In [290]:
```
import warnings
warnings.filterwarnings('ignore')
%run ~/Desktop/KimConger_Assignment4/CompareFeatureSelectionMethods.py
```

```
Part One
Decision Tree (iteration results may vary)
Overall Accuracy:  0.9266666666666666
Confusion Matrix:
[[50  0  0]
 [ 0 49  1]
 [ 0 10 40]]



Part Two
eigenvectors:
[[ 0.36158968 -0.08226889  0.85657211  0.35884393]
 [ 0.65653988  0.72971237 -0.1757674  -0.07470647]
 [-0.58099728  0.59641809  0.07252408  0.54906091]
 [ 0.31725455 -0.32409435 -0.47971899  0.75112056]]

eigenvalues:
[4.22484077 0.24224357 0.07852391 0.02368303]

PoV (decimals):
[0.92461621 0.97763178 0.99481691 1.        ]

Decision Tree (iteration results may vary)
Overall Accuracy:  0.9133333333333333
Confusion Matrix:
[[50  0  0]
 [ 0 44  6]
 [ 0  7 43]]
```

```
Part Three

iteration 0
Decision Tree (iteration results may vary)
Overall Accuracy:  0.9133333333333333
Confusion Matrix:
[[50  0  0]
 [ 0 48  2]
 [ 0 11 39]]


iteration 1
old feature subset is full
old feature subset: ['x1', 'x2', 'x3', 'x4', 'z1', 'z2', 'z3', 'z4']
m=2
new feature subset: ['x1', 'x3', 'z1', 'z2', 'z3', 'z4']
list of features unused ['x2', 'x4']
new accuracy: 0.9266666666666666
STATUS: IMPROVED
same as best accuracy, but feature list is smaller than that of the current subset. update best feature subset.
new acc 0.9266666666666666
best accuracy 0.9133333333333333

best feature subset ['x1', 'x3', 'z1', 'z2', 'z3', 'z4']

iteration 2
r2<=0.5, delete m features
old feature subset: ['x1', 'x3', 'z1', 'z2', 'z3', 'z4']
new feature subset: ['x3', 'z1', 'z2', 'z3', 'z4']
list of features unused: ['x2', 'x4', 'x1']
new accuracy: 0.9133333333333333
p_accept: 0.9857145304114474
random uniform variable: 0.7377138388840462
STATUS: ACCEPTED

best feature subset ['x1', 'x3', 'z1', 'z2', 'z3', 'z4']
```

```
iteration 3
r2<=0.5, delete m features
old feature subset: ['x3', 'z1', 'z2', 'z3', 'z4']
m=2
new feature subset: ['x3', 'z2', 'z3']
list of features unused: ['x2', 'x4', 'x1', 'z1', 'z4']
new accuracy: 0.9266666666666666
STATUS: IMPROVED

best feature subset ['x1', 'x3', 'z1', 'z2', 'z3', 'z4']

iteration 4
r2<=0.5, delete m features
old feature subset: ['x3', 'z2', 'z3']
new feature subset: ['z2', 'z3']
list of features unused: ['x2', 'x4', 'x1', 'z1', 'z4', 'x3']
new accuracy: 0.4066666666666667
p_accept: 0.18573149241578887
random uniform variable: 0.7022431983763632
STATUS: DISCARDED

best feature subset ['x1', 'x3', 'z1', 'z2', 'z3', 'z4']

iteration 5
r2<=0.5, delete m features
old feature subset: ['x3', 'z2', 'z3']
m=2
new feature subset: ['z3']
list of features unused: ['x2', 'x4', 'x1', 'z1', 'z4', 'z2', 'x3']
new accuracy: 0.4266666666666667
p_accept: 0.11552441555251403
random uniform variable: 0.40848877563114794
STATUS: DISCARDED

best feature subset ['x1', 'x3', 'z1', 'z2', 'z3', 'z4']
```

```
iteration 6
r2<=0.5, delete m features
old feature subset: ['x3', 'z2', 'z3']
m=2
new feature subset: ['x3']
list of features unused: ['x2', 'x4', 'x1', 'z1', 'z4', 'z3', 'z2']
new accuracy: 0.9133333333333333
p_accept: 0.9305844530874183
random uniform variable: 0.11294755381435684
STATUS: ACCEPTED

best feature subset ['x1', 'x3', 'z1', 'z2', 'z3', 'z4']

iteration 7
r2>0.5, len > 1
old feature subset: ['x3']
m=2
new feature subset: ['x3', 'x1', 'x4']
list of features unused: ['x2', 'z1', 'z4', 'z3', 'z2']
new accuracy: 0.9266666666666666
STATUS: IMPROVED

best feature subset ['x1', 'x3', 'z1', 'z2', 'z3', 'z4']

iteration 8
r2>0.5, len > 1
old feature subset: ['x3', 'x1', 'x4']
m=2
new feature subset: ['x3', 'x1', 'x4', 'z3', 'z1']
list of features unused: ['x2', 'z4', 'z2']
new accuracy: 0.92
p_accept: 0.9508873171767636
random uniform variable: 0.0006046900224019325
STATUS: ACCEPTED

best feature subset ['x1', 'x3', 'z1', 'z2', 'z3', 'z4']

iteration 9
r2<=0.5, delete m features
old feature subset: ['x3', 'x1', 'x4', 'z3', 'z1']
new feature subset: ['x3', 'x1', 'x4', 'z3']
list of features unused: ['x2', 'z4', 'z2', 'z1']
new accuracy: 0.9133333333333333
p_accept: 0.9436773000055998
```

```
random uniform variable: 0.6053220508727507
STATUS: ACCEPTED

best feature subset ['x1', 'x3', 'z1', 'z2', 'z3', 'z4']

iteration 10
r2<=0.5, delete m features
old feature subset: ['x3', 'x1', 'x4', 'z3']
new feature subset: ['x1', 'x4', 'z3']
list of features unused: ['x2', 'z4', 'z2', 'z1', 'x3']
new accuracy: 0.94
STATUS: IMPROVED
same as best accuracy, but feature list is smaller than that of the current subset. update best feature subset.
