高血压糖尿病人群中提取数据

分为9大类别：疾病代号 脑卒中 1, 心衰 2，急性心梗 3，肾病 4,心肌缺血 5 ，心脏功能病变 6),冠心病 7), 高血压 8),糖尿病 9）

高血压主要指原发性高血压，特发性高血压，继发性高血压

糖尿病主要指1型糖尿病，2型糖尿病，特指糖尿病，继发性糖尿病

|  |  |  |
| --- | --- | --- |
| 疾病名称 | 高血压组数据量 | 糖尿病组数据量 |
| 脑卒中cerebral\_apoplexy | 5956 | 1933 | |
| 心衰hf\_ICD | 779 | 300 | |
| 急性心梗cardiac\_infarction | 740 | 290 | |
| 肾衰  nephropathy | 952 | 384 | |
| 心肌缺血ischemia\_myocardial | 857 | 280 | |
| 心脏功能病变  cardiac\_function\_lesion | 2462 | 650 | |
| 冠心病coronary\_heart\_disease | 19761 | 7000 | |
| 高血压 | 22178 |  | |
| 糖尿病 | 12493 |  | |

label:cerebral\_apoplexy 4392

label:hf\_ICD 576

label:cardiac\_infarction 578

label:nephropathy 780

label:ischemia\_myocardial 649

label:cardiac\_function\_lesion 1774

label:coronary\_heart\_disease 16427

label:gaoxueya 22178

label:tangniao 12493

dataset num: 122748

old dataset statistic:

Predictors: 296

--Nominal: 0

--Numeric: 296

Labels: 9

Cardinality: 1.458027829374002

Density: 0.1620030921526669

Distinct Labelsets: 214

Percentage of examples with label 1: 0.050347052497800374

Percentage of examples with label 2: 0.00697363704500277

Percentage of examples with label 3: 0.006330042037344804

Percentage of examples with label 4: 0.009246586502427738

Percentage of examples with label 5: 0.0074787369244305405

Percentage of examples with label 6: 0.020643920878547918

Percentage of examples with label 7: 0.1903330400495324

Percentage of examples with label 8: 0.817104963013654

Percentage of examples with label 9: 0.3495698504252615

Examples of cardinality 0: 0.0

Examples of cardinality 1: 82453.0

Examples of cardinality 2: 27786.0

Examples of cardinality 3: 9694.0

Examples of cardinality 4: 2313.0

Examples of cardinality 5: 409.0

Examples of cardinality 6: 85.0

Examples of cardinality 7: 8.0

Examples of cardinality 8: 0.0

Examples of cardinality 9: 0.0

Examples of combination 000100100: 11

Examples of combination 000100101: 9

Examples of combination 011010111: 3

Examples of combination 010011110: 3

Examples of combination 110100001: 1

Examples of combination 000111111: 1

Examples of combination 000111110: 1

Examples of combination 100000000: 477

Examples of combination 100000001: 218

Examples of combination 001001000: 4

Examples of combination 010011111: 1

Examples of combination 100011010: 1

Examples of combination 000100111: 159

Examples of combination 011010101: 1

Examples of combination 110100111: 8

Examples of combination 001001010: 4

Examples of combination 100000110: 1036

Examples of combination 100000111: 940

Examples of combination 101000101: 1

Examples of combination 101000100: 7

Examples of combination 010011001: 1

Examples of combination 000100110: 102

Examples of combination 000100001: 32

Examples of combination 101011001: 1

Examples of combination 000001001: 106

Examples of combination 010000111: 160

Examples of combination 111100111: 1

Examples of combination 100001110: 83

Examples of combination 100001111: 79

Examples of combination 010000110: 138

Examples of combination 001000010: 39

Examples of combination 000001000: 226

Examples of combination 001000011: 29

Examples of combination 001001100: 1

Examples of combination 101000110: 37

Examples of combination 101000111: 34

Examples of combination 110101110: 1

Examples of combination 110101111: 1

Examples of combination 010010000: 1

Examples of combination 010101010: 1

Examples of combination 000100000: 98

Examples of combination 010000101: 8

Examples of combination 010000100: 16

Examples of combination 100000010: 1760

Examples of combination 100000011: 843

Examples of combination 100001100: 3

Examples of combination 000001010: 616

Examples of combination 001001110: 15

Examples of combination 000001011: 172

Examples of combination 001001111: 12

Examples of combination 101000000: 5

Examples of combination 101000001: 2

Examples of combination 011101110: 1

Examples of combination 011101111: 1

Examples of combination 111001110: 2

Examples of combination 110100011: 3

Examples of combination 010010011: 1

Examples of combination 010101001: 1

Examples of combination 110010111: 7

Examples of combination 000100010: 326

Examples of combination 000101100: 1

Examples of combination 110010110: 2

Examples of combination 000100011: 116

Examples of combination 001011000: 2

Examples of combination 001100110: 3

Examples of combination 001100111: 4

Examples of combination 000000011: 13939

Examples of combination 000001100: 70

Examples of combination 000001101: 44

Examples of combination 100001010: 32

Examples of combination 001000111: 149

Examples of combination 100001011: 17

Examples of combination 001000110: 172

Examples of combination 000000010: 62022

Examples of combination 101000011: 5

Examples of combination 101001101: 1

Examples of combination 101001100: 1

Examples of combination 101000010: 7

Examples of combination 100101011: 2

Examples of combination 000001111: 320

Examples of combination 000110110: 3

Examples of combination 000110111: 5

Examples of combination 001000001: 15

Examples of combination 100001000: 9

Examples of combination 100001001: 2

Examples of combination 000001110: 499

Examples of combination 001000000: 45

Examples of combination 101001111: 8

Examples of combination 101001110: 1

Examples of combination 010010111: 9

Examples of combination 010010110: 7

Examples of combination 110010010: 1

Examples of combination 001010010: 2

Examples of combination 110011111: 1

Examples of combination 001010011: 2

Examples of combination 000011010: 3

