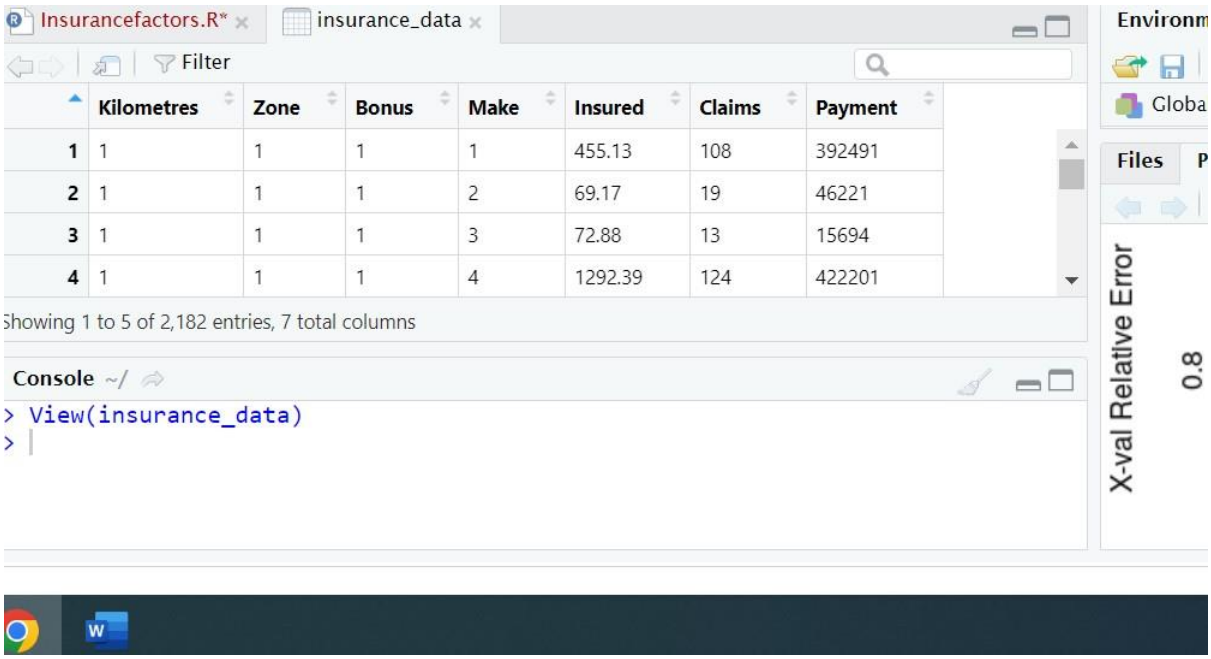
Insurance factors identification.

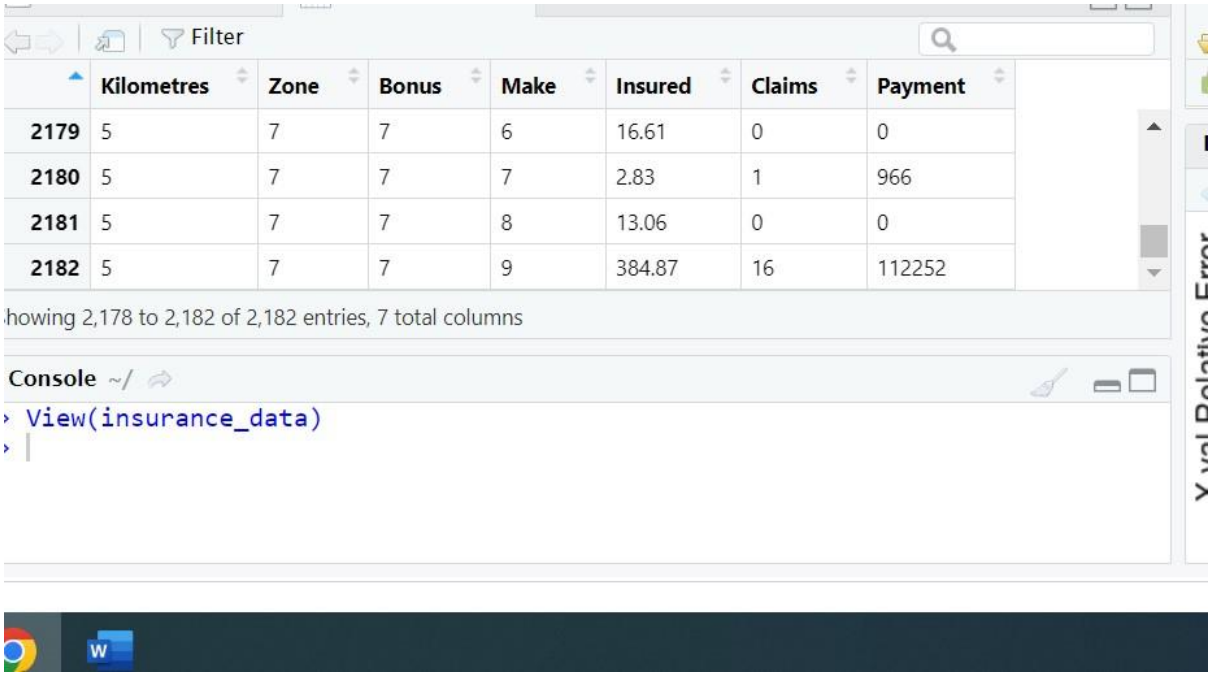
Q1) The committee is interested to know each field of the data collected through descriptive analysis to gain basic insights into the data set and to prepare for further analysis.

Ans) For descriptive analysis to gain insights into the data set,the summary function on the insurance dataset will be helpful for further analysis. Below attached is the code in R which gives an overview of the descriptive analysis