new acc 0.94
best accuracy 0.9266666666666666

best feature subset ['x1', 'x4', 'z3']

iteration 11
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3']
m=2
new feature subset: ['z3']
list of features unused: ['x2', 'z4', 'z2', 'z1', 'x3', 'x1', 'x4']
new accuracy: 0.4266666666666667
p_accept: 0.004249334452156345
random uniform variable: 0.13884449847449543
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 12
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3']
new feature subset: ['x4', 'z3']
list of features unused: ['x2', 'z4', 'z2', 'z1', 'x3', 'x1']
new accuracy: 0.94
p_accept: 1.0
random uniform variable: 0.832288785986104
STATUS: ACCEPTED

best feature subset ['x1', 'x4', 'z3']

iteration 13
r2>0.5, len > 1
```

```
old feature subset: ['x4', 'z3']
new feature subset: ['x4', 'z3', 'x2']
list of features unused: ['z4', 'z2', 'z1', 'x3', 'x1']
new accuracy: 0.9333333333333333
p_accept: 0.9184145755260222
random uniform variable: 0.46184616834008374
STATUS: ACCEPTED

best feature subset ['x1', 'x4', 'z3']

iteration 14
r2>0.5, len > 1
old feature subset: ['x4', 'z3', 'x2']
new feature subset: ['x4', 'z3', 'x2', 'z4']
list of features unused: ['z2', 'z1', 'x3', 'x1']
new accuracy: 0.88
p_accept: 0.47575267845565056
random uniform variable: 0.02841668072796011
STATUS: ACCEPTED

best feature subset ['x1', 'x4', 'z3']

iteration 15
r2>0.5, len > 1
old feature subset: ['x4', 'z3', 'x2', 'z4']
new feature subset: ['x4', 'z3', 'x2', 'z4', 'z2']
list of features unused: ['z1', 'x3', 'x1']
new accuracy: 0.9
STATUS: IMPROVED

best feature subset ['x1', 'x4', 'z3']

iteration 16
r2<=0.5, delete m features
old feature subset: ['x4', 'z3', 'x2', 'z4', 'z2']
m=2
new feature subset: ['z3', 'x2', 'z2']
list of features unused: ['z1', 'x3', 'x1', 'z4', 'x4']
new accuracy: 0.6733333333333333
p_accept: 0.0228734649112389
random uniform variable: 0.925004225793164
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']
```

```
iteration 17
r2>0.5, len > 1
old feature subset: ['x4', 'z3', 'x2', 'z4', 'z2']
m=2
new feature subset: ['x4', 'z3', 'x2', 'z4', 'z2', 'z1', 'x3']
list of features unused: ['x1']
new accuracy: 0.9066666666666666
STATUS: IMPROVED

best feature subset ['x1', 'x4', 'z3']

iteration 18
r2<=0.5, delete m features
old feature subset: ['x4', 'z3', 'x2', 'z4', 'z2', 'z1', 'x3']
m=2
new feature subset: ['z3', 'x2', 'z4', 'z2', 'z1']
list of features unused: ['x1', 'x3', 'x4']
new accuracy: 0.94
STATUS: IMPROVED

best feature subset ['x1', 'x4', 'z3']

iteration 19
r2>0.5, len > 1
old feature subset: ['z3', 'x2', 'z4', 'z2', 'z1']
m=2
new feature subset: ['z3', 'x2', 'z4', 'z2', 'z1', 'x3', 'x4']
list of features unused: ['x1']
new accuracy: 0.9133333333333333
p_accept: 0.6001124060641452
random uniform variable: 0.4502284648518533
STATUS: ACCEPTED

best feature subset ['x1', 'x4', 'z3']

iteration 20
r2>0.5, len = 1
old feature subset: ['z3', 'x2', 'z4', 'z2', 'z1', 'x3', 'x4']
new feature subset: ['z3', 'x2', 'z4', 'z2', 'z1', 'x3', 'x4', 'x1']
list of features unused: []
new accuracy: 0.9133333333333333
p_accept: 1.0
random uniform variable: 0.37059392067662356
STATUS: ACCEPTED
```

```
best feature subset ['x1', 'x4', 'z3']

iteration 21
old feature subset is full
old feature subset: ['z3', 'x2', 'z4', 'z2', 'z1', 'x3', 'x4', 'x1']
new feature subset: ['x2', 'z4', 'z2', 'z1', 'x3', 'x4', 'x1']
list of features unused ['z3']
new accuracy: 0.9466666666666667
STATUS: IMPROVED
iteration 22
r2>0.5, len = 1
old feature subset: ['x2', 'z4', 'z2', 'z1', 'x3', 'x4', 'x1']
new feature subset: ['x2', 'z4', 'z2', 'z1', 'x3', 'x4', 'x1', 'z3']
list of features unused: []
new accuracy: 0.9133333333333333
p_accept: 0.47738278782472443
random uniform variable: 0.7197654002306135
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 23
r2<=0.5, delete m features
old feature subset: ['x2', 'z4', 'z2', 'z1', 'x3', 'x4', 'x1']
new feature subset: ['x2', 'z4', 'z1', 'x3', 'x4', 'x1']
list of features unused: ['z3', 'z2']
new accuracy: 0.9533333333333334
STATUS: IMPROVED
iteration 24
r2<=0.5, delete m features
old feature subset: ['x2', 'z4', 'z1', 'x3', 'x4', 'x1']
m=2
new feature subset: ['z4', 'z1', 'x3', 'x1']
list of features unused: ['z3', 'z2', 'x2', 'x4']
new accuracy: 0.94
p_accept: 0.7249313475262873
random uniform variable: 0.7353014971076319
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 25
r2<=0.5, delete m features
old feature subset: ['x2', 'z4', 'z1', 'x3', 'x4', 'x1']
```

```
m=2
new feature subset: ['x2', 'z4', 'z1', 'x1']
list of features unused: ['z3', 'z2', 'x4', 'x3']
new accuracy: 0.9066666666666666
p_accept: 0.3088729737397548
random uniform variable: 0.5402200093416144
STATUS: DISCARDED
STATUS: RESTART

best feature subset ['x1', 'x4', 'z3']

iteration 26
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3']
m=2