Examples of combination 100101111: 7

Examples of combination 000000111: 5990

Examples of combination 000000110: 9106

Examples of combination 110000101: 2

Examples of combination 110110110: 1

Examples of combination 111000111: 10

Examples of combination 110110111: 1

Examples of combination 111000110: 5

Examples of combination 000011011: 5

Examples of combination 001011110: 2

Examples of combination 001011111: 2

Examples of combination 000000001: 17620

Examples of combination 101101111: 1

Examples of combination 000110011: 1

Examples of combination 110000111: 38

Examples of combination 001000100: 27

Examples of combination 110000110: 27

Examples of combination 001000101: 16

Examples of combination 000110010: 1

Examples of combination 001110110: 1

Examples of combination 101001011: 2

Examples of combination 001110111: 1

Examples of combination 000011000: 3

Examples of combination 100101000: 1

Examples of combination 000011001: 3

Examples of combination 010100101: 1

Examples of combination 001010110: 11

Examples of combination 001010111: 16

Examples of combination 100100000: 8

Examples of combination 110000001: 1

Examples of combination 110000000: 6

Examples of combination 000011110: 16

Examples of combination 000011111: 21

Examples of combination 010100100: 1

Examples of combination 110011010: 1

Examples of combination 001010000: 2

Examples of combination 001010001: 1

Examples of combination 100100011: 21

Examples of combination 001101111: 1

Examples of combination 000000101: 1080

Examples of combination 000000100: 1876

Examples of combination 110000010: 10

Examples of combination 010001010: 9

Examples of combination 110000011: 4

Examples of combination 010001011: 4

Examples of combination 011001111: 2

Examples of combination 000010011: 37

Examples of combination 000010010: 104

Examples of combination 100100010: 23

Examples of combination 000011100: 2

Examples of combination 001100011: 1

Examples of combination 111010111: 1

Examples of combination 100100101: 1

Examples of combination 111010110: 1

Examples of combination 101100111: 4

Examples of combination 110001110: 4

Examples of combination 110001111: 2

Examples of combination 000010000: 56

Examples of combination 001100010: 2

Examples of combination 100010101: 1

Examples of combination 000010001: 19

Examples of combination 100010100: 3

Examples of combination 001010100: 1

Examples of combination 100100111: 28

Examples of combination 100100110: 18

Examples of combination 110001000: 1

Examples of combination 100111111: 1

Examples of combination 100111110: 1

Examples of combination 000010111: 174

Examples of combination 000010110: 192

Examples of combination 011100111: 6

Examples of combination 110001011: 1

Examples of combination 110001010: 1

Examples of combination 010110110: 3

Examples of combination 010110111: 3

Examples of combination 011000111: 18

Examples of combination 010000011: 45

Examples of combination 010001100: 1

Examples of combination 010000010: 94

Examples of combination 011000110: 13

Examples of combination 011100110: 5

Examples of combination 000010100: 36

Examples of combination 000010101: 19

Examples of combination 010101111: 4

Examples of combination 100010000: 2

Examples of combination 000101111: 11

Examples of combination 000101110: 9

Examples of combination 010101110: 1

Examples of combination 010000001: 9

Examples of combination 100110001: 1

Examples of combination 010000000: 33

Examples of combination 100010110: 40

Examples of combination 010100010: 12

Examples of combination 100010111: 45

Examples of combination 010100011: 13

Examples of combination 000101000: 1

Examples of combination 101010111: 1

Examples of combination 101010110: 1

Examples of combination 011000010: 1

Examples of combination 100110111: 3

Examples of combination 100000100: 115

Examples of combination 010001000: 2

Examples of combination 100000101: 72

Examples of combination 011000011: 2

Examples of combination 100011111: 4

Examples of combination 000101010: 5

Examples of combination 010100001: 1

Examples of combination 100011110: 5

Examples of combination 010100000: 3

Examples of combination 000101011: 7

Examples of combination 010001111: 21

Examples of combination 011000001: 1

Examples of combination 011000000: 2

Examples of combination 010001110: 19

Examples of combination 100010011: 5

Examples of combination 010100111: 22

Examples of combination 100010010: 9

Examples of combination 010100110: 7

数据均衡性处理：

* 根据上述的结果，标签8占据的样本数量在80%，为了既能够平衡数据分布，又保留多标签数据集的特性，进行欠拟合采样，将有且仅且标签8(000000010高血压)的记录降低。有且仅有标签9（000000001糖尿病）同理。000000011进行欠拟合。均为原数据总量的7%。

underSamples dataset statistic:

