other class to classify the data to.
Mathematically,
        -1*log2(1)+0+0+0 = 0 which is the least possible.

And, highest entropy would be:
log2(4) = 2 for there are 4 classes. The entropy cannot exceed this value for math forbids it.

# Task 5)

Since it is a binary classifier and has only two possible outcomes, the approach I will take will be similar to the program that we solved in Task 1.
As we know from our experience, more data and more training usually results in a better result. If we have more extensive data from not just the home team but from other teams as well when they played in our home ground versus away, that can be really helpful to analyze the chances of home team winning. Along with that, approach of solution like optimized option would be better to use in this case compared to random as games usually tend to have a pattern ans having an optimized option might prove to be fruitful.