new feature subset: ['z3']
list of features unused: ['x2', 'z4', 'z2', 'z1', 'x3', 'x4', 'x1']
new accuracy: 0.4266666666666667
p_accept: 1.0043310989908418e-06
random uniform variable: 0.21669336342333834
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 27
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3']
new feature subset: ['x1', 'x4', 'z3', 'x2']
list of features unused: ['z4', 'z2', 'z1', 'x3']
new accuracy: 0.94
p_accept: 0.6951439283988771
random uniform variable: 0.6252059306311687
STATUS: ACCEPTED

best feature subset ['x1', 'x4', 'z3']

iteration 28
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'x2']
new feature subset: ['x1', 'x4', 'z3', 'x2', 'z1']
list of features unused: ['z4', 'z2', 'x3']
new accuracy: 0.9066666666666666
p_accept: 0.38387173389426743
```

```
random uniform variable: 0.0815389604586031
STATUS: ACCEPTED

best feature subset ['x1', 'x4', 'z3']

iteration 29
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'x2', 'z1']
m=2
new feature subset: ['x1', 'z3', 'x2']
list of features unused: ['z4', 'z2', 'x3', 'z1', 'x4']
new accuracy: 0.7933333333333333
p_accept: 0.030197383422318543
random uniform variable: 0.3677068614206387
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 30
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'x2', 'z1']
new feature subset: ['x1', 'x4', 'z3', 'x2', 'z1', 'x3']
list of features unused: ['z4', 'z2']
new accuracy: 0.9
p_accept: 0.8079660052006123
random uniform variable: 0.6111765085614961
STATUS: ACCEPTED

best feature subset ['x1', 'x4', 'z3']

iteration 31
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'x2', 'z1', 'x3']
new feature subset: ['x1', 'x4', 'z3', 'x2', 'z1', 'x3', 'z4']
list of features unused: ['z2']
new accuracy: 0.9
p_accept: 1.0
random uniform variable: 0.8440277231926064
STATUS: ACCEPTED

best feature subset ['x1', 'x4', 'z3']
```

```
iteration 32
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'x2', 'z1', 'x3', 'z4']
new feature subset: ['x1', 'x4', 'z3', 'x2', 'z1', 'z4']
list of features unused: ['z2', 'x3']
new accuracy: 0.92
STATUS: IMPROVED

best feature subset ['x1', 'x4', 'z3']

iteration 33
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'x2', 'z1', 'z4']
new feature subset: ['x1', 'x4', 'z3', 'x2', 'z1']
list of features unused: ['z2', 'x3', 'z4']
new accuracy: 0.9266666666666666
STATUS: IMPROVED

best feature subset ['x1', 'x4', 'z3']

iteration 34
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'x2', 'z1']
new feature subset: ['x1', 'x4', 'z3', 'x2', 'z1', 'x3']
list of features unused: ['z2', 'z4']
new accuracy: 0.92
p_accept: 0.7886678111564865
random uniform variable: 0.9395951987964635
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 35
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'x2', 'z1']
m=2
new feature subset: ['x1', 'x4', 'z3', 'x2', 'z1', 'z2', 'x3']
list of features unused: ['z4']
new accuracy: 0.9133333333333333
p_accept: 0.6131113983216074
random uniform variable: 0.19590418293204526
STATUS: ACCEPTED

best feature subset ['x1', 'x4', 'z3']
```

```
iteration 36
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'x2', 'z1', 'z2', 'x3']
new feature subset: ['x1', 'x4', 'x2', 'z1', 'z2', 'x3']
list of features unused: ['z4', 'z3']
new accuracy: 0.9266666666666666
STATUS: IMPROVED
STATUS: RESTART

best feature subset ['x1', 'x4', 'z3']

iteration 37
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3']
new feature subset: ['x1', 'x4', 'z3', 'z2']
list of features unused: ['x2', 'z4', 'z1', 'x3']
new accuracy: 0.9533333333333334
STATUS: IMPROVED
iteration 38
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'z2']
new feature subset: ['x1', 'x4', 'z3', 'z2', 'x2']
list of features unused: ['z4', 'z1', 'x3']
new accuracy: 0.9333333333333333
p_accept: 0.46014032750638917
random uniform variable: 0.6418577867937625
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 39
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'z2']
m=2
new feature subset: ['x1', 'x4', 'z3', 'z2', 'z1', 'z4']
list of features unused: ['x2', 'x3']
new accuracy: 0.8933333333333333
p_accept: 0.09148242591885443
random uniform variable: 0.1922138386947002
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']
```

```
iteration 40
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'z2']
m=2
new feature subset: ['x1', 'x4', 'z3', 'z2', 'z4', 'x2']
list of features unused: ['z1', 'x3']
new accuracy: 0.88
p_accept: 0.049787068367863875
random uniform variable: 0.6352408242275515
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 41
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'z2']
m=2
new feature subset: ['x4', 'z2']
list of features unused: ['x2', 'z4', 'z1', 'x3', 'z3', 'x1']
new accuracy: 0.9066666666666666
p_accept: 0.14113449781621873
random uniform variable: 0.6946526355850281