样本集统计： Examples: 40134

Predictors: 296

--Nominal: 0

--Numeric: 296

Labels: 9

Cardinality: 2.123536153884487

Density: 0.23594846154272078

Distinct Labelsets: 214

Percentage of examples with label 1: 0.15398415308715802

Percentage of examples with label 2: 0.021328549359645187

Percentage of examples with label 3: 0.019360143519210643

Percentage of examples with label 4: 0.028280261125230476

Percentage of examples with label 5: 0.02287337419644192

Percentage of examples with label 6: 0.06313848607165994

Percentage of examples with label 7: 0.5821248816464842

Percentage of examples with label 8: 0.7902526536104052

Percentage of examples with label 9: 0.44219365126825133

Examples of cardinality 0: 0.0

Examples of cardinality 1: 10969.0

Examples of cardinality 2: 16656.0

Examples of cardinality 3: 9694.0

Examples of cardinality 4: 2313.0

Examples of cardinality 5: 409.0

Examples of cardinality 6: 85.0

Examples of cardinality 7: 8.0

Examples of cardinality 8: 0.0

Examples of cardinality 9: 0.0

Examples of combination 000100100: 11

Examples of combination 000100101: 9

Examples of combination 011010111: 3

Examples of combination 010011110: 3

Examples of combination 110100001: 1

Examples of combination 000111111: 1

Examples of combination 000111110: 1

Examples of combination 100000000: 477

Examples of combination 100000001: 218

Examples of combination 001001000: 4

Examples of combination 010011111: 1

Examples of combination 100011010: 1

Examples of combination 000100111: 159

Examples of combination 011010101: 1

Examples of combination 110100111: 8

Examples of combination 001001010: 4

Examples of combination 100000110: 1036

Examples of combination 100000111: 940

Examples of combination 101000101: 1

Examples of combination 101000100: 7

Examples of combination 010011001: 1

Examples of combination 000100110: 102

Examples of combination 000100001: 32

Examples of combination 101011001: 1

Examples of combination 000001001: 106

Examples of combination 010000111: 160

Examples of combination 111100111: 1

Examples of combination 100001110: 83

Examples of combination 100001111: 79

Examples of combination 010000110: 138

Examples of combination 001000010: 39

Examples of combination 000001000: 226

Examples of combination 001000011: 29

Examples of combination 001001100: 1

Examples of combination 101000110: 37

Examples of combination 101000111: 34

Examples of combination 110101110: 1

Examples of combination 110101111: 1

Examples of combination 010010000: 1

Examples of combination 010101010: 1

Examples of combination 000100000: 98

Examples of combination 010000101: 8

Examples of combination 010000100: 16

Examples of combination 100000010: 1760

Examples of combination 100000011: 843

Examples of combination 100001100: 3

Examples of combination 000001010: 616

Examples of combination 001001110: 15

Examples of combination 000001011: 172

Examples of combination 001001111: 12

Examples of combination 101000000: 5

Examples of combination 101000001: 2

Examples of combination 011101110: 1

Examples of combination 011101111: 1

Examples of combination 111001110: 2

Examples of combination 110100011: 3

Examples of combination 010010011: 1

Examples of combination 010101001: 1

Examples of combination 110010111: 7

Examples of combination 000100010: 326

Examples of combination 000101100: 1

Examples of combination 110010110: 2

Examples of combination 000100011: 116

Examples of combination 001011000: 2

Examples of combination 001100110: 3

Examples of combination 001100111: 4

Examples of combination 000000011: 2809

Examples of combination 000001100: 70

Examples of combination 000001101: 44

Examples of combination 100001010: 32

Examples of combination 001000111: 149

Examples of combination 100001011: 17

Examples of combination 001000110: 172

Examples of combination 101000011: 5

Examples of combination 101001101: 1

Examples of combination 000000010: 4570

Examples of combination 101001100: 1

Examples of combination 101000010: 7

Examples of combination 100101011: 2

Examples of combination 000001111: 320

Examples of combination 000110110: 3

Examples of combination 000110111: 5

Examples of combination 001000001: 15

Examples of combination 100001000: 9

Examples of combination 100001001: 2

Examples of combination 000001110: 499

Examples of combination 001000000: 45

Examples of combination 101001111: 8

Examples of combination 101001110: 1

Examples of combination 010010111: 9

Examples of combination 010010110: 7

Examples of combination 110010010: 1

Examples of combination 001010010: 2

Examples of combination 110011111: 1

Examples of combination 001010011: 2

Examples of combination 000011010: 3

