```
SGD,fold1

Cost on test data:28.603810602763655
number of correctly predicted instances:45
number of falsely predicted instances:20
total number of instances:65
accuracy:69.23%

SGD,fold2

Cost on test data:25.861549879670196
number of correctly predicted instances:34
number of falsely predicted instances:23
total number of instances:57
accuracy:59.65%

SGD,fold3

Cost on test data:22.197743296723903
number of correctly predicted instances:29
number of falsely predicted instances:17
total number of instances:46
accuracy:63.04%

SGD,fold4

Cost on test data:25.718140340895868
number of correctly predicted instances:50
number of falsely predicted instances:16
total number of instances:66
accuracy:75.76%

SGD,fold5

Cost on test data:27.116573154704803
number of correctly predicted instances:36
number of falsely predicted instances:24
total number of instances:60
accuracy:60.0%

ID3 with unlimited depth, fold1

ID3

firstName3=f = 1: +
firstName3=f = 0
|   lastName0=c = 1: −
|   lastName0=c = 0
|   |   lastName4=l = 1
```

```
|  |  |     lastName0=q = 1: −
|  |  |     lastName0=q = 0: +
|  |  lastName4=l = 0
|  |  |  firstName0=r = 1
|  |  |  |  firstName1=o = 1: +
|  |  |  |  firstName1=o = 0
|  |  |  |  |  firstName1=a = 1: +
|  |  |  |  |  firstName1=a = 0
|  |  |  |  |  |  firstName1=e = 1: +
|  |  |  |  |  |  firstName1=e = 0: −
|  |  |  firstName0=r = 0
|  |  |  |  lastName0=m = 1
|  |  |  |  |  firstName2=n = 1: −
|  |  |  |  |  firstName2=n = 0
|  |  |  |  |  |  firstName0=p = 1: −
|  |  |  |  |  |  firstName0=p = 0
|  |  |  |  |  |  |  lastName2=t = 1
|  |  |  |  |  |  |  |  firstName0=t = 1: +
|  |  |  |  |  |  |  |  firstName0=t = 0
|  |  |  |  |  |  |  |  |  firstName0=d = 1: +
|  |  |  |  |  |  |  |  |  firstName0=d = 0: −
|  |  |  |  |  |  |  lastName2=t = 0: +
|  |  |  |  lastName0=m = 0
|  |  |  |  |  lastName0=l = 1
|  |  |  |  |  |  firstName1=a = 1
|  |  |  |  |  |  |  firstName0=d = 1: +
|  |  |  |  |  |  |  firstName0=d = 0: −
|  |  |  |  |  |  firstName1=a = 0: +
|  |  |  |  |  lastName0=l = 0
|  |  |  |  |  |  lastName3=m = 1
|  |  |  |  |  |  |  firstName2=r = 1: −
|  |  |  |  |  |  |  firstName2=r = 0: +
|  |  |  |  |  |  lastName3=m = 0
|  |  |  |  |  |  |  lastName2=l = 1
|  |  |  |  |  |  |  |  firstName2=r = 1: −
|  |  |  |  |  |  |  |  firstName2=r = 0
|  |  |  |  |  |  |  |  |  lastName4=n = 1
|  |  |  |  |  |  |  |  |  |  firstName0=e = 1: +
|  |  |  |  |  |  |  |  |  |  firstName0=e = 0: −
|  |  |  |  |  |  |  |  |  lastName4=n = 0
|  |  |  |  |  |  |  |  |  |  firstName2=h = 1: −
|  |  |  |  |  |  |  |  |  |  firstName2=h = 0: +
|  |  |  |  |  |  |  lastName2=l = 0
|  |  |  |  |  |  |  |  lastName3=l = 1
|  |  |  |  |  |  |  |  |  firstName0=t = 1: −
|  |  |  |  |  |  |  |  |  firstName0=t = 0
|  |  |  |  |  |  |  |  |  |  firstName3=a = 1: −
|  |  |  |  |  |  |  |  |  |  firstName3=a = 0: +
|  |  |  |  |  |  |  |  lastName3=l = 0
|  |  |  |  |  |  |  |  |  firstName4=o = 1
```

```
| | | | | | | | | | | |   lastName1=e = 1: -
| | | | | | | | | | | |   lastName1=e = 0
| | | | | | | | | | | |   |   lastName2=e = 1: -
| | | | | | | | | | | |   |   lastName2=e = 0: +
| | | | | | | | | firstName4=o = 0
| | | | | | | | |   firstName2=o = 1
| | | | | | | | |   |   lastName3=g = 1: -
| | | | | | | | |   |   lastName3=g = 0
| | | | | | | | |   |   |   firstName0=n = 1: -
| | | | | | | | |   |   |   firstName0=n = 0: +
| | | | | | | | firstName2=o = 0
| | | | | | | | |   firstName1=o = 1
| | | | | | | | |   |   firstName4=e = 1: +
| | | | | | | | |   |   firstName4=e = 0
| | | | | | | | |   |   |   lastName1=o = 1: +
| | | | | | | | |   |   |   lastName1=o = 0
| | | | | | | | |   |   |   |   firstName2=a = 1: +
| | | | | | | | |   |   |   |   firstName2=a = 0
| | | | | | | | |   |   |   |   |   firstName4=h = 1: +
| | | | | | | | |   |   |   |   |   firstName4=h = 0
| | | | | | | | |   |   |   |   |   |   lastName0=h = 1: +
| | | | | | | | |   |   |   |   |   |   lastName0=h = 0: -
| | | | | | | firstName1=o = 0
| | | | | | | |   lastName1=l = 1: +
| | | | | | | |   lastName1=l = 0
| | | | | | | |   |   firstName2=r = 1
| | | | | | | |   |   |   firstName0=a = 1: +
| | | | | | | |   |   |   firstName0=a = 0
| | | | | | | |   |   |   |   firstName0=f = 1: +
| | | | | | | |   |   |   |   firstName0=f = 0
| | | | | | | |   |   |   |   |   firstName0=h = 1: +
| | | | | | | |   |   |   |   |   firstName0=h = 0
| | | | | | | |   |   |   |   |   |   lastName0=s = 1: +
| | | | | | | |   |   |   |   |   |   lastName0=s = 0: -
| | | | | | | |   firstName2=r = 0
| | | | | | | |   |   firstName3=j = 1: +
| | | | | | | |   |   firstName3=j = 0
| | | | | | | |   |   |   firstName3=o = 1
| | | | | | | |   |   |   |   firstName0=m = 1: +
| | | | | | | |   |   |   |   firstName0=m = 0: -
| | | | | | | |   |   |   firstName3=o = 0
| | | | | | | |   |   |   |   firstName4=l = 1
| | | | | | | |   |   |   |   |   firstName0=a = 1: +
| | | | | | | |   |   |   |   |   firstName0=a = 0: -
| | | | | | | |   |   |   |   firstName4=l = 0: -
```

```
Correctly Classified Instances          47               72.3077 %
Incorrectly Classified Instances        18               27.6923 %
Kappa statistic                          0.446
```

```
Mean absolute error                      0.2769
Root mean squared error                  0.5262
Relative absolute error                 55.3973 %
Root relative squared error            105.2594 %
Total Number of Instances               65