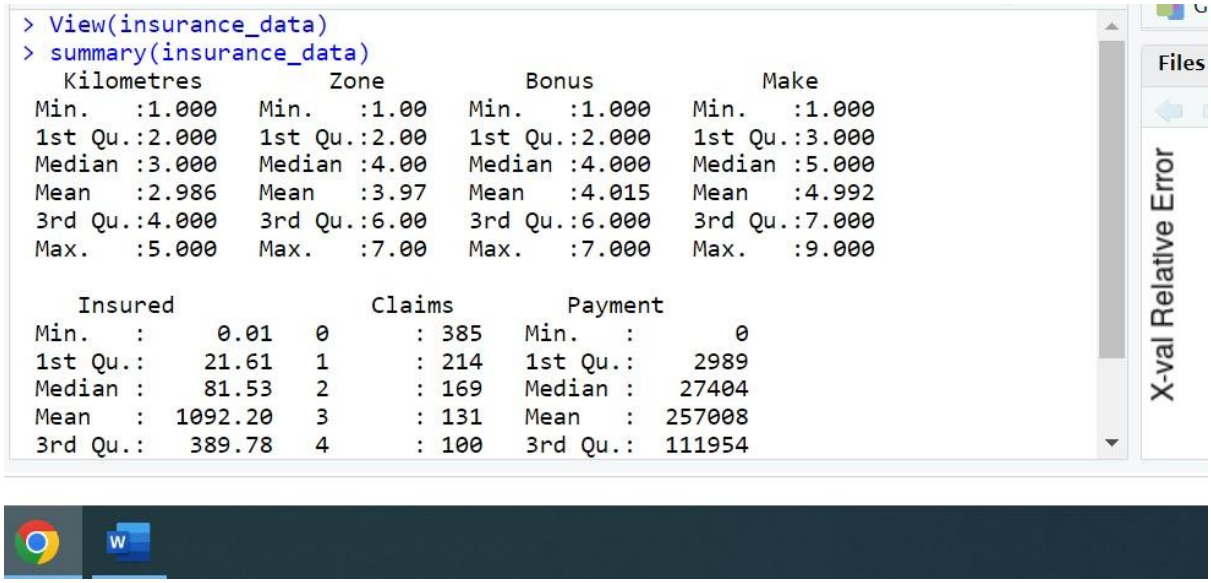
```
print("Insurance Factors Identification")

insurance_data<-
read.csv("https://raw.githubusercontent.com/shivanipriya89/Insurance/main/Insurance.csv")

print(insurance_data)

View(insurance_data)

str(insurance_data)

summary(insurance_data)
```

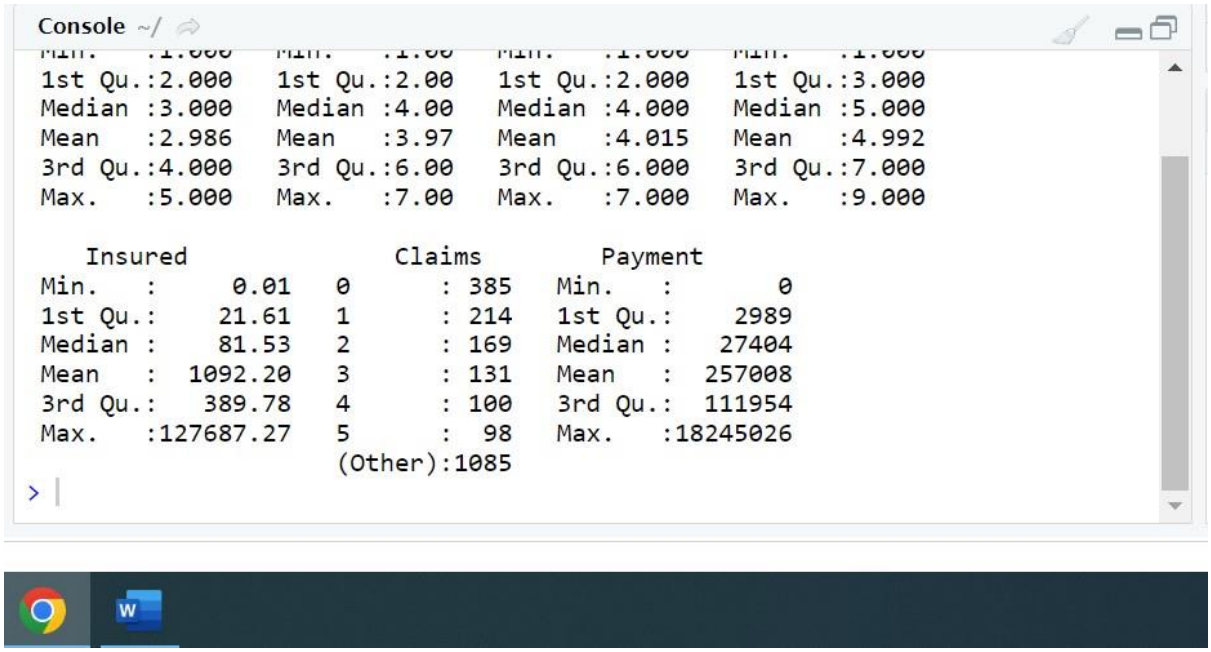
Here,are the screenshots of the descriptive analysis of data





The table of insurance factors identification has 2,182 entries of 7 columns





The above attached are the summary of insurance dataset which has minimum, maximum,1st Quantile,Median and Mean values of all 7 columns of insurancedataset.

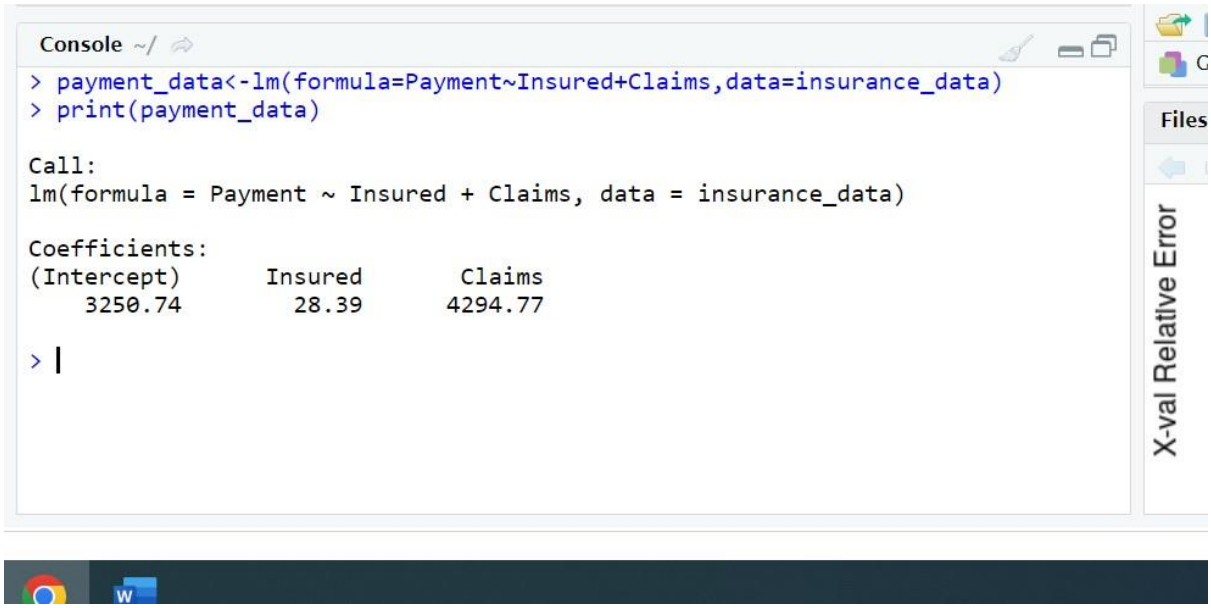
Q2) The total value of payment by an insurance company is an important factor to be monitored. So the committee has decided to find whether this payment is related to the number of claims and the number of insured policy years. They also want to visualize the results for better understanding.