Examples of combination 100101111: 7

Examples of combination 000000111: 5990

Examples of combination 000000110: 9106

Examples of combination 110000101: 2

Examples of combination 110110110: 1

Examples of combination 111000111: 10

Examples of combination 110110111: 1

Examples of combination 111000110: 5

Examples of combination 000011011: 5

Examples of combination 001011110: 2

Examples of combination 001011111: 2

Examples of combination 000000001: 3588

Examples of combination 101101111: 1

Examples of combination 000110011: 1

Examples of combination 110000111: 38

Examples of combination 001000100: 27

Examples of combination 110000110: 27

Examples of combination 001000101: 16

Examples of combination 000110010: 1

Examples of combination 001110110: 1

Examples of combination 101001011: 2

Examples of combination 001110111: 1

Examples of combination 000011000: 3

Examples of combination 100101000: 1

Examples of combination 000011001: 3

Examples of combination 010100101: 1

Examples of combination 001010110: 11

Examples of combination 001010111: 16

Examples of combination 100100000: 8

Examples of combination 110000001: 1

Examples of combination 110000000: 6

Examples of combination 000011110: 16

Examples of combination 000011111: 21

Examples of combination 010100100: 1

Examples of combination 110011010: 1

Examples of combination 001010000: 2

Examples of combination 001010001: 1

Examples of combination 100100011: 21

Examples of combination 001101111: 1

Examples of combination 000000101: 1080

Examples of combination 000000100: 1876

Examples of combination 110000010: 10

Examples of combination 010001010: 9

Examples of combination 110000011: 4

Examples of combination 010001011: 4

Examples of combination 011001111: 2

Examples of combination 000010011: 37

Examples of combination 000010010: 104

Examples of combination 100100010: 23

Examples of combination 000011100: 2

Examples of combination 001100011: 1

Examples of combination 111010111: 1

Examples of combination 100100101: 1

Examples of combination 111010110: 1

Examples of combination 101100111: 4

Examples of combination 110001110: 4

Examples of combination 110001111: 2

Examples of combination 000010000: 56

Examples of combination 001100010: 2

Examples of combination 100010101: 1

Examples of combination 000010001: 19

Examples of combination 100010100: 3

Examples of combination 001010100: 1

Examples of combination 100100111: 28

Examples of combination 100100110: 18

Examples of combination 110001000: 1

Examples of combination 100111111: 1

Examples of combination 100111110: 1

Examples of combination 000010111: 174

Examples of combination 000010110: 192

Examples of combination 011100111: 6

Examples of combination 110001011: 1

Examples of combination 110001010: 1

Examples of combination 010110110: 3

Examples of combination 010110111: 3

Examples of combination 011000111: 18

Examples of combination 010000011: 45

Examples of combination 010001100: 1

Examples of combination 010000010: 94

Examples of combination 011000110: 13

Examples of combination 011100110: 5

Examples of combination 000010100: 36

Examples of combination 000010101: 19

Examples of combination 010101111: 4

Examples of combination 100010000: 2

Examples of combination 000101111: 11

Examples of combination 000101110: 9

Examples of combination 010101110: 1

Examples of combination 010000001: 9

Examples of combination 100110001: 1

Examples of combination 010000000: 33

Examples of combination 100010110: 40

Examples of combination 010100010: 12

Examples of combination 100010111: 45

Examples of combination 010100011: 13

Examples of combination 000101000: 1

Examples of combination 101010111: 1

Examples of combination 101010110: 1

Examples of combination 011000010: 1

Examples of combination 100110111: 3

Examples of combination 100000100: 115

Examples of combination 010001000: 2

Examples of combination 100000101: 72

Examples of combination 011000011: 2

Examples of combination 100011111: 4

Examples of combination 000101010: 5

Examples of combination 010100001: 1

Examples of combination 100011110: 5

Examples of combination 010100000: 3

Examples of combination 000101011: 7

Examples of combination 010001111: 21

Examples of combination 011000001: 1

Examples of combination 011000000: 2

Examples of combination 010001110: 19

Examples of combination 100010011: 5

Examples of combination 010100111: 22

Examples of combination 100010010: 9

Examples of combination 010100110: 7

* 将数据集进行划分，70%为训练集，30%为测试集

training: 28094, testing: 12040

训练样本集统计： Examples: 28094

Predictors: 296

--Nominal: 0

--Numeric: 296

Labels: 9

Cardinality: 2.130241332668897

Density: 0.23669348140765523

Distinct Labelsets: 175