ID3 with unlimited depth, fold2

ID3

lastName3=m = 1: +
lastName3=m = 0
|   firstName3=f = 1: +
|   firstName3=f = 0
|   |   lastName4=l = 1
|   |   |   lastName1=a = 1
|   |   |   |   firstName1=e = 1: +
|   |   |   |   firstName1=e = 0: −
|   |   |   lastName1=a = 0: +
|   |   lastName4=l = 0
|   |   |   lastName2=l = 1
|   |   |   |   firstName2=r = 1: −
|   |   |   |   firstName2=r = 0
|   |   |   |   |   lastName4=n = 1
|   |   |   |   |   |   firstName0=e = 1: +
|   |   |   |   |   |   firstName0=e = 0: −
|   |   |   |   |   lastName4=n = 0
|   |   |   |   |   |   firstName2=h = 1: −
|   |   |   |   |   |   firstName2=h = 0: +
|   |   |   lastName2=l = 0
|   |   |   |   lastName0=m = 1
|   |   |   |   |   firstName2=n = 1: −
|   |   |   |   |   firstName2=n = 0
|   |   |   |   |   |   firstName2=e = 1: +
|   |   |   |   |   |   firstName2=e = 0
|   |   |   |   |   |   |   firstName0=s = 1: −
|   |   |   |   |   |   |   firstName0=s = 0
|   |   |   |   |   |   |   |   firstName0=p = 1: −
|   |   |   |   |   |   |   |   firstName0=p = 0
|   |   |   |   |   |   |   |   |   lastName1=a = 1
|   |   |   |   |   |   |   |   |   |   firstName3=i = 1: +
|   |   |   |   |   |   |   |   |   |   firstName3=i = 0
|   |   |   |   |   |   |   |   |   |   |   firstName0=b = 1: +
|   |   |   |   |   |   |   |   |   |   |   firstName0=b = 0
|   |   |   |   |   |   |   |   |   |   |   |   firstName0=t = 1: +
|   |   |   |   |   |   |   |   |   |   |   |   firstName0=t = 0
|   |   |   |   |   |   |   |   |   |   |   |   |   lastName2=z = 1: +
|   |   |   |   |   |   |   |   |   |   |   |   |   lastName2=z = 0: −
|   |   |   |   |   |   |   |   |   lastName1=a = 0: +
|   |   |   |   lastName0=m = 0
```

```
| | | | | lastName1=l = 1: +
| | | | | lastName1=l = 0
| | | | | | firstName1=o = 1
| | | | | | | firstName4=e = 1: +
| | | | | | | firstName4=e = 0
| | | | | | | | lastName1=o = 1: +
| | | | | | | | lastName1=o = 0
| | | | | | | | | firstName3=a = 1: −
| | | | | | | | | firstName3=a = 0
| | | | | | | | | | firstName2=n = 1: +
| | | | | | | | | | firstName2=n = 0
| | | | | | | | | | | lastName2=n = 1: +
| | | | | | | | | | | lastName2=n = 0
| | | | | | | | | | | | firstName0=r = 1: +
| | | | | | | | | | | | firstName0=r = 0
| | | | | | | | | | | | | firstName2=a = 1: +
| | | | | | | | | | | | | firstName2=a = 0: −
| | | | | | firstName1=o = 0
| | | | | | | lastName3=l = 1
| | | | | | | | firstName0=j = 1: −
| | | | | | | | firstName0=j = 0: +
| | | | | | | lastName3=l = 0
| | | | | | | | lastName0=l = 1
| | | | | | | | | firstName1=a = 1
| | | | | | | | | | firstName0=d = 1: +
| | | | | | | | | | firstName0=d = 0: −
| | | | | | | | | firstName1=a = 0: +
| | | | | | | | lastName0=l = 0
| | | | | | | | | lastName0=y = 1: +
| | | | | | | | | lastName0=y = 0
| | | | | | | | | | lastName0=z = 1: +
| | | | | | | | | | lastName0=z = 0
| | | | | | | | | | | firstName3=o = 1
| | | | | | | | | | | | firstName0=a = 1: +
| | | | | | | | | | | | firstName0=a = 0
| | | | | | | | | | | | | firstName0=m = 1: +
| | | | | | | | | | | | | firstName0=m = 0: −
| | | | | | | | | | | firstName3=o = 0
| | | | | | | | | | | | firstName4=o = 1
| | | | | | | | | | | | | firstName1=r = 1: +
| | | | | | | | | | | | | firstName1=r = 0
| | | | | | | | | | | | | | firstName0=j = 1: +
| | | | | | | | | | | | | | firstName0=j = 0: −
| | | | | | | | | | | | firstName4=o = 0
| | | | | | | | | | | | | firstName2=o = 1
| | | | | | | | | | | | | | firstName0=t = 1: −
| | | | | | | | | | | | | | firstName0=t = 0: +
| | | | | | | | | | | | | firstName2=o = 0
| | | | | | | | | | | | | | lastName1=t = 1
| | | | | | | | | | | | | | | firstName0=p = 1: −
```

```
| | | | | | | | | | | | | |   |   firstName0=p = 0: +
| | | | | | | | | | | | | |   | lastName1=t = 0
| | | | | | | | | | | | | |   |   lastName1=m = 1: +
| | | | | | | | | | | | | |   |   lastName1=m = 0
| | | | | | | | | | | | | |   |   | firstName0=n = 1
| | | | | | | | | | | | | |   |   |   firstName1=e = 1: +
| | | | | | | | | | | | | |   |   |   firstName1=e = 0: −
| | | | | | | | | | | | | |   |   | firstName0=n = 0
| | | | | | | | | | | | | |   |   |   firstName1=t = 1
| | | | | | | | | | | | | |   |   |   | firstName0=a =
1: +
| | | | | | | | | | | | | | | |   |   | firstName0=a =
0: −
| | | | | | | | | | | | | | | |   | firstName1=t = 0: −


Correctly Classified Instances        40                70.1754 %
Incorrectly Classified Instances      17                29.8246 %
Kappa statistic                        0.4044
Mean absolute error                    0.2982
Root mean squared error                0.5461
Relative absolute error               59.6669 %
Root relative squared error          109.2405 %
Total Number of Instances             57

ID3 with unlimited depth, fold3

ID3

lastName0=m = 1
|   firstName2=e = 1: +
|   firstName2=e = 0
|   |   lastName1=o = 1: +
|   |   lastName1=o = 0
|   |   |   firstName0=p = 1: −
|   |   |   firstName0=p = 0
|   |   |   |   firstName0=r = 1: −
|   |   |   |   firstName0=r = 0
|   |   |   |   |   firstName0=y = 1: −
|   |   |   |   |   firstName0=y = 0
|   |   |   |   |   |   firstName1=u = 1: −
|   |   |   |   |   |   firstName1=u = 0
|   |   |   |   |   |   |   lastName3=a = 1
|   |   |   |   |   |   |   |   firstName3=r = 1: +
|   |   |   |   |   |   |   |   firstName3=r = 0: −
|   |   |   |   |   |   |   lastName3=a = 0: +
lastName0=m = 0
|   lastName1=l = 1
|   |   firstName0=d = 1: −