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 42
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'z2']
m=2
new feature subset: ['x1', 'x4', 'z3', 'z2', 'z4', 'z1']
list of features unused: ['x2', 'x3']
new accuracy: 0.9266666666666666
p_accept: 0.3176347482160485
random uniform variable: 0.8399789312224749
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']
```

```
iteration 43
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'z2']
m=2
new feature subset: ['x4', 'z2']
list of features unused: ['x2', 'z4', 'z1', 'x3', 'z3', 'x1']
new accuracy: 0.9
p_accept: 0.09540251390683958
random uniform variable: 0.7655734940922259
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 44
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'z2']
new feature subset: ['x1', 'x4', 'z3', 'z2', 'x3']
list of features unused: ['x2', 'z4', 'z1']
new accuracy: 0.92
p_accept: 0.222351347117988
random uniform variable: 0.2956124813275707
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 45
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'z2']
new feature subset: ['x1', 'x4', 'z3', 'z2', 'z4']
list of features unused: ['x2', 'z1', 'x3']
new accuracy: 0.9133333333333333
p_accept: 0.1578430891348514
random uniform variable: 0.39389547805336667
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 46
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'z2']
new feature subset: ['x1', 'x4', 'z3', 'z2', 'z1']
list of features unused: ['x2', 'z4', 'x3']
new accuracy: 0.92
p_accept: 0.20733352024120275
```

```
random uniform variable: 0.4378049373904197
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 47
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'z2']
m=2
new feature subset: ['x1', 'x4', 'z3', 'z2', 'x2', 'z4']
list of features unused: ['z1', 'x3']
new accuracy: 0.9
p_accept: 0.07627373956244153
random uniform variable: 0.38735869702272496
STATUS: DISCARDED
STATUS: RESTART

best feature subset ['x1', 'x4', 'z3']

iteration 48
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3']
new feature subset: ['x4', 'z3']
list of features unused: ['x2', 'z4', 'z2', 'z1', 'x3', 'x1']
new accuracy: 0.94
p_accept: 0.5182266120729474
random uniform variable: 0.8293306267534614
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 49
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3']
new feature subset: ['x1', 'x4']
list of features unused: ['x2', 'z4', 'z2', 'z1', 'x3', 'z3']
new accuracy: 0.94
p_accept: 0.5110291367474694
random uniform variable: 0.7521686061146247
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 50
r2>0.5, len > 1
```

```
old feature subset: ['x1', 'x4', 'z3']
m=2
new feature subset: ['x1', 'x4', 'z3', 'z1', 'x3']
list of features unused: ['x2', 'z4', 'z2']
new accuracy: 0.9066666666666666
p_accept: 0.09084492031319294
random uniform variable: 0.9501102000207008
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 51
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3']
m=2
new feature subset: ['x1', 'x4', 'z3', 'x2', 'z2']
list of features unused: ['z4', 'z1', 'x3']
new accuracy: 0.94
p_accept: 0.49693268769035626
random uniform variable: 0.20711678341654172
STATUS: ACCEPTED

best feature subset ['x1', 'x4', 'z3']

iteration 52
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'x2', 'z2']
new feature subset: ['x1', 'x4', 'x2', 'z2']
list of features unused: ['z4', 'z1', 'x3', 'z3']
new accuracy: 0.9133333333333333
p_accept: 0.23532011256478103
random uniform variable: 0.6427653229441521
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 53
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'x2', 'z2']
new feature subset: ['x1', 'x4', 'z3', 'x2']
list of features unused: ['z4', 'z1', 'x3', 'z2']
new accuracy: 0.94
p_accept: 1.0
random uniform variable: 0.7036764436186771
STATUS: ACCEPTED
```

```
best feature subset ['x1', 'x4', 'z3']

iteration 54
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'x2']
m=2
new feature subset: ['x1', 'x4', 'z3', 'x2', 'z2', 'z1']
list of features unused: ['z4', 'x3']
new accuracy: 0.9133333333333333
p_accept: 0.22234031969977877
random uniform variable: 0.6274624885792134
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 55
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'x2']
new feature subset: ['x1', 'x4', 'z3', 'x2', 'z2']
list of features unused: ['z4', 'z1', 'x3']
new accuracy: 0.9466666666666667
STATUS: IMPROVED
iteration 56
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'x2', 'z2']
new feature subset: ['x4', 'z3', 'x2', 'z2']
list of features unused: ['z4', 'z1', 'x3', 'x1']
new accuracy: 0.9066666666666666
p_accept: 0.09788679099687098
random uniform variable: 0.878580510253585
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 57
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'x2', 'z2']
m=2
new feature subset: ['x4', 'x2', 'z2']