Percentage of examples with label 1: 0.1563323129493842

Percentage of examples with label 2: 0.020502598419591372

Percentage of examples with label 3: 0.020573787997437174

Percentage of examples with label 4: 0.027763935359863316

Percentage of examples with label 5: 0.023101018010963197

Percentage of examples with label 6: 0.06314515554922759

Percentage of examples with label 7: 0.584715597636506

Percentage of examples with label 8: 0.7894212287321136

Percentage of examples with label 9: 0.4446856980138108

Examples of cardinality 0: 0.0

Examples of cardinality 1: 7553.0

Examples of cardinality 2: 11759.0

Examples of cardinality 3: 6772.0

Examples of cardinality 4: 1659.0

Examples of cardinality 5: 287.0

Examples of cardinality 6: 59.0

Examples of cardinality 7: 5.0

Examples of cardinality 8: 0.0

Examples of cardinality 9: 0.0

Examples of combination 000100100: 7

Examples of combination 000100101: 3

Examples of combination 001010110: 6

Examples of combination 001010111: 14

Examples of combination 011010111: 4

Examples of combination 100100000: 10

Examples of combination 110100001: 1

Examples of combination 110000001: 2

Examples of combination 000111110: 1

Examples of combination 100000000: 317

Examples of combination 110000000: 4

Examples of combination 100000001: 174

Examples of combination 001001000: 5

Examples of combination 000011110: 12

Examples of combination 000011111: 13

Examples of combination 010011111: 1

Examples of combination 000100111: 140

Examples of combination 001010000: 1

Examples of combination 011010101: 1

Examples of combination 001010001: 1

Examples of combination 100100011: 13

Examples of combination 110100111: 2

Examples of combination 001101111: 1

Examples of combination 000000101: 779

Examples of combination 000000100: 1332

Examples of combination 001001010: 1

Examples of combination 110000010: 8

Examples of combination 010001010: 6

Examples of combination 100000110: 763

Examples of combination 110000011: 5

Examples of combination 100000111: 666

Examples of combination 010001011: 3

Examples of combination 011001111: 2

Examples of combination 101000100: 6

Examples of combination 000010011: 26

Examples of combination 000010010: 84

Examples of combination 100100010: 20

Examples of combination 000011100: 3

Examples of combination 000100110: 53

Examples of combination 000100001: 20

Examples of combination 101011001: 1

Examples of combination 100100101: 1

Examples of combination 101100111: 2

Examples of combination 000001001: 67

Examples of combination 010000111: 108

Examples of combination 110001110: 1

Examples of combination 100001110: 59

Examples of combination 100001111: 59

Examples of combination 110001111: 1

Examples of combination 001000010: 43

Examples of combination 010000110: 91

Examples of combination 000001000: 155

Examples of combination 001000011: 15

Examples of combination 001001100: 1

Examples of combination 101000110: 29

Examples of combination 101000111: 24

Examples of combination 000010000: 41

Examples of combination 110101110: 1

Examples of combination 001100010: 2

Examples of combination 000010001: 17

Examples of combination 100010100: 1

Examples of combination 010101010: 2

Examples of combination 000100000: 63

Examples of combination 100100111: 22

Examples of combination 100100110: 11

Examples of combination 010000101: 6

Examples of combination 010000100: 12

Examples of combination 100000010: 1211

Examples of combination 100000011: 614

Examples of combination 100001100: 1

Examples of combination 000001010: 411

Examples of combination 001001110: 8

Examples of combination 100111111: 1

Examples of combination 000001011: 124

Examples of combination 001001111: 7

Examples of combination 101000000: 5

Examples of combination 101000001: 1

Examples of combination 011101110: 1

Examples of combination 011101111: 2

Examples of combination 000010111: 126

Examples of combination 111001110: 2

Examples of combination 110100011: 3

Examples of combination 000010110: 137

Examples of combination 010010011: 2

Examples of combination 110010111: 5

Examples of combination 000100010: 223

Examples of combination 110010110: 1

Examples of combination 000100011: 81

Examples of combination 001100110: 4

Examples of combination 001100111: 2

Examples of combination 011100111: 5

Examples of combination 000000011: 2020

Examples of combination 000001100: 48

Examples of combination 000001101: 36

Examples of combination 110001011: 1

Examples of combination 100001010: 22

Examples of combination 010110110: 2

Examples of combination 001000111: 118

Examples of combination 100001011: 13

Examples of combination 010110111: 1

Examples of combination 010000011: 26