|   |   firstName0=d = 0: +
```

```
|   lastName1=l = 0
|   |   lastName2=l = 1
|   |   |   firstName2=r = 1: −
|   |   |   firstName2=r = 0
|   |   |   |   lastName4=n = 1: −
|   |   |   |   lastName4=n = 0
|   |   |   |   |   firstName2=h = 1: −
|   |   |   |   |   firstName2=h = 0: +
|   |   lastName2=l = 0
|   |   |   lastName2=o = 1
|   |   |   |   firstName0=b = 1: −
|   |   |   |   firstName0=b = 0: +
|   |   |   lastName2=o = 0
|   |   |   |   firstName3=f = 1: +
|   |   |   |   firstName3=f = 0
|   |   |   |   |   lastName4=l = 1
|   |   |   |   |   |   firstName2=h = 1: −
|   |   |   |   |   |   firstName2=h = 0
|   |   |   |   |   |   |   lastName0=l = 1: −
|   |   |   |   |   |   |   lastName0=l = 0
|   |   |   |   |   |   |   |   lastName0=q = 1: −
|   |   |   |   |   |   |   |   lastName0=q = 0: +
|   |   |   |   |   lastName4=l = 0
|   |   |   |   |   |   firstName1=o = 1
|   |   |   |   |   |   |   lastName0=f = 1: −
|   |   |   |   |   |   |   lastName0=f = 0
|   |   |   |   |   |   |   |   firstName2=e = 1: −
|   |   |   |   |   |   |   |   firstName2=e = 0
|   |   |   |   |   |   |   |   |   firstName3=a = 1
|   |   |   |   |   |   |   |   |   |   lastName0=h = 1: +
|   |   |   |   |   |   |   |   |   |   lastName0=h = 0: −
|   |   |   |   |   |   |   |   |   firstName3=a = 0
|   |   |   |   |   |   |   |   |   |   firstName2=n = 1: +
|   |   |   |   |   |   |   |   |   |   firstName2=n = 0
|   |   |   |   |   |   |   |   |   |   |   lastName2=n = 1: +
|   |   |   |   |   |   |   |   |   |   |   lastName2=n = 0
|   |   |   |   |   |   |   |   |   |   |   |   lastName1=a = 1: −
|   |   |   |   |   |   |   |   |   |   |   |   lastName1=a = 0
|   |   |   |   |   |   |   |   |   |   |   |   |   firstName3=g = 1: −
|   |   |   |   |   |   |   |   |   |   |   |   |   firstName3=g = 0: +
|   |   |   |   |   |   firstName1=o = 0
|   |   |   |   |   |   |   lastName0=l = 1
|   |   |   |   |   |   |   |   firstName1=a = 1
|   |   |   |   |   |   |   |   |   firstName0=d = 1: +
|   |   |   |   |   |   |   |   |   firstName0=d = 0: −
|   |   |   |   |   |   |   |   firstName1=a = 0: +
|   |   |   |   |   |   |   lastName0=l = 0
|   |   |   |   |   |   |   |   lastName3=m = 1
|   |   |   |   |   |   |   |   |   firstName2=r = 1: −
|   |   |   |   |   |   |   |   |   firstName2=r = 0: +
```

```
|   |   |   |   |   |   |   |   |   |       lastName3=m = 0
|   |   |   |   |   |   |   |   |   |   |   firstName1=e = 1
|   |   |   |   |   |   |   |   |   |   |   |   firstName2=n = 1: +
|   |   |   |   |   |   |   |   |   |   |   |   firstName2=n = 0
|   |   |   |   |   |   |   |   |   |   |   |   |   firstName2=o = 1
|   |   |   |   |   |   |   |   |   |   |   |   |   |   lastName0=b = 1: −
|   |   |   |   |   |   |   |   |   |   |   |   |   |   lastName0=b = 0: +
|   |   |   |   |   |   |   |   |   |   |   |   |   firstName2=o = 0
|   |   |   |   |   |   |   |   |   |   |   |   |   |   lastName2=r = 1
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=m = 1: −
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=m = 0: +
|   |   |   |   |   |   |   |   |   |   |   |   |   |   lastName2=r = 0: −
|   |   |   |   |   |   |   |   |   firstName1=e = 0
|   |   |   |   |   |   |   |   |   |   firstName0=t = 1
|   |   |   |   |   |   |   |   |   |   |   lastName4=e = 1: −
|   |   |   |   |   |   |   |   |   |   |   lastName4=e = 0
|   |   |   |   |   |   |   |   |   |   |   |   lastName0=s = 1: −
|   |   |   |   |   |   |   |   |   |   |   |   lastName0=s = 0: +
|   |   |   |   |   |   |   |   |   |   firstName0=t = 0
|   |   |   |   |   |   |   |   |   |   |   firstName3=o = 1
|   |   |   |   |   |   |   |   |   |   |   |   firstName0=a = 1: +
|   |   |   |   |   |   |   |   |   |   |   |   firstName0=a = 0
|   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=m = 1: +
|   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=m = 0: −
|   |   |   |   |   |   |   |   |   |   |   firstName3=o = 0
|   |   |   |   |   |   |   |   |   |   |   |   firstName4=o = 1
|   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=s = 1: −
|   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=s = 0: +
|   |   |   |   |   |   |   |   |   |   |   |   firstName4=o = 0
|   |   |   |   |   |   |   |   |   |   |   |   |   lastName0=s = 1
|   |   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=d = 1: +
|   |   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=d = 0
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   lastName4=h = 1
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=s = 1: −
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=s = 0: +
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   lastName4=h = 0: −
|   |   |   |   |   |   |   |   |   |   |   |   |   lastName0=s = 0
|   |   |   |   |   |   |   |   |   |   |   |   |   |   lastName3=l = 1
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=d = 1: −
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=d = 0: +
|   |   |   |   |   |   |   |   |   |   |   |   |   |   lastName3=l = 0: −
```

```
Correctly Classified Instances          35               76.087  %
Incorrectly Classified Instances        11               23.913  %
Kappa statistic                          0.5199
Mean absolute error                      0.2391
Root mean squared error                  0.489
Relative absolute error                 48.1752 %
Root relative squared error             98.1732 %
```