list of features unused: ['z4', 'z1', 'x3', 'x1', 'z3']
new accuracy: 0.9133333333333333
p_accept: 0.13920174629810625
random uniform variable: 0.1608953315667292
STATUS: DISCARDED
```

```
best feature subset ['x1', 'x4', 'z3']

iteration 58
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'x2', 'z2']
new feature subset: ['x1', 'x4', 'z3', 'x2', 'z2', 'z4']
list of features unused: ['z1', 'x3']
new accuracy: 0.88
p_accept: 0.018059480312033187
random uniform variable: 0.7980603775726148
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 59
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'x2', 'z2']
new feature subset: ['x1', 'x4', 'z3', 'x2']
list of features unused: ['z4', 'z1', 'x3', 'z2']
new accuracy: 0.9333333333333333
p_accept: 0.4417984888457499
random uniform variable: 0.31658098135378276
STATUS: ACCEPTED

best feature subset ['x1', 'x4', 'z3']

iteration 60
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'x2']
m=2
new feature subset: ['x1', 'x2']
list of features unused: ['z4', 'z1', 'x3', 'z2', 'x4', 'z3']
new accuracy: 0.68
p_accept: 1.1093895806014166e-07
random uniform variable: 0.37411142748967574
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 61
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'x2']
m=2
new feature subset: ['x1', 'x4', 'z3', 'x2', 'z1', 'z2']
```

```
list of features unused: ['z4', 'x3']
new accuracy: 0.9133333333333333
p_accept: 0.2764530466295641
random uniform variable: 0.8243543950315364
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 62
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'x2']
new feature subset: ['x1', 'x4', 'x2']
list of features unused: ['z4', 'z1', 'x3', 'z2', 'z3']
new accuracy: 0.9333333333333333
p_accept: 1.0
random uniform variable: 0.0439406252435357
STATUS: ACCEPTED
STATUS: RESTART

best feature subset ['x1', 'x4', 'z3']

iteration 63
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3']
m=2
new feature subset: ['x1', 'x4', 'z3', 'z4', 'x2']
list of features unused: ['z2', 'z1', 'x3']
new accuracy: 0.94
STATUS: IMPROVED

best feature subset ['x1', 'x4', 'z3']

iteration 64
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'z4', 'x2']
new feature subset: ['x1', 'x4', 'z3', 'x2']
list of features unused: ['z2', 'z1', 'x3', 'z4']
new accuracy: 0.9333333333333333
p_accept: 0.6396663858557825
random uniform variable: 0.8728945755817111
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 65
```

```
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'z4', 'x2']
new feature subset: ['x1', 'x4', 'z4', 'x2']
list of features unused: ['z2', 'z1', 'x3', 'z3']
new accuracy: 0.9333333333333333
p_accept: 0.6351457942366053
random uniform variable: 0.8153017037467959
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 66
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'z4', 'x2']
m=2
new feature subset: ['x1', 'x4', 'z3', 'z4', 'x2', 'x3', 'z2']
list of features unused: ['z1']
new accuracy: 0.92
p_accept: 0.2508302851306157
random uniform variable: 0.9322729511453477
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 67
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'z4', 'x2']
new feature subset: ['x1', 'x4', 'z3', 'z4', 'x2', 'z1']
list of features unused: ['z2', 'x3']
new accuracy: 0.8933333333333333
p_accept: 0.0377565712842638
random uniform variable: 0.3259456034473457
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 68
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'z4', 'x2']
m=2
new feature subset: ['x4', 'z4', 'x2']
list of features unused: ['z2', 'z1', 'x3', 'x1', 'z3']
new accuracy: 0.88
```

```
p_accept: 0.013889866344604719
random uniform variable: 0.34300960263293234
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 69
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'z4', 'x2']
new feature subset: ['x1', 'x4', 'z3', 'z4', 'x2', 'z1']
list of features unused: ['z2', 'x3']
new accuracy: 0.9133333333333333
p_accept: 0.14528208477493296
random uniform variable: 0.9799521696408704
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 70
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'z4', 'x2']
m=2
new feature subset: ['x1', 'z3', 'z4']
list of features unused: ['z2', 'z1', 'x3', 'x4', 'x2']
new accuracy: 0.7066666666666667
p_accept: 3.6437784154128003e-08
random uniform variable: 0.65334797595649
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 71
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'z4', 'x2']
m=2
new feature subset: ['x1', 'x4', 'z3', 'z4', 'x2', 'z1', 'z2']
list of features unused: ['x3']

new accuracy: 0.9133333333333333
p_accept: 0.13726861177926966
random uniform variable: 0.7711913866707524
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']
```

```
iteration 72
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'z4', 'x2']