Examples of combination 011000111: 13

Examples of combination 001000110: 129

Examples of combination 010000010: 61

Examples of combination 011000110: 6

Examples of combination 000000010: 3089

Examples of combination 101000011: 2

Examples of combination 101001101: 1

Examples of combination 011100110: 3

Examples of combination 101000010: 4

Examples of combination 000010100: 26

Examples of combination 000010101: 10

Examples of combination 100101011: 4

Examples of combination 100010000: 2

Examples of combination 010101111: 4

Examples of combination 000101111: 6

Examples of combination 000101110: 5

Examples of combination 010101110: 1

Examples of combination 000001111: 219

Examples of combination 010000001: 4

Examples of combination 000110110: 2

Examples of combination 000110111: 4

Examples of combination 100001000: 9

Examples of combination 001000001: 10

Examples of combination 010000000: 19

Examples of combination 000001110: 376

Examples of combination 001000000: 31

Examples of combination 101001111: 9

Examples of combination 101001110: 1

Examples of combination 010010111: 1

Examples of combination 010010110: 13

Examples of combination 010100010: 12

Examples of combination 100010110: 23

Examples of combination 100010111: 37

Examples of combination 010100011: 8

Examples of combination 000101000: 1

Examples of combination 101010111: 1

Examples of combination 001010010: 2

Examples of combination 001010011: 2

Examples of combination 100101111: 5

Examples of combination 000011010: 1

Examples of combination 000000111: 4111

Examples of combination 000000110: 6398

Examples of combination 011000010: 2

Examples of combination 100000100: 83

Examples of combination 100000101: 52

Examples of combination 010001000: 3

Examples of combination 110000101: 4

Examples of combination 011000011: 2

Examples of combination 111000111: 9

Examples of combination 110110111: 1

Examples of combination 111000110: 1

Examples of combination 000011011: 4

Examples of combination 100011111: 3

Examples of combination 000101010: 5

Examples of combination 000101011: 4

Examples of combination 010100000: 1

Examples of combination 001011110: 1

Examples of combination 000000001: 2506

Examples of combination 101101111: 1

Examples of combination 001000100: 18

Examples of combination 110000111: 28

Examples of combination 110000110: 19

Examples of combination 001000101: 9

Examples of combination 010001111: 21

Examples of combination 011000001: 1

Examples of combination 010001110: 15

Examples of combination 011000000: 2

Examples of combination 001110110: 3

Examples of combination 101001011: 1

Examples of combination 000011001: 2

Examples of combination 100010011: 3

Examples of combination 010100111: 9

Examples of combination 010100110: 1

Examples of combination 100010010: 6

测试样本集统计：Examples: 12040

Predictors: 296

--Nominal: 0

--Numeric: 296

Labels: 9

Cardinality: 2.11968438538206

Density: 0.23552048726467334

Distinct Labelsets: 146

Percentage of examples with label 1: 0.15141196013289038

Percentage of examples with label 2: 0.023255813953488372

Percentage of examples with label 3: 0.019435215946843856

Percentage of examples with label 4: 0.030813953488372094

Percentage of examples with label 5: 0.022674418604651164

Percentage of examples with label 6: 0.0617109634551495

Percentage of examples with label 7: 0.5877906976744186

Percentage of examples with label 8: 0.7894518272425249

Percentage of examples with label 9: 0.4331395348837209

Examples of cardinality 0: 0.0

Examples of cardinality 1: 3320.0

Examples of cardinality 2: 5020.0

Examples of cardinality 3: 2819.0

Examples of cardinality 4: 731.0

Examples of cardinality 5: 121.0

Examples of cardinality 6: 28.0

Examples of cardinality 7: 1.0

Examples of cardinality 8: 0.0

Examples of cardinality 9: 0.0

Examples of combination 000100100: 4

Examples of combination 000100101: 4

Examples of combination 001010110: 6

Examples of combination 001010111: 4

Examples of combination 011010111: 2

Examples of combination 010011110: 1

Examples of combination 100100000: 2

Examples of combination 000111110: 1

Examples of combination 100000000: 141

Examples of combination 110000000: 3

Examples of combination 100000001: 53

Examples of combination 001001000: 2

Examples of combination 000011110: 1

Examples of combination 000011111: 8

Examples of combination 100011010: 2

Examples of combination 010100100: 1

Examples of combination 000100111: 54

Examples of combination 001010000: 1

Examples of combination 100100011: 6

Examples of combination 110100111: 1

Examples of combination 000000101: 329

Examples of combination 000000100: 598