Total Number of Instances   46

ID3 with unlimited depth, fold4

ID3

lastName2=l = 1
| firstName2=r = 1: −
| firstName2=r = 0
| | firstName2=m = 1: −
| | firstName2=m = 0: +
lastName2=l = 0
| lastName2=o = 1
| | firstName0=d = 1: −
| | firstName0=d = 0
| | | firstName2=l = 1: −
| | | firstName2=l = 0: +
| lastName2=o = 0
| | firstName3=f = 1: +
| | firstName3=f = 0
| | | lastName0=m = 1
| | | | firstName0=n = 1: −
| | | | firstName0=n = 0
| | | | | firstName0=p = 1: −
| | | | | firstName0=p = 0
| | | | | | lastName1=a = 1
| | | | | | | firstName0=y = 1: −
| | | | | | | firstName0=y = 0
| | | | | | | | firstName1=t = 1: −
| | | | | | | | firstName1=t = 0
| | | | | | | | | lastName3=a = 1
| | | | | | | | | | firstName1=i = 1: +
| | | | | | | | | | firstName1=i = 0: −
| | | | | | | | | lastName3=a = 0: +
| | | | | | lastName1=a = 0: +
| | | lastName0=m = 0
| | | | lastName1=l = 1: +
| | | | lastName1=l = 0
| | | | | lastName1=t = 1: +
| | | | | lastName1=t = 0
| | | | | | firstName1=o = 1
| | | | | | | lastName1=o = 1: +
| | | | | | | lastName1=o = 0
| | | | | | | | firstName3=a = 1: −
| | | | | | | | firstName3=a = 0
| | | | | | | | | firstName2=n = 1: +
| | | | | | | | | firstName2=n = 0
| | | | | | | | | | firstName0=j = 1: −
| | | | | | | | | | firstName0=j = 0
| | | | | | | | | | | firstName4=e = 1: +

```
|   |   |   |   |   |   |   |   |   |   |   |   firstName4=e = 0
|   |   |   |   |   |   |   |   |   |   |   |   |   lastName2=n = 1: +
|   |   |   |   |   |   |   |   |   |   |   |   |   lastName2=n = 0
|   |   |   |   |   |   |   |   |   |   |   |   |   |   lastName1=a = 1: −
|   |   |   |   |   |   |   |   |   |   |   |   |   |   lastName1=a = 0
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=b = 1: −
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=b = 0: +
|   |   |   |   |   |   firstName1=o = 0
|   |   |   |   |   |   |   firstName4=o = 1
|   |   |   |   |   |   |   |   firstName0=m = 1: −
|   |   |   |   |   |   |   |   firstName0=m = 0
|   |   |   |   |   |   |   |   |   firstName0=s = 1: −
|   |   |   |   |   |   |   |   |   firstName0=s = 0: +
|   |   |   |   |   |   |   firstName4=o = 0
|   |   |   |   |   |   |   |   lastName3=m = 1
|   |   |   |   |   |   |   |   |   firstName2=r = 1: −
|   |   |   |   |   |   |   |   |   firstName2=r = 0: +
|   |   |   |   |   |   |   |   lastName3=m = 0
|   |   |   |   |   |   |   |   |   lastName4=l = 1
|   |   |   |   |   |   |   |   |   |   firstName0=j = 1: −
|   |   |   |   |   |   |   |   |   |   firstName0=j = 0
|   |   |   |   |   |   |   |   |   |   |   lastName0=l = 1: −
|   |   |   |   |   |   |   |   |   |   |   lastName0=l = 0: +
|   |   |   |   |   |   |   |   |   lastName4=l = 0
|   |   |   |   |   |   |   |   |   |   firstName1=e = 1
|   |   |   |   |   |   |   |   |   |   |   firstName0=j = 1: −
|   |   |   |   |   |   |   |   |   |   |   firstName0=j = 0
|   |   |   |   |   |   |   |   |   |   |   |   firstName3=a = 1: −
|   |   |   |   |   |   |   |   |   |   |   |   firstName3=a = 0
|   |   |   |   |   |   |   |   |   |   |   |   |   firstName2=e = 1: −
|   |   |   |   |   |   |   |   |   |   |   |   |   firstName2=e = 0
|   |   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=g = 1
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   lastName0=b = 1: −
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   lastName0=b = 0: +
|   |   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=g = 0: +
|   |   |   |   |   |   |   |   |   firstName1=e = 0
|   |   |   |   |   |   |   |   |   |   lastName4=z = 1
|   |   |   |   |   |   |   |   |   |   |   firstName0=s = 1: −
|   |   |   |   |   |   |   |   |   |   |   firstName0=s = 0: +
|   |   |   |   |   |   |   |   |   |   lastName4=z = 0
|   |   |   |   |   |   |   |   |   |   |   lastName0=l = 1
|   |   |   |   |   |   |   |   |   |   |   |   firstName1=a = 1
|   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=d = 1: +
|   |   |   |   |   |   |   |   |   |   |   |   |   firstName0=d = 0: −
|   |   |   |   |   |   |   |   |   |   |   |   firstName1=a = 0: +
|   |   |   |   |   |   |   |   |   |   |   lastName0=l = 0
|   |   |   |   |   |   |   |   |   |   |   |   firstName2=o = 1
|   |   |   |   |   |   |   |   |   |   |   |   |   lastName0=d = 1: +
|   |   |   |   |   |   |   |   |   |   |   |   |   lastName0=d = 0
|   |   |   |   |   |   |   |   |   |   |   |   |   |   lastName0=z = 1: +
```

```
| | | | | | | | | | | | | |   |   | lastName0=z = 0: −
| | | | | | | | | | | | | |   | firstName2=o = 0
| | | | | | | | | | | | | |   |   lastName3=l = 1
| | | | | | | | | | | | | |   |   | firstName0=j = 1: −
| | | | | | | | | | | | | |   |   | firstName0=j = 0
| | | | | | | | | | | | | |   |   |   firstName2=n = 1: −
| | | | | | | | | | | | | |   |   |   firstName2=n = 0: +
| | | | | | | | | | | | | |   |   lastName3=l = 0
| | | | | | | | | | | | | |   |   | firstName3=o = 1
| | | | | | | | | | | | | |   |   |   firstName0=a = 1: +
| | | | | | | | | | | | | |   |   |   firstName0=a = 0: −
| | | | | | | | | | | | | |   |   | firstName3=o = 0: −
```