Ans) For the analysis of payment wrt number of claims and the number of insured policy years,the concept of Simple Linear Regression with multiple variables can be used for determining the relationship. Below mention is the code in R

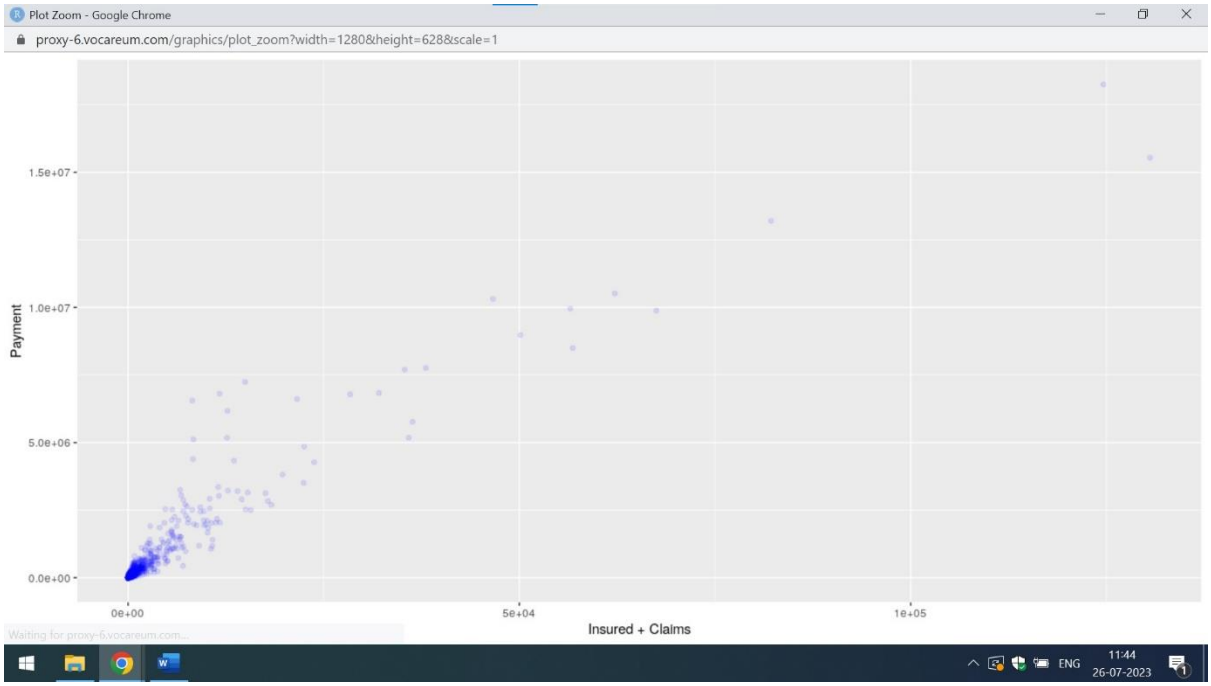
```
print("Insurance Factors Identification")

insurance_data<-
read.csv("https://raw.githubusercontent.com/shivanipriya89/Insurance/main/Insurance.csv")

print(insurance_data)

payment_data<-lm(formula=Payment~Insured+Claims,data=insurance_data)

print(payment_data)


myinsureddata<-ggplot(data=insurance_data,mapping=aes(x=Insured+Claims,y=Payment))
+geom_point(alpha=0.1,color="blue")
```

myinsureddata

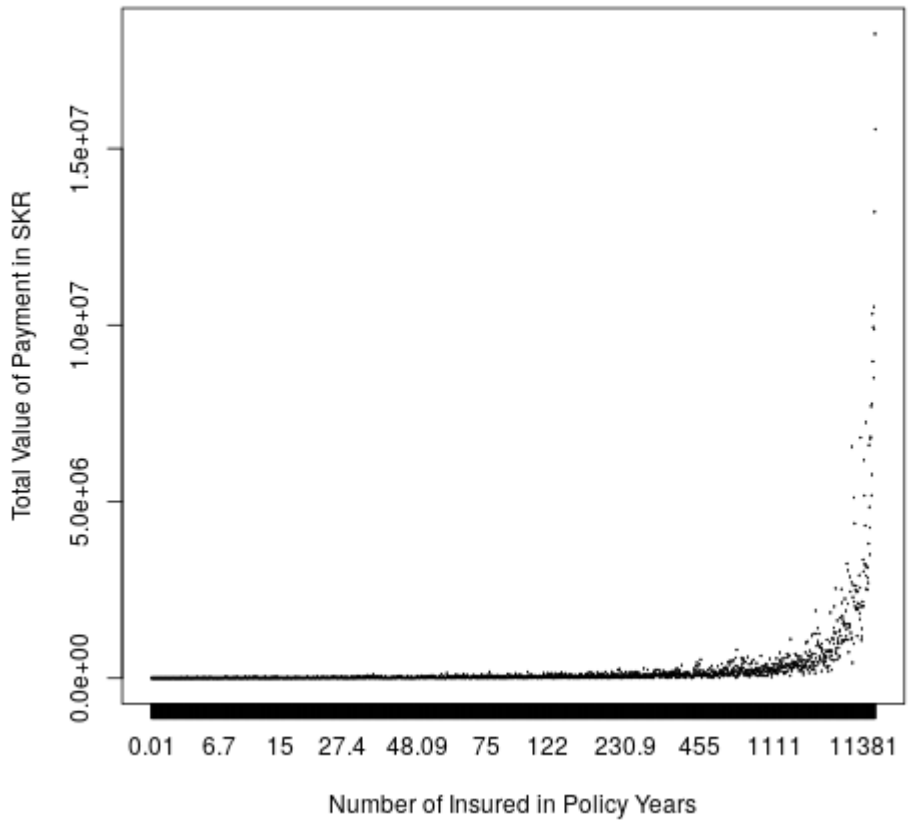
```
png(file="Insured.png")

boxplot(Payment~Insured,data=insurance_data,xlab="Number of Insured in Policy Years",ylab="Total Value of Payment in SKR")

dev.off()
```



By applying the formula of Insured+Claims on Payment, it is clear that there is a positive Linear Regression between Payment wrt Insured and Claims as the value of both y and x intercepts are positive. Hence, payment is related to the number of claims and the number of insured policy years.