new feature subset: ['x1', 'x4', 'z3', 'z4', 'x2', 'z1']
list of features unused: ['z2', 'x3']
new accuracy: 0.92
p_accept: 0.22076901658292877
random uniform variable: 0.8784772270589861
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 73
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3', 'z4', 'x2']
m=2
new feature subset: ['x1', 'x4', 'z3', 'z4', 'x2', 'x3', 'z1']
list of features unused: ['z2']
new accuracy: 0.9066666666666666
p_accept: 0.07783286642654542
random uniform variable: 0.7526812522905665
STATUS: DISCARDED
STATUS: RESTART

best feature subset ['x1', 'x4', 'z3']

iteration 74
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3']
m=2
new feature subset: ['x1', 'x4', 'z3', 'z2', 'x2']
list of features unused: ['z4', 'z1', 'x3']
new accuracy: 0.9466666666666667
STATUS: IMPROVED
iteration 75
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3', 'z2', 'x2']
m=2
new feature subset: ['x4', 'z3', 'x2']
list of features unused: ['z4', 'z1', 'x3', 'z2', 'x1']
new accuracy: 0.9333333333333333
p_accept: 0.35265906117645907
random uniform variable: 0.22492224164658603
STATUS: ACCEPTED
```

```
best feature subset ['x1', 'x4', 'z3']

iteration 76
r2<=0.5, delete m features
old feature subset: ['x4', 'z3', 'x2']
m=2
new feature subset: ['z3']
list of features unused: ['z4', 'z1', 'x3', 'z2', 'x1', 'x2', 'x4']
new accuracy: 0.4266666666666667
p_accept: 2.0797463925213007e-18
random uniform variable: 0.6910663492627103
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 77
r2<=0.5, delete m features
old feature subset: ['x4', 'z3', 'x2']
m=2
new feature subset: ['z3']
list of features unused: ['z4', 'z1', 'x3', 'z2', 'x1', 'x2', 'x4']
new accuracy: 0.4266666666666667
p_accept: 1.2085107503666009e-18
random uniform variable: 0.8124323975794677
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 78
r2>0.5, len > 1
old feature subset: ['x4', 'z3', 'x2']
new feature subset: ['x4', 'z3', 'x2', 'z1']
list of features unused: ['z4', 'x3', 'z2', 'x1']
new accuracy: 0.9266666666666666
p_accept: 0.5769498103804847
random uniform variable: 0.823298570166372
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 79
r2<=0.5, delete m features
old feature subset: ['x4', 'z3', 'x2']
m=2
```

```
new feature subset: ['z3']
list of features unused: ['z4', 'z1', 'x3', 'z2', 'x1', 'x2', 'x4']
new accuracy: 0.4266666666666667
p_accept: 4.0806636072653414e-19
random uniform variable: 0.28422929533648866
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 80
r2<=0.5, delete m features
old feature subset: ['x4', 'z3', 'x2']
m=2
new feature subset: ['x2']
list of features unused: ['z4', 'z1', 'x3', 'z2', 'x1', 'z3', 'x4']
new accuracy: 0.49333333333333335
p_accept: 6.693182279129594e-17
random uniform variable: 0.8846151771070437
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 81
r2>0.5, len > 1
old feature subset: ['x4', 'z3', 'x2']
m=2
new feature subset: ['x4', 'z3', 'x2', 'z2', 'x1']
list of features unused: ['z4', 'z1', 'x3']
new accuracy: 0.9533333333333334
STATUS: IMPROVED
iteration 82
r2<=0.5, delete m features
old feature subset: ['x4', 'z3', 'x2', 'z2', 'x1']
m=2
new feature subset: ['z3', 'x2', 'x1']
list of features unused: ['z4', 'z1', 'x3', 'z2', 'x4']
new accuracy: 0.7866666666666666
p_accept: 7.079876684561684e-07
random uniform variable: 0.03648954388872816
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 83
```

```
r2<=0.5, delete m features
old feature subset: ['x4', 'z3', 'x2', 'z2', 'x1']
new feature subset: ['x4', 'z3', 'x2', 'z2']
list of features unused: ['z4', 'z1', 'x3', 'x1']
new accuracy: 0.94
p_accept: 0.3176347482160469
random uniform variable: 0.17489884715783732
STATUS: ACCEPTED

best feature subset ['x1', 'x4', 'z3']

iteration 84
r2<=0.5, delete m features
old feature subset: ['x4', 'z3', 'x2', 'z2']
new feature subset: ['x4', 'x2', 'z2']
list of features unused: ['z4', 'z1', 'x3', 'x1', 'z3']
new accuracy: 0.9133333333333333
p_accept: 0.09493052895242286
random uniform variable: 0.7472477282270467
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 85
r2<=0.5, delete m features
old feature subset: ['x4', 'z3', 'x2', 'z2']
new feature subset: ['z3', 'x2', 'z2']
list of features unused: ['z4', 'z1', 'x3', 'x1', 'x4']
new accuracy: 0.6133333333333333
p_accept: 2.1003769890655108e-13
random uniform variable: 0.30009072659322156
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 86
r2>0.5, len > 1
old feature subset: ['x4', 'z3', 'x2', 'z2']
m=2
new feature subset: ['x4', 'z3', 'x2', 'z2', 'x1', 'x3']
list of features unused: ['z4', 'z1']
new accuracy: 0.9066666666666666
p_accept: 0.04908585372685368
random uniform variable: 0.6341051463468379
```

```
STATUS: DISCARDED
STATUS: RESTART

best feature subset ['x1', 'x4', 'z3']

iteration 87
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3']
m=2
new feature subset: ['x1', 'x4', 'z3', 'z2', 'x3']