Correctly Classified Instances   49   74.2424 %
Incorrectly Classified Instances   17   25.7576 %
Kappa statistic   0.4877
Mean absolute error   0.2576
Root mean squared error   0.5075
Relative absolute error   53.2228 %
Root relative squared error   103.2228 %
Total Number of Instances   66

ID3 with unlimited depth, fold5

ID3

```
lastName2=l = 1
|   firstName2=h = 1: −
|   firstName2=h = 0
|   |   lastName0=o = 1: −
|   |   lastName0=o = 0: +
lastName2=l = 0
|   lastName0=m = 1
|   |   firstName2=n = 1: −
|   |   firstName2=n = 0
|   |   |   lastName4=i = 1: −
|   |   |   lastName4=i = 0
|   |   |   |   firstName0=y = 1: −
|   |   |   |   firstName0=y = 0
|   |   |   |   |   firstName2=i = 1: −
|   |   |   |   |   firstName2=i = 0: +
|   lastName0=m = 0
|   |   lastName3=m = 1
|   |   |   firstName2=r = 1
|   |   |   |   firstName0=a = 1: +
|   |   |   |   firstName0=a = 0: −
|   |   |   firstName2=r = 0: +
|   |   lastName3=m = 0
|   |   |   lastName3=l = 1
```

```
|   |   |   |   |     firstName0=t = 1: -
|   |   |   |   |     firstName0=t = 0
|   |   |   |   |   |   firstName3=a = 1: -
|   |   |   |   |   |   firstName3=a = 0
|   |   |   |   |   |   |   firstName3=o = 1: -
|   |   |   |   |   |   |   firstName3=o = 0: +
|   |   |   lastName3=l = 0
|   |   |   |   lastName0=l = 1
|   |   |   |   |   firstName1=a = 1: -
|   |   |   |   |   firstName1=a = 0: +
|   |   |   |   lastName0=l = 0
|   |   |   |   |   lastName4=l = 1
|   |   |   |   |   |   firstName0=j = 1
|   |   |   |   |   |   |   firstName1=u = 1: +
|   |   |   |   |   |   |   firstName1=u = 0: -
|   |   |   |   |   |   firstName0=j = 0: +
|   |   |   |   |   lastName4=l = 0
|   |   |   |   |   |   firstName2=o = 1
|   |   |   |   |   |   |   firstName0=n = 1: -
|   |   |   |   |   |   |   firstName0=n = 0
|   |   |   |   |   |   |   |   lastName0=b = 1: -
|   |   |   |   |   |   |   |   lastName0=b = 0: +
|   |   |   |   |   |   firstName2=o = 0
|   |   |   |   |   |   |   firstName0=r = 1
|   |   |   |   |   |   |   |   firstName1=i = 1: -
|   |   |   |   |   |   |   |   firstName1=i = 0
|   |   |   |   |   |   |   |   |   firstName1=u = 1: -
|   |   |   |   |   |   |   |   |   firstName1=u = 0
|   |   |   |   |   |   |   |   |   |   firstName3=a = 1: -
|   |   |   |   |   |   |   |   |   |   firstName3=a = 0: +
|   |   |   |   |   |   |   firstName0=r = 0
|   |   |   |   |   |   |   |   lastName0=y = 1: +
|   |   |   |   |   |   |   |   lastName0=y = 0
|   |   |   |   |   |   |   |   |   firstName0=a = 1
|   |   |   |   |   |   |   |   |   |   firstName1=r = 1
|   |   |   |   |   |   |   |   |   |   |   firstName2=l = 1: +
|   |   |   |   |   |   |   |   |   |   |   firstName2=l = 0: -
|   |   |   |   |   |   |   |   |   |   firstName1=r = 0: +
|   |   |   |   |   |   |   |   |   firstName0=a = 0
|   |   |   |   |   |   |   |   |   |   firstName4=o = 1
|   |   |   |   |   |   |   |   |   |   |   firstName0=w = 1: -
|   |   |   |   |   |   |   |   |   |   |   firstName0=w = 0
|   |   |   |   |   |   |   |   |   |   |   |   lastName2=e = 1: -
|   |   |   |   |   |   |   |   |   |   |   |   lastName2=e = 0: +
|   |   |   |   |   |   |   |   |   |   firstName4=o = 0
|   |   |   |   |   |   |   |   |   |   |   lastName3=p = 1: +
|   |   |   |   |   |   |   |   |   |   |   lastName3=p = 0
|   |   |   |   |   |   |   |   |   |   |   |   firstName1=e = 1
|   |   |   |   |   |   |   |   |   |   |   |   |   lastName1=l = 1: +
|   |   |   |   |   |   |   |   |   |   |   |   |   lastName1=l = 0
```

```
| | | | | | | | | | | | | | | lastName3=k = 1
| | | | | | | | | | | | | | |   firstName2=a = 1: −
| | | | | | | | | | | | | | |   firstName2=a = 0: +
| | | | | | | | | | | | | | | lastName3=k = 0
| | | | | | | | | | | | | | |   firstName0=f = 1: +
| | | | | | | | | | | | | | |   firstName0=f = 0: −
| | | | | | | | | | | | | firstName1=e = 0
| | | | | | | | | | | | |   firstName1=o = 1
| | | | | | | | | | | | |     lastName1=o = 1: +
| | | | | | | | | | | | |     lastName1=o = 0
| | | | | | | | | | | | |       lastName2=e = 1
| | | | | | | | | | | | |       | firstName0=j = 1: −
| | | | | | | | | | | | |       | firstName0=j = 0: +
| | | | | | | | | | | | |       lastName2=e = 0: −
| | | | | | | | | | | | firstName1=o = 0
| | | | | | | | | | | |   lastName0=a = 1
| | | | | | | | | | | |     lastName3=e = 1: −
| | | | | | | | | | | |     lastName3=e = 0
| | | | | | | | | | | |     | firstName0=d = 1: −
| | | | | | | | | | | |     | firstName0=d = 0: +
| | | | | | | | | | | |   lastName0=a = 0
| | | | | | | | | | | |     lastName1=m = 1: +
| | | | | | | | | | | |     lastName1=m = 0: −


Correctly Classified Instances        41               68.3333 %
Incorrectly Classified Instances      19               31.6667 %
Kappa statistic                        0.3165
Mean absolute error                    0.3167
Root mean squared error                0.5627
Relative absolute error               72.8059 %
Root relative squared error          120.9619 %
Total Number of Instances             60

ID3 with depth of 4,fold1

ID3

firstName3=f = 1: +
firstName3=f = 0
|   lastName0=c = 1: −
|   lastName0=c = 0
|   |   lastName4=l = 1
|   |   |   lastName0=q = 1: −
|   |   |   lastName0=q = 0: +
|   |   lastName4=l = 0
|   |   |   firstName0=r = 1
|   |   |   |   firstName1=o = 1: +
|   |   |   |   firstName1=o = 0: +
|   |   |   firstName0=r = 0
```

```
| | | | lastName0=m = 1: +
| | | | lastName0=m = 0: -


Correctly Classified Instances        39                60      %
Incorrectly Classified Instances      26                40      %
Kappa statistic                        0.2051
Mean absolute error                    0.4438
Root mean squared error                0.5089
Relative absolute error               88.7844 %
Root relative squared error          101.7963 %
Total Number of Instances             65

ID3 with depth of 4,fold2

ID3

lastName3=m = 1: +
lastName3=m = 0
|  firstName3=f = 1: +
|  firstName3=f = 0
|  |  lastName4=l = 1
|  |  |  lastName1=a = 1
|  |  |  |  firstName1=e = 1: +
|  |  |  |  firstName1=e = 0: -
|  |  |  lastName1=a = 0: +
|  |  lastName4=l = 0
|  |  |  lastName2=l = 1
|  |  |  |  firstName2=r = 1: -
|  |  |  |  firstName2=r = 0: +
|  |  |  lastName2=l = 0
|  |  |  |  lastName0=m = 1: +
|  |  |  |  lastName0=m = 0: -


Correctly Classified Instances        39                68.4211 %
Incorrectly Classified Instances      18                31.5789 %
Kappa statistic                        0.3635
Mean absolute error                    0.4146
Root mean squared error                0.4938
Relative absolute error               82.938  %
Root relative squared error           98.7851 %
Total Number of Instances             57

ID3 with depth of 4,fold3

ID3

lastName0=m = 1
|  firstName2=e = 1: +
```

```
|   firstName2=e = 0
|   |   lastName1=o = 1: +
|   |   lastName1=o = 0
|   |   |   firstName0=p = 1: −
|   |   |   firstName0=p = 0
|   |   |   |   firstName0=r = 1: −
|   |   |   |   firstName0=r = 0: +
lastName0=m = 0
|   lastName1=l = 1
|   |   firstName0=d = 1: −
|   |   firstName0=d = 0: +
|   lastName1=l = 0
|   |   lastName2=l = 1
|   |   |   firstName2=r = 1: −
|   |   |   firstName2=r = 0
|   |   |   |   lastName4=n = 1: −
|   |   |   |   lastName4=n = 0: +
|   |   lastName2=l = 0
|   |   |   lastName2=o = 1
|   |   |   |   firstName0=b = 1: −
|   |   |   |   firstName0=b = 0: +
|   |   |   lastName2=o = 0
|   |   |   |   firstName3=f = 1: +
|   |   |   |   firstName3=f = 0: −
```