It is even cleared from the above attached ggplot view that there is a positive Linear Regression between Insured+Claims and Payment.



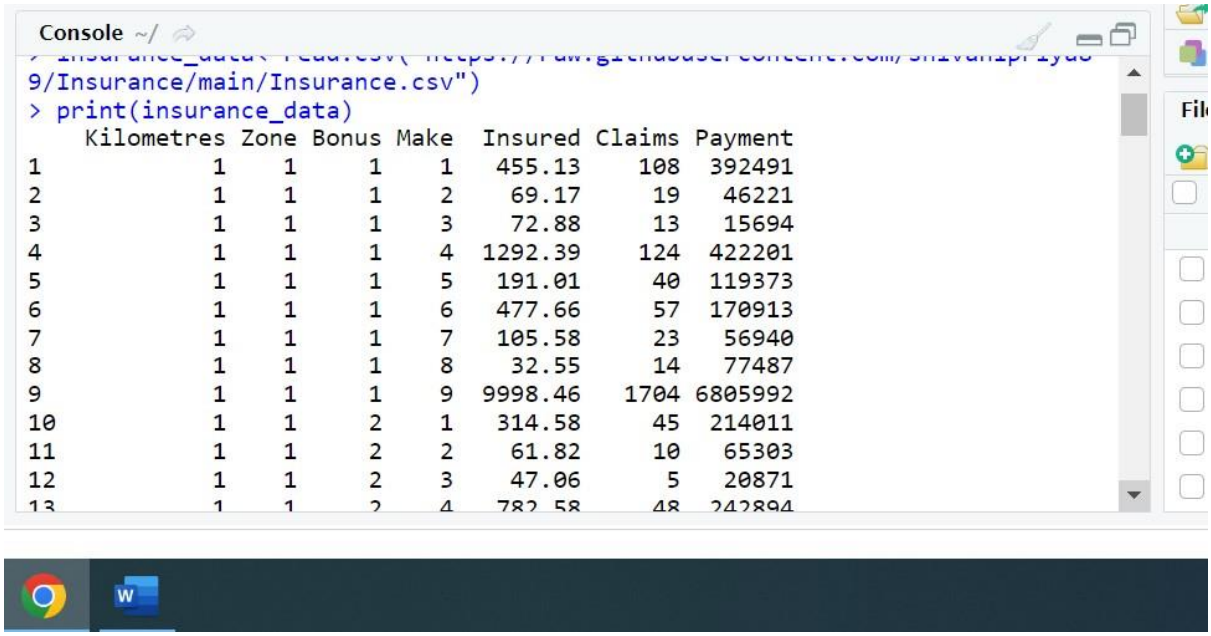
The above attached is the boxplot view of Number of Insured in Policy Years wrt Total Value in Payment. The total value of payment is increasing after 455 number of Insured in Policy Years

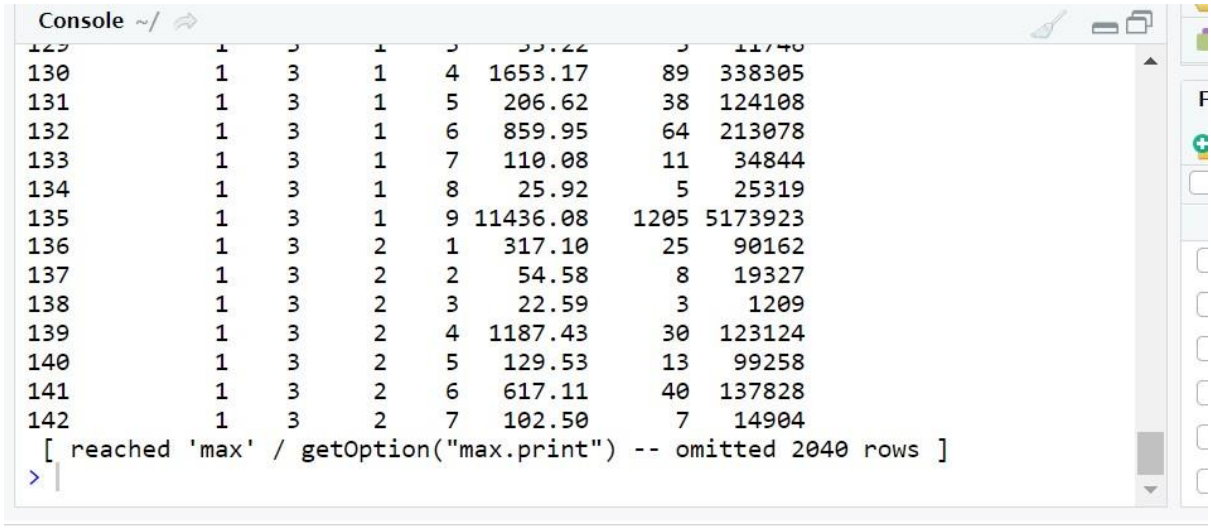
Q3) The committee wants to figure out the reasons for insurance payment increase and decrease. So they have decided to find whether distance, location, bonus, make, and insured amount or claims are affecting the payment or all or some of these are affecting it.