list of features unused: ['x2', 'z4', 'z1']
new accuracy: 0.92
p_accept: 0.16044770195267596
random uniform variable: 0.7411686158228301
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 88
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3']
new feature subset: ['x1', 'z3']
list of features unused: ['x2', 'z4', 'z2', 'z1', 'x3', 'x4']
new accuracy: 0.7533333333333333
p_accept: 3.139567335774638e-08
random uniform variable: 0.3805709611841751
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 89
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3']
m=2
new feature subset: ['x1', 'x4', 'z3', 'x2', 'z1']
list of features unused: ['z4', 'z2', 'x3']
new accuracy: 0.9066666666666666
p_accept: 0.04413212181320652
random uniform variable: 0.7581652995439998
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 90
r2>0.5, len > 1
```

```
old feature subset: ['x1', 'x4', 'z3']
m=2
new feature subset: ['x1', 'x4', 'z3', 'x2', 'x3']
list of features unused: ['z4', 'z2', 'z1']
new accuracy: 0.9066666666666666
p_accept: 0.04259457552986364
random uniform variable: 0.4949094719057072
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 91
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3']
new feature subset: ['x1', 'x4', 'z3', 'z1']
list of features unused: ['x2', 'z4', 'z2', 'x3']
new accuracy: 0.9066666666666666
p_accept: 0.04111059677231133
random uniform variable: 0.07400268502417462
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 92
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3']
m=2
new feature subset: ['x1']
list of features unused: ['x2', 'z4', 'z2', 'z1', 'x3', 'z3', 'x4']
new accuracy: 0.6466666666666666
p_accept: 4.648028207894052e-13
random uniform variable: 0.37946392090447933
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 93
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3']
m=2
new feature subset: ['x1', 'x4', 'z3', 'x3', 'z2']
list of features unused: ['x2', 'z4', 'z1']
new accuracy: 0.9266666666666666
p_accept: 0.27118215126344186
random uniform variable: 0.6855327120469882
```

```
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 94
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3']
new feature subset: ['x1', 'z3']
list of features unused: ['x2', 'z4', 'z2', 'z1', 'x3', 'x4']
new accuracy: 0.7333333333333333
p_accept: 1.3184506883588194e-09
random uniform variable: 0.0021642507802691613
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 95
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3']
m=2
new feature subset: ['x1']
list of features unused: ['x2', 'z4', 'z2', 'z1', 'x3', 'z3', 'x4']
new accuracy: 0.6466666666666666
p_accept: 1.8226160799765082e-13
random uniform variable: 0.5116158549132208
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 96
r2>0.5, len > 1
old feature subset: ['x1', 'x4', 'z3']
m=2
new feature subset: ['x1', 'x4', 'z3', 'z4', 'x2']
list of features unused: ['z2', 'z1', 'x3']
new accuracy: 0.8866666666666667
p_accept: 0.004561649802999859
random uniform variable: 0.6049083643470211
STATUS: DISCARDED
STATUS: RESTART

best feature subset ['x1', 'x4', 'z3']

iteration 97
r2>0.5, len > 1
```

```
old feature subset: ['x1', 'x4', 'z3']
m=2
new feature subset: ['x1', 'x4', 'z3', 'x2', 'z1']
list of features unused: ['z4', 'z2', 'x3']
new accuracy: 0.9066666666666666
p_accept: 0.03323155777473037
random uniform variable: 0.16736197714299128
STATUS: DISCARDED

best feature subset ['x1', 'x4', 'z3']

iteration 98
r2<=0.5, delete m features
old feature subset: ['x1', 'x4', 'z3']
m=2
new feature subset: ['x4']
list of features unused: ['x2', 'z4', 'z2', 'z1', 'x3', 'z3', 'x1']
new accuracy: 0.9533333333333334
STATUS: IMPROVED
same as best accuracy, but feature list is smaller than that of the current subset. update best feature subset.
new acc 0.9533333333333334
best accuracy 0.94

best feature subset ['x4']

iteration 99
r2>0.5, len > 1
old feature subset: ['x4']
m=2
new feature subset: ['x4', 'x2', 'x3']
list of features unused: ['z4', 'z2', 'z1', 'z3', 'x1']
new accuracy: 0.9466666666666667
p_accept: 0.503931624738915
random uniform variable: 0.44037256892045007
STATUS: ACCEPTED

best feature subset ['x4']

iteration 100
r2>0.5, len > 1
old feature subset: ['x4', 'x2', 'x3']
m=2
new feature subset: ['x4', 'x2', 'x3', 'z4', 'z3']
list of features unused: ['z2', 'z1', 'x1']

new accuracy: 0.92
p_accept: 0.06149912115919299
random uniform variable: 0.6587398311480941
STATUS: DISCARDED

best feature subset ['x4']


first accuracy: 0.9133333333333333
best accuracy: 0.9533333333333334
best feature set: ['x4']

note: did not re-run classification model for this best subset, as the result is not consistent by nature of the de
cisiontree variability (decisiontree models may not converge on an optimum decision tree for every iteration!