Correctly Classified Instances	27	58.6957 %
Incorrectly Classified Instances	19	41.3043 %
Kappa statistic	0.2069	
Mean absolute error	0.4354	
Root mean squared error	0.5113	
Relative absolute error	87.709 %	
Root relative squared error	102.6409 %	
Total Number of Instances	46	

ID3 with depth of 4,fold4

ID3

```
lastName2=l = 1
|   firstName2=r = 1: −
|   firstName2=r = 0
|   |   firstName2=m = 1: −
|   |   firstName2=m = 0: +
lastName2=l = 0
|   lastName2=o = 1
|   |   firstName0=d = 1: −
|   |   firstName0=d = 0
|   |   |   firstName2=l = 1: −
|   |   |   firstName2=l = 0: +
```

```
|   lastName2=o = 0
|   |   firstName3=f = 1: +
|   |   firstName3=f = 0
|   |   |   lastName0=m = 1
|   |   |   |   firstName0=n = 1: −
|   |   |   |   firstName0=n = 0: +
|   |   |   lastName0=m = 0
|   |   |   |   lastName1=l = 1: +
|   |   |   |   lastName1=l = 0: −
```

```
Correctly Classified Instances          48              72.7273 %
Incorrectly Classified Instances        18              27.2727 %
Kappa statistic                          0.409
Mean absolute error                      0.3812
Root mean squared error                  0.4582
Relative absolute error                 78.7652 %
Root relative squared error             93.1911 %
Total Number of Instances               66
```