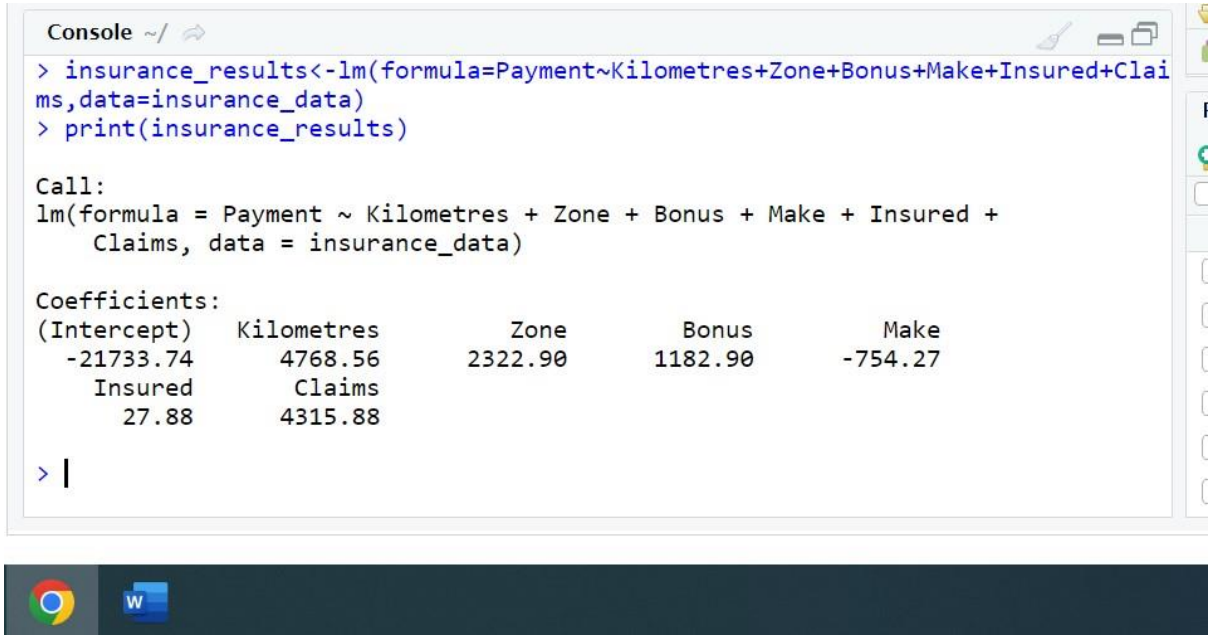
Ans) For analysing the reasons for insurance payment increase and decrease,I am using the concept of Simple Linear Regression with multiple variables. Below attached is the code in R

```
print("Insurance Factors Identification")

insurance_data<-
read.csv("https://raw.githubusercontent.com/shivanipriya89/Insurance/main/Insurance.csv")

print(insurance_data)

insurance_results<-
lm(formula=Payment~Kilometres+Zone+Bonus+Make+Insured+Claims,data=insurance_dat
a)

print(insurance_results)

summary(insurance_results)
```

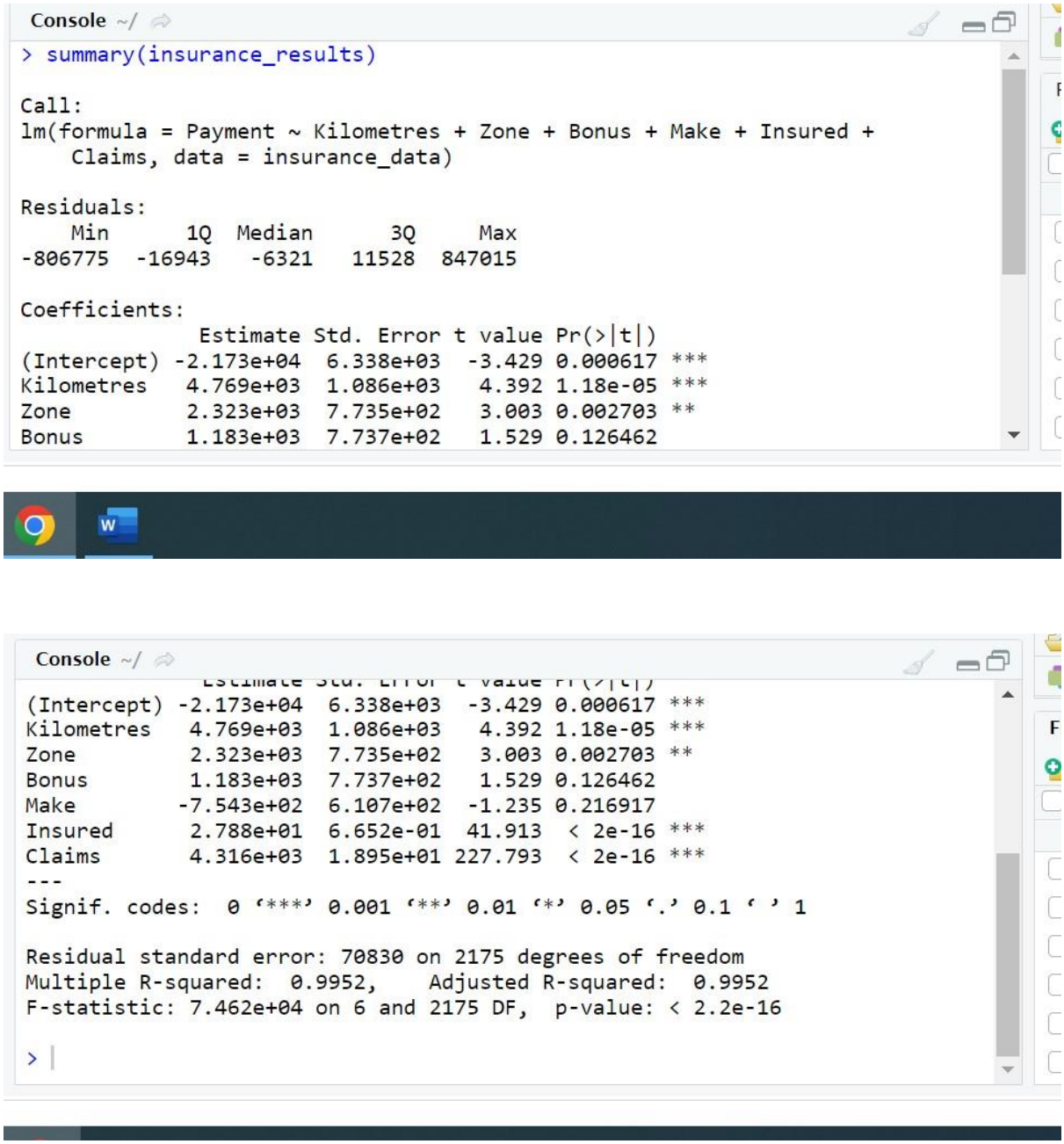
Below attached are the screenshots







From the above mention screenshot,it is clear that Kilometres which is distance,Zone ie Location,Bonus ie No claims bonus; equal to the number of years, plus one, since the last claim,Insured ie The number of insured in policy-years and Claims are the major factors affecting the payment. Make ie 8 different common car models have no impact on payment



It is even clear from the summary of the insurance factors identification dataset ie make has no impact on Payment while zone,bonus,insured and claims have positive impact