```

```
Part Four

Generation 1

Individual 1 ['z1', 'sepal-length', 'sepal-width', 'petal-length', 'petal-width', 'z2']
Accuracy: 0.940
Individual 2 ['z1', 'z2', 'z3', 'z4']
Accuracy: 0.940
Individual 3 ['z1', 'sepal-length', 'sepal-width', 'petal-length', 'petal-width', 'z4']
Accuracy: 0.947
Individual 4 ['z1', 'z2', 'sepal-width', 'petal-width']
Accuracy: 0.947
Individual 5 ['z1', 'sepal-width', 'petal-length', 'petal-width']
Accuracy: 0.953

Generation 2

Individual 1 ['z1', 'z2', 'sepal-width', 'petal-width']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-length', 'sepal-width', 'petal-length', 'petal-width', 'z2', 'z4']
Accuracy: 0.947
Individual 3 ['z1', 'sepal-width', 'petal-length', 'petal-width']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-length', 'petal-width', 'z4']
Accuracy: 0.953

Generation 3

Individual 1 ['z1', 'sepal-width', 'petal-length', 'petal-width', 'z4']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-length', 'petal-width', 'z4', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z2']
Accuracy: 0.953

Generation 4
```

```
Individual 1 ['z1', 'sepal-width', 'petal-length', 'petal-width', 'z4']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'petal-length', 'z4', 'sepal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4']
Accuracy: 0.953

Generation 5

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953

Generation 6

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length']
Accuracy: 0.953

Generation 7

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length']
```

```
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length', 'z2']
Accuracy: 0.953

Generation 8

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length', 'z2']
Accuracy: 0.960
best overall_accuracy 0.96
best overall individual ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length', 'z2']

Generation 9

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953

Generation 10

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'sepal-length']
Accuracy: 0.953
```

```
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length']
Accuracy: 0.953

Generation 11

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'sepal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'sepal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length']
Accuracy: 0.953

Generation 12

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'sepal-length', 'petal-length', 'z2']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length', 'sepal-length', 'z2']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'sepal-length', 'petal-length']
Accuracy: 0.953

Generation 13

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'sepal-length', 'petal-length', 'z2']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'sepal-length', 'z2']
Accuracy: 0.960

Generation 14

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
```

```
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'sepal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'sepal-length', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.960

Generation 15

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953

Generation 16

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.960

Generation 17

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'sepal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
```

```
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953

Generation 18

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'sepal-length', 'petal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.960
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.960

Generation 19

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'sepal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'sepal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953


Generation 20

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'sepal-length', 'petal-length']
Accuracy: 0.947
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'sepal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953

Generation 21
```

```
Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'sepal-length']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'sepal-length', 'petal-length']
Accuracy: 0.960

Generation 22

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'sepal-length']
Accuracy: 0.960

Generation 23

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.947
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'sepal-length']
Accuracy: 0.947
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953

Generation 24

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.947
```

```
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'sepal-length']
Accuracy: 0.947
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.947

Generation 25

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'sepal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'sepal-length']
Accuracy: 0.953

Generation 26

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.947
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2']
Accuracy: 0.953

Generation 27

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953

Generation 28
```

```
Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.960

Generation 29

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953

Generation 30

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.947
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953

Generation 31

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
```

```
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953

Generation 32

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953

Generation 33

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.947
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953

Generation 34

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953

Generation 35
```

```
Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.960

Generation 36

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953


Generation 37

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953

Generation 38

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
```

```
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953

Generation 39

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.947
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953

Generation 40

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.947
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953

Generation 41

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
```

```
Generation 42

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953

Generation 43

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.960

Generation 44

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.940
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.940
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953

Generation 45

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953
```

```
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.960

Generation 46

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.933
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.933
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.953

Generation 47

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length']
Accuracy: 0.960

Generation 48

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953

Generation 49

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.953

Generation 50

Individual 1 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.933
Individual 2 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.933
Individual 3 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.940
Individual 4 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947
Individual 5 ['z1', 'sepal-width', 'petal-width', 'z4', 'z2', 'petal-length', 'sepal-length']
Accuracy: 0.947

After 50 generations,
Best feature set: ['z1', 'sepal-width', 'petal-width', 'z4', 'petal-length', 'z2']
Best accuracy: 0.96
```