ID3 with depth of 4,fold5

ID3

```
lastName2=l = 1
|   firstName2=h = 1: −
|   firstName2=h = 0
|   |   lastName0=o = 1: −
|   |   lastName0=o = 0: +
lastName2=l = 0
|   lastName0=m = 1
|   |   firstName2=n = 1: −
|   |   firstName2=n = 0
|   |   |   lastName4=i = 1: −
|   |   |   lastName4=i = 0
|   |   |   |   firstName0=y = 1: −
|   |   |   |   firstName0=y = 0: +
|   lastName0=m = 0
|   |   lastName3=m = 1
|   |   |   firstName2=r = 1
|   |   |   |   firstName0=a = 1: +
|   |   |   |   firstName0=a = 0: −
|   |   |   firstName2=r = 0: +
|   |   lastName3=m = 0
|   |   |   lastName3=l = 1
|   |   |   |   firstName0=t = 1: −
|   |   |   |   firstName0=t = 0: +
|   |   |   lastName3=l = 0
|   |   |   |   lastName0=l = 1: +
|   |   |   |   lastName0=l = 0: −
```

```
Correctly Classified Instances        41              68.3333 %
Incorrectly Classified Instances      19              31.6667 %
Kappa statistic                        0.2127
Mean absolute error                    0.4378
Root mean squared error                0.5139
Relative absolute error              100.6463 %
Root relative squared error          110.4571 %
Total Number of Instances             60

ID3 with depth of 8,fold1

ID3

firstName3=f = 1: +
firstName3=f = 0
|   lastName0=c = 1: −
|   lastName0=c = 0
|   |   lastName4=l = 1
|   |   |   lastName0=q = 1: −
|   |   |   lastName0=q = 0: +
|   |   lastName4=l = 0
|   |   |   firstName0=r = 1
|   |   |   |   firstName1=o = 1: +
|   |   |   |   firstName1=o = 0
|   |   |   |   |   firstName1=a = 1: +
|   |   |   |   |   firstName1=a = 0
|   |   |   |   |   |   firstName1=e = 1: +
|   |   |   |   |   |   firstName1=e = 0: −
|   |   |   firstName0=r = 0
|   |   |   |   lastName0=m = 1
|   |   |   |   |   firstName2=n = 1: −
|   |   |   |   |   firstName2=n = 0
|   |   |   |   |   |   firstName0=p = 1: −
|   |   |   |   |   |   firstName0=p = 0
|   |   |   |   |   |   |   lastName2=t = 1
|   |   |   |   |   |   |   |   firstName0=t = 1: +
|   |   |   |   |   |   |   |   firstName0=t = 0: −
|   |   |   |   |   |   |   lastName2=t = 0: +
|   |   |   |   lastName0=m = 0
|   |   |   |   |   lastName0=l = 1
|   |   |   |   |   |   firstName1=a = 1
|   |   |   |   |   |   |   firstName0=d = 1: +
|   |   |   |   |   |   |   firstName0=d = 0: −
|   |   |   |   |   |   firstName1=a = 0: +
|   |   |   |   |   lastName0=l = 0
|   |   |   |   |   |   lastName3=m = 1
|   |   |   |   |   |   |   firstName2=r = 1: −
|   |   |   |   |   |   |   firstName2=r = 0: +
```

```
| | | | | |   | lastName3=m = 0
| | | | | |   |   lastName2=l = 1
| | | | | |   |   |   firstName2=r = 1: -
| | | | | |   |   |   firstName2=r = 0: +
| | | | | |   |   lastName2=l = 0
| | | | | |   |   |   lastName3=l = 1: +
| | | | | |   |   |   lastName3=l = 0: -


Correctly Classified Instances          48              73.8462 %
Incorrectly Classified Instances        17              26.1538 %
Kappa statistic                          0.4785
Mean absolute error                      0.3371
Root mean squared error                  0.4722
Relative absolute error                 67.4285 %
Root relative squared error             94.4514 %
Total Number of Instances               65

ID3 with depth of 8,fold2

ID3

lastName3=m = 1: +
lastName3=m = 0
|   firstName3=f = 1: +
|   firstName3=f = 0
|   |   lastName4=l = 1
|   |   |   lastName1=a = 1
|   |   |   |   firstName1=e = 1: +
|   |   |   |   firstName1=e = 0: -
|   |   |   lastName1=a = 0: +
|   |   lastName4=l = 0
|   |   |   lastName2=l = 1
|   |   |   |   firstName2=r = 1: -
|   |   |   |   firstName2=r = 0
|   |   |   |   |   lastName4=n = 1
|   |   |   |   |   |   firstName0=e = 1: +
|   |   |   |   |   |   firstName0=e = 0: -
|   |   |   |   |   lastName4=n = 0
|   |   |   |   |   |   firstName2=h = 1: -
|   |   |   |   |   |   firstName2=h = 0: +
|   |   |   lastName2=l = 0
|   |   |   |   lastName0=m = 1
|   |   |   |   |   firstName2=n = 1: -
|   |   |   |   |   firstName2=n = 0
|   |   |   |   |   |   firstName2=e = 1: +
|   |   |   |   |   |   firstName2=e = 0
|   |   |   |   |   |   |   firstName0=s = 1: -
|   |   |   |   |   |   |   firstName0=s = 0
|   |   |   |   |   |   |   |   firstName0=p = 1: -
```

```
| | | | | | | | firstName0=p = 0: +
| | | | lastName0=m = 0
| | | | | lastName1=l = 1: +
| | | | | lastName1=l = 0
| | | | | | firstName1=o = 1
| | | | | | | firstName4=e = 1: +
| | | | | | | firstName4=e = 0
| | | | | | | | lastName1=o = 1: +
| | | | | | | | lastName1=o = 0: −
| | | | | | firstName1=o = 0
| | | | | | | lastName3=l = 1
| | | | | | | | firstName0=j = 1: −
| | | | | | | | firstName0=j = 0: +
| | | | | | | lastName3=l = 0
| | | | | | | | lastName0=l = 1: +
| | | | | | | | lastName0=l = 0: −
```

```
Correctly Classified Instances          41               71.9298 %
Incorrectly Classified Instances        16               28.0702 %
Kappa statistic                          0.437
Mean absolute error                      0.337
Root mean squared error                  0.4973
Relative absolute error                 67.4215 %
Root relative squared error             99.4656 %
Total Number of Instances               57
```

ID3 with depth of 8,fold3

ID3

```
lastName0=m = 1
|   firstName2=e = 1: +
|   firstName2=e = 0
|   |   lastName1=o = 1: +
|   |   lastName1=o = 0
|   |   |   firstName0=p = 1: −
|   |   |   firstName0=p = 0
|   |   |   |   firstName0=r = 1: −
|   |   |   |   firstName0=r = 0
|   |   |   |   |   firstName0=y = 1: −
|   |   |   |   |   firstName0=y = 0
|   |   |   |   |   |   firstName1=u = 1: −
|   |   |   |   |   |   firstName1=u = 0
|   |   |   |   |   |   |   lastName3=a = 1
|   |   |   |   |   |   |   |   firstName3=r = 1: +
|   |   |   |   |   |   |   |   firstName3=r = 0: −
|   |   |   |   |   |   |   lastName3=a = 0: +
lastName0=m = 0
|   lastName1=l = 1
```

```
|   |   firstName0=d = 1: −
|   |   firstName0=d = 0: +
|   lastName1=l = 0
|   |   lastName2=l = 1
|   |   |   firstName2=r = 1: −
|   |   |   firstName2=r = 0
|   |   |   |   lastName4=n = 1: −
|   |   |   |   lastName4=n = 0
|   |   |   |   |   firstName2=h = 1: −
|   |   |   |   |   firstName2=h = 0: +
|   |   lastName2=l = 0
|   |   |   lastName2=o = 1
|   |   |   |   firstName0=b = 1: −
|   |   |   |   firstName0=b = 0: +
|   |   |   lastName2=o = 0
|   |   |   |   firstName3=f = 1: +
|   |   |   |   firstName3=f = 0
|   |   |   |   |   lastName4=l = 1
|   |   |   |   |   |   firstName2=h = 1: −
|   |   |   |   |   |   firstName2=h = 0
|   |   |   |   |   |   |   lastName0=l = 1: −
|   |   |   |   |   |   |   lastName0=l = 0
|   |   |   |   |   |   |   |   lastName0=q = 1: −
|   |   |   |   |   |   |   |   lastName0=q = 0: +
|   |   |   |   |   lastName4=l = 0
|   |   |   |   |   |   firstName1=o = 1
|   |   |   |   |   |   |   lastName0=f = 1: −
|   |   |   |   |   |   |   lastName0=f = 0
|   |   |   |   |   |   |   |   firstName2=e = 1: −
|   |   |   |   |   |   |   |   firstName2=e = 0: +
|   |   |   |   |   |   firstName1=o = 0
|   |   |   |   |   |   |   lastName0=l = 1
|   |   |   |   |   |   |   |   firstName1=a = 1: −
|   |   |   |   |   |   |   |   firstName1=a = 0: +
|   |   |   |   |   |   |   lastName0=l = 0
|   |   |   |   |   |   |   |   lastName3=m = 1: +
|   |   |   |   |   |   |   |   lastName3=m = 0: −
```