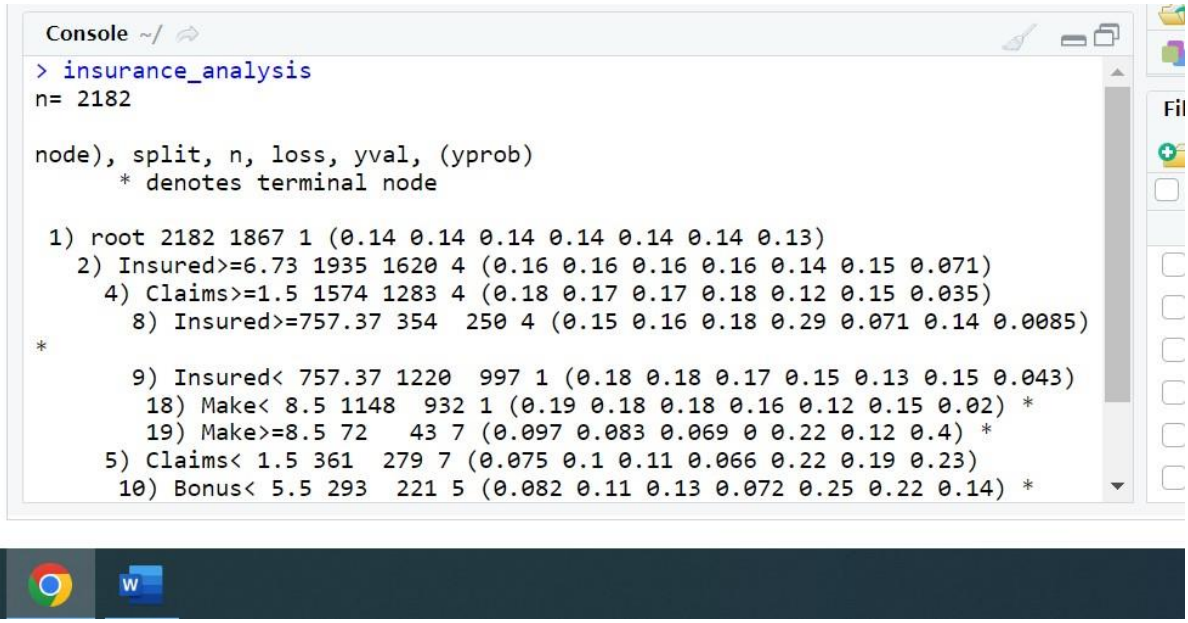
Q4) The insurance company is planning to establish a new branch office, so they are interested to find at what location, kilometre, and bonus level their insured amount, claims, and payment gets increased. (Hint: Aggregate Dataset)

Ans) By using the concept of Decision Tree Algorithm, one can analyze the various factors affecting the payment. Below attached is the code in R

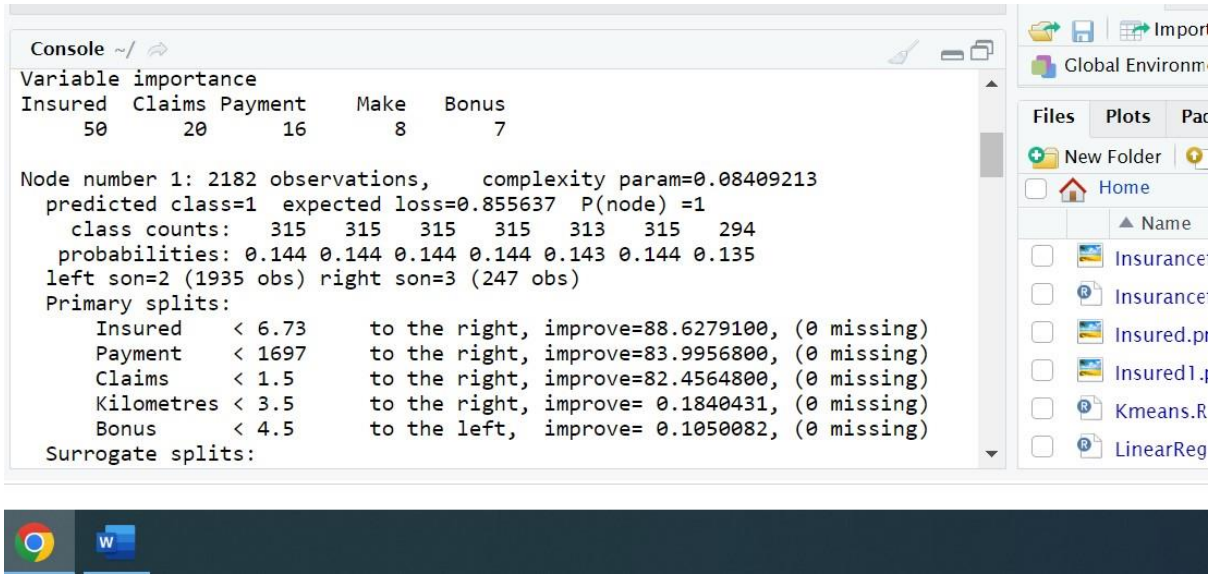
print("Insurance Factors Identification")

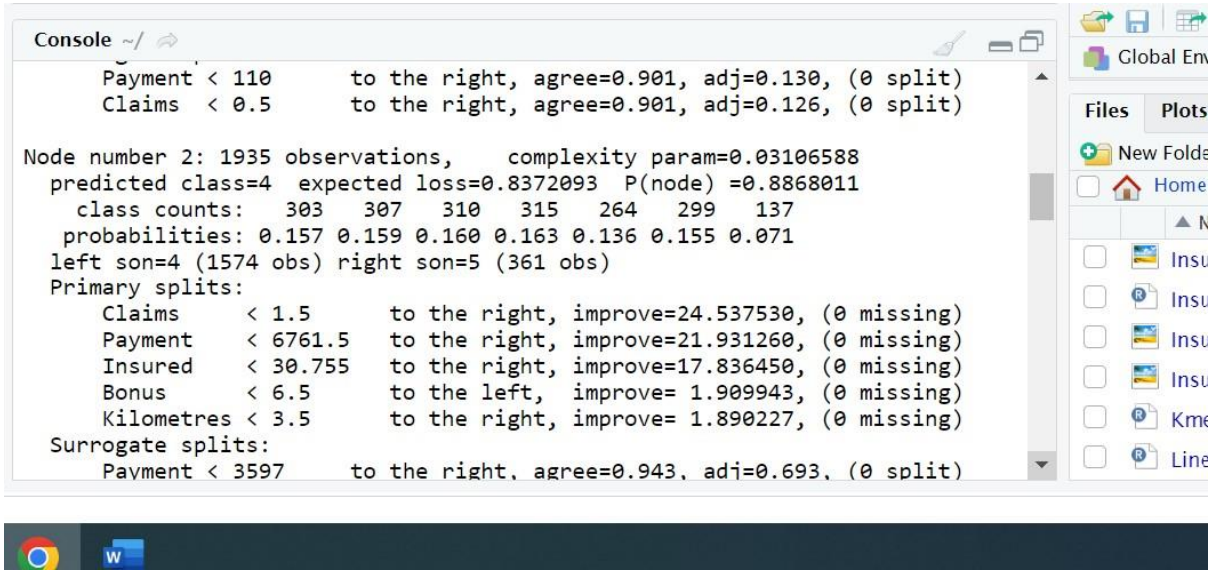
```
insurance_data<-
read.csv("https://raw.githubusercontent.com/shivanipriya89/Insurance/main/Insurance.csv")

print(insurance_data)


# Convert zone to factor

insurance_data$Zone<-sapply(insurance_data$Zone,factor)

str(insurance_data)

# Building the model

insurance_analysis<-rpart(Zone~.,data=insurance_data,method="class")

insurance_analysis


summary(insurance_analysis)

printcp(insurance_analysis)

plotcp(insurance_analysis)
```

Below attached are the screenshots



From the above mention screenshot,it is clear that there are total 2182 variables of the dataset which has splitends ,loss ,yval abd prob of the datset.