Examples of combination 110000010: 4

Examples of combination 010001010: 3

Examples of combination 100000110: 311

Examples of combination 110000011: 1

Examples of combination 100000111: 269

Examples of combination 010001011: 3

Examples of combination 011001111: 1

Examples of combination 101000100: 2

Examples of combination 000010011: 13

Examples of combination 000010010: 28

Examples of combination 100100010: 5

Examples of combination 000100110: 24

Examples of combination 000100001: 13

Examples of combination 001100011: 1

Examples of combination 101100111: 1

Examples of combination 000001001: 30

Examples of combination 010000111: 61

Examples of combination 111100111: 1

Examples of combination 100001110: 27

Examples of combination 100001111: 27

Examples of combination 010000110: 44

Examples of combination 001000010: 10

Examples of combination 000001000: 58

Examples of combination 001000011: 9

Examples of combination 101000110: 16

Examples of combination 101000111: 7

Examples of combination 000010000: 14

Examples of combination 001100010: 1

Examples of combination 010010000: 1

Examples of combination 000010001: 4

Examples of combination 100010100: 1

Examples of combination 010101010: 1

Examples of combination 000100000: 32

Examples of combination 100100111: 9

Examples of combination 100100110: 7

Examples of combination 010000101: 1

Examples of combination 010000100: 12

Examples of combination 110001000: 1

Examples of combination 100000010: 520

Examples of combination 100000011: 265

Examples of combination 000001010: 182

Examples of combination 001001110: 5

Examples of combination 000001011: 45

Examples of combination 001001111: 7

Examples of combination 101000000: 3

Examples of combination 000010111: 60

Examples of combination 111001110: 2

Examples of combination 110100011: 2

Examples of combination 000010110: 55

Examples of combination 010101001: 1

Examples of combination 000100010: 108

Examples of combination 110010110: 2

Examples of combination 000100011: 34

Examples of combination 001100110: 2

Examples of combination 011100111: 1

Examples of combination 000000011: 807

Examples of combination 000001100: 25

Examples of combination 000001101: 12

Examples of combination 100001010: 9

Examples of combination 010110110: 1

Examples of combination 010110111: 5

Examples of combination 100001011: 5

Examples of combination 001000111: 52

Examples of combination 010000011: 12

Examples of combination 011000111: 4

Examples of combination 001000110: 39

Examples of combination 010000010: 18

Examples of combination 000000010: 1384

Examples of combination 101001100: 1

Examples of combination 011100110: 3

Examples of combination 101000010: 5

Examples of combination 000010100: 8

Examples of combination 000010101: 5

Examples of combination 100010000: 1

Examples of combination 000101111: 2

Examples of combination 000101110: 7

Examples of combination 010101110: 1

Examples of combination 000001111: 92

Examples of combination 000110110: 1

Examples of combination 000110111: 2

Examples of combination 001000001: 3

Examples of combination 100001001: 1

Examples of combination 010000000: 15

Examples of combination 000001110: 152

Examples of combination 001000000: 10

Examples of combination 101001111: 6

Examples of combination 010010111: 4

Examples of combination 010010110: 3

Examples of combination 100010110: 10

Examples of combination 010100010: 5

Examples of combination 100010111: 16

Examples of combination 010100011: 5

Examples of combination 110010010: 2

Examples of combination 101010111: 1

Examples of combination 100101111: 1

Examples of combination 101010110: 1

Examples of combination 000000111: 1730

Examples of combination 000000110: 2804

Examples of combination 100000100: 33

Examples of combination 100000101: 19

Examples of combination 010001000: 1

Examples of combination 110000101: 1

Examples of combination 110110110: 1

Examples of combination 111000111: 4

Examples of combination 000011011: 1

Examples of combination 010100000: 2

Examples of combination 000101011: 2

Examples of combination 001011110: 1

Examples of combination 001011111: 1

Examples of combination 000000001: 1068

Examples of combination 000110011: 1

Examples of combination 001000100: 12

Examples of combination 110000111: 4

Examples of combination 001000101: 5

Examples of combination 110000110: 10

Examples of combination 000110010: 1

Examples of combination 010001111: 5

Examples of combination 010001110: 9

Examples of combination 011000000: 1

Examples of combination 001110111: 1

Examples of combination 000011001: 1

Examples of combination 100010011: 1

Examples of combination 010100111: 9

Examples of combination 010100110: 5