Correctly Classified Instances	29	63.0435 %
Incorrectly Classified Instances	17	36.9565 %
Kappa statistic	0.2692	
Mean absolute error	0.394	
Root mean squared error	0.5435	
Relative absolute error	79.3656 %	
Root relative squared error	109.1136 %	
Total Number of Instances	46	

ID3 with depth of 8,fold4

```
ID3

lastName2=l = 1
|   firstName2=r = 1: -
|   firstName2=r = 0
|   |   firstName2=m = 1: -
|   |   firstName2=m = 0: +
lastName2=l = 0
|   lastName2=o = 1
|   |   firstName0=d = 1: -
|   |   firstName0=d = 0
|   |   |   firstName2=l = 1: -
|   |   |   firstName2=l = 0: +
|   lastName2=o = 0
|   |   firstName3=f = 1: +
|   |   firstName3=f = 0
|   |   |   lastName0=m = 1
|   |   |   |   firstName0=n = 1: -
|   |   |   |   firstName0=n = 0
|   |   |   |   |   firstName0=p = 1: -
|   |   |   |   |   firstName0=p = 0
|   |   |   |   |   |   lastName1=a = 1
|   |   |   |   |   |   |   firstName0=y = 1: -
|   |   |   |   |   |   |   firstName0=y = 0
|   |   |   |   |   |   |   |   firstName1=t = 1: -
|   |   |   |   |   |   |   |   firstName1=t = 0: +
|   |   |   |   |   |   lastName1=a = 0: +
|   |   |   lastName0=m = 0
|   |   |   |   lastName1=l = 1: +
|   |   |   |   lastName1=l = 0
|   |   |   |   |   lastName1=t = 1: +
|   |   |   |   |   lastName1=t = 0
|   |   |   |   |   |   firstName1=o = 1
|   |   |   |   |   |   |   lastName1=o = 1: +
|   |   |   |   |   |   |   lastName1=o = 0
|   |   |   |   |   |   |   |   firstName3=a = 1: -
|   |   |   |   |   |   |   |   firstName3=a = 0: +
|   |   |   |   |   |   firstName1=o = 0
|   |   |   |   |   |   |   firstName4=o = 1
|   |   |   |   |   |   |   |   firstName0=m = 1: -
|   |   |   |   |   |   |   |   firstName0=m = 0: +
|   |   |   |   |   |   |   firstName4=o = 0
|   |   |   |   |   |   |   |   lastName3=m = 1: +
|   |   |   |   |   |   |   |   lastName3=m = 0: -


Correctly Classified Instances          47               71.2121 %
Incorrectly Classified Instances        19               28.7879 %
Kappa statistic                          0.4011
Mean absolute error                      0.3487
```

```
Root mean squared error                    0.476
Relative absolute error                    72.0616 %
Root relative squared error                96.8092 %
Total Number of Instances                  66

ID3 with depth of 8,fold5

ID3

lastName2=l = 1
|   firstName2=h = 1: −
|   firstName2=h = 0
|   |   lastName0=o = 1: −
|   |   lastName0=o = 0: +
lastName2=l = 0
|   lastName0=m = 1
|   |   firstName2=n = 1: −
|   |   firstName2=n = 0
|   |   |   lastName4=i = 1: −
|   |   |   lastName4=i = 0
|   |   |   |   firstName0=y = 1: −
|   |   |   |   firstName0=y = 0
|   |   |   |   |   firstName2=i = 1: −
|   |   |   |   |   firstName2=i = 0: +
|   lastName0=m = 0
|   |   lastName3=m = 1
|   |   |   firstName2=r = 1
|   |   |   |   firstName0=a = 1: +
|   |   |   |   firstName0=a = 0: −
|   |   |   firstName2=r = 0: +
|   |   lastName3=m = 0
|   |   |   lastName3=l = 1
|   |   |   |   firstName0=t = 1: −
|   |   |   |   firstName0=t = 0
|   |   |   |   |   firstName3=a = 1: −
|   |   |   |   |   firstName3=a = 0
|   |   |   |   |   |   firstName3=o = 1: −
|   |   |   |   |   |   firstName3=o = 0: +
|   |   |   lastName3=l = 0
|   |   |   |   lastName0=l = 1
|   |   |   |   |   firstName1=a = 1: −
|   |   |   |   |   firstName1=a = 0: +
|   |   |   |   lastName0=l = 0
|   |   |   |   |   lastName4=l = 1
|   |   |   |   |   |   firstName0=j = 1
|   |   |   |   |   |   |   firstName1=u = 1: +
|   |   |   |   |   |   |   firstName1=u = 0: −
|   |   |   |   |   |   firstName0=j = 0: +
|   |   |   |   |   lastName4=l = 0
|   |   |   |   |   |   firstName2=o = 1
```

```
| | | | | | | firstName0=n = 1: -
| | | | | | | firstName0=n = 0
| | | | | | | | lastName0=b = 1: -
| | | | | | | | lastName0=b = 0: +
| | | | | | firstName2=o = 0
| | | | | | | firstName0=r = 1
| | | | | | | | firstName1=i = 1: -
| | | | | | | | firstName1=i = 0: +
| | | | | | | firstName0=r = 0
| | | | | | | | lastName0=y = 1: +
| | | | | | | | lastName0=y = 0: -
```

Correctly Classified Instances   41   68.3333 %
Incorrectly Classified Instances   19   31.6667 %
Kappa statistic   0.2127
Mean absolute error   0.3833
Root mean squared error   0.5284
Relative absolute error   88.1335 %
Root relative squared error   113.5811 %
Total Number of Instances   60

SGD with decision stumps as features

fold1

Cost on test data:26.53709734558041
number of correctly predicted instances:48
number of falsely predicted instances:17
total number of instances:65
accuracy:73.85%

fold2

Cost on test data:20.84851856224605
number of correctly predicted instances:42
number of falsely predicted instances:15
total number of instances:57
accuracy:73.68%

fold3

Cost on test data:20.680943994544386
number of correctly predicted instances:32
number of falsely predicted instances:14
total number of instances:46
accuracy:69.57%

fold4

```
Cost on test data:19.986960507553857
number of correctly predicted instances:53
number of falsely predicted instances:13
total number of instances:66
accuracy:80.3%

fold5

Cost on test data:26.214901290833314
number of correctly predicted instances:42
number of falsely predicted instances:18
total number of instances:60
accuracy:70.0%
```