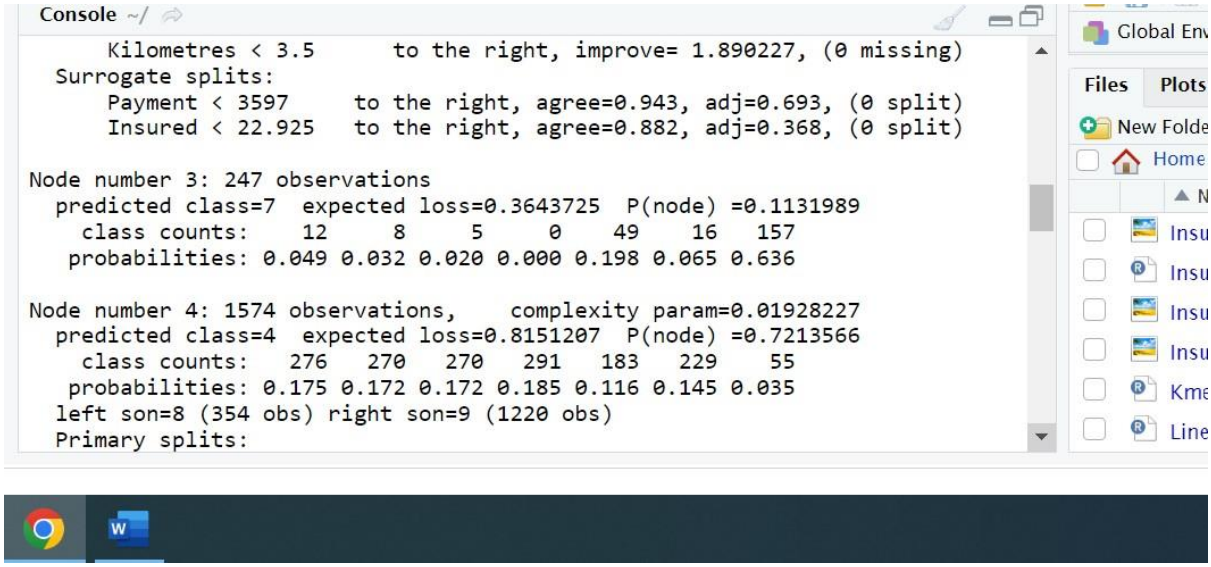
From the above attached screenshots,it is clear that Insured and claims are the most important factors in decision analysis

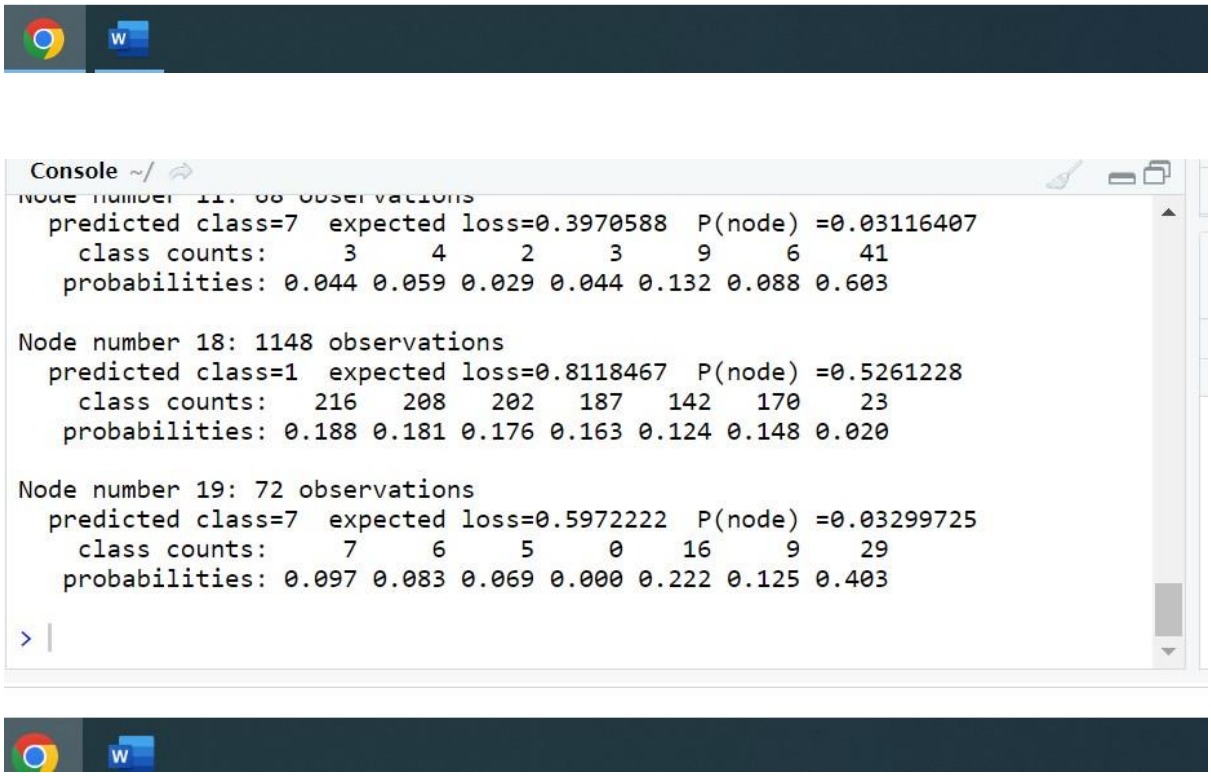
The actual output of the insurance factors identification are mention below:

```
> summary(insurance_analysis)
Call:
rpart(formula = Zone ~ ., data = insurance_data, method = "class")
  n= 2182

          CP nsplit rel error    xerror        xstd
1 0.08409213      0 1.0000000 1.0374933 0.007899074
2 0.03106588      1 0.9159079 0.9335833 0.010030192
3 0.01928227      2 0.8848420 0.8976968 0.010559432
4 0.01660418      3 0.8655597 0.8891269 0.010673764
5 0.01178361      4 0.8489555 0.8714515 0.010896037
6 0.01000000      5 0.8371719 0.8510980 0.011130575
```

```
Variable importance
Insured  Claims Payment    Make   Bonus
     50      20      16       8       7

Node number 1: 2182 observations,    complexity param=0.08409213
  predicted class=1  expected loss=0.855637  P(node) =1
    class counts:   315   315   315   315   313   315   294
   probabilities: 0.144 0.144 0.144 0.144 0.143 0.144 0.135
  left son=2 (1935 obs) right son=3 (247 obs)
  Primary splits:
      Insured    < 6.73     to the right, improve=88.6279100, (0 missing)
      Payment    < 1697     to the right, improve=83.9956800, (0 missing)
      Claims     < 1.5      to the right, improve=82.4564800, (0 missing)
      Kilometres < 3.5      to the right, improve= 0.1840431, (0 missing)
      Bonus      < 4.5      to the left,  improve= 0.1050082, (0 missing)
  Surrogate splits:
      Payment < 110      to the right, agree=0.901, adj=0.130, (0 split)
      Claims  < 0.5      to the right, agree=0.901, adj=0.126, (0 split)

Node number 2: 1935 observations,    complexity param=0.03106588
  predicted class=4  expected loss=0.8372093  P(node) =0.8868011
    class counts:   303   307   310   315   264   299   137
   probabilities: 0.157 0.159 0.160 0.163 0.136 0.155 0.071
  left son=4 (1574 obs) right son=5 (361 obs)
  Primary splits:
      Claims     < 1.5      to the right, improve=24.537530, (0 missing)
      Payment    < 6761.5   to the right, improve=21.931260, (0 missing)
      Insured    < 30.755   to the right, improve=17.836450, (0 missing)
      Bonus      < 6.5      to the left,  improve= 1.909943, (0 missing)
      Kilometres < 3.5      to the right, improve= 1.890227, (0 missing)
  Surrogate splits:
      Payment < 3597     to the right, agree=0.943, adj=0.693, (0 split)
      Insured < 22.925   to the right, agree=0.882, adj=0.368, (0 split)

Node number 3: 247 observations
  predicted class=7  expected loss=0.3643725  P(node) =0.1131989
    class counts:    12     8     5     0    49    16   157
   probabilities: 0.049 0.032 0.020 0.000 0.198 0.065 0.636

Node number 4: 1574 observations,    complexity param=0.01928227
  predicted class=4  expected loss=0.8151207  P(node) =0.7213566
    class counts:   276   270   270   291   183   229    55
   probabilities: 0.175 0.172 0.172 0.185 0.116 0.145 0.035
  left son=8 (354 obs) right son=9 (1220 obs)
  Primary splits:
      Insured < 757.37   to the right, improve=7.096855, (0 missing)
      Payment < 294105.5 to the right, improve=5.264421, (0 missing)
      Claims  < 4.5      to the right, improve=4.858938, (0 missing)
      Make    < 8.5      to the left,  improve=4.084324, (0 missing)
      Bonus   < 5.5      to the left,  improve=1.564487, (0 missing)
  Surrogate splits:
      Claims  < 44.5     to the right, agree=0.935, adj=0.709, (0 split)
      Payment < 272516   to the right, agree=0.930, adj=0.689, (0 split)
      Make    < 8.5      to the right, agree=0.837, adj=0.277, (0 split)
      Bonus   < 6.5      to the right, agree=0.801, adj=0.113, (0 split)
```

```
Node number 5: 361 observations,    complexity param=0.01660418
  predicted class=7  expected loss=0.7728532  P(node) =0.1654445
    class counts:    27    37    40    24    81    70    82
   probabilities: 0.075 0.102 0.111 0.066 0.224 0.194 0.227
  left son=10 (293 obs) right son=11 (68 obs)
  Primary splits:
      Bonus      < 5.5      to the left,  improve=14.312300, (0 missing)
      Kilometres < 3.5      to the right, improve= 9.077050, (0 missing)
      Make       < 1.5      to the right, improve= 7.278342, (0 missing)
      Payment    < 4228.5   to the right, improve= 2.401977, (0 missing)
      Insured    < 21.39    to the left,  improve= 2.209768, (0 missing)
  Surrogate splits:
      Insured < 58.62    to the left,  agree=0.82, adj=0.044, (0 split)

Node number 8: 354 observations
  predicted class=4  expected loss=0.7062147  P(node) =0.1622365
    class counts:    53    56    63   104    25    50     3
   probabilities: 0.150 0.158 0.178 0.294 0.071 0.141 0.008

Node number 9: 1220 observations,    complexity param=0.01178361
  predicted class=1  expected loss=0.8172131  P(node) =0.5591201
    class counts:   223   214   207   187   158   179    52
   probabilities: 0.183 0.175 0.170 0.153 0.130 0.147 0.043
  left son=18 (1148 obs) right son=19 (72 obs)
  Primary splits:
      Make    < 8.5      to the left,  improve=14.394020, (0 missing)
      Bonus   < 6.5      to the left,  improve= 5.007216, (0 missing)
      Payment < 375304.5 to the right, improve= 4.656929, (0 missing)
      Claims  < 85.5     to the right, improve= 4.149427, (0 missing)
      Insured < 78.635   to the left,  improve= 2.495010, (0 missing)
  Surrogate splits:
      Claims  < 61       to the left,  agree=0.944, adj=0.056, (0 split)
      Payment < 421713   to the left,  agree=0.943, adj=0.028, (0 split)

Node number 10: 293 observations
  predicted class=5  expected loss=0.7542662  P(node) =0.1342805
    class counts:    24    33    38    21    72    64    41
   probabilities: 0.082 0.113 0.130 0.072 0.246 0.218 0.140

Node number 11: 68 observations
  predicted class=7  expected loss=0.3970588  P(node) =0.03116407
    class counts:     3     4     2     3     9     6    41
   probabilities: 0.044 0.059 0.029 0.044 0.132 0.088 0.603

Node number 18: 1148 observations
  predicted class=1  expected loss=0.8118467  P(node) =0.5261228
    class counts:   216   208   202   187   142   170    23
   probabilities: 0.188 0.181 0.176 0.163 0.124 0.148 0.020

Node number 19: 72 observations
  predicted class=7  expected loss=0.5972222  P(node) =0.03299725
    class counts:     7     6     5     0    16     9    29
   probabilities: 0.097 0.083 0.069 0.000 0.222 0.125 0.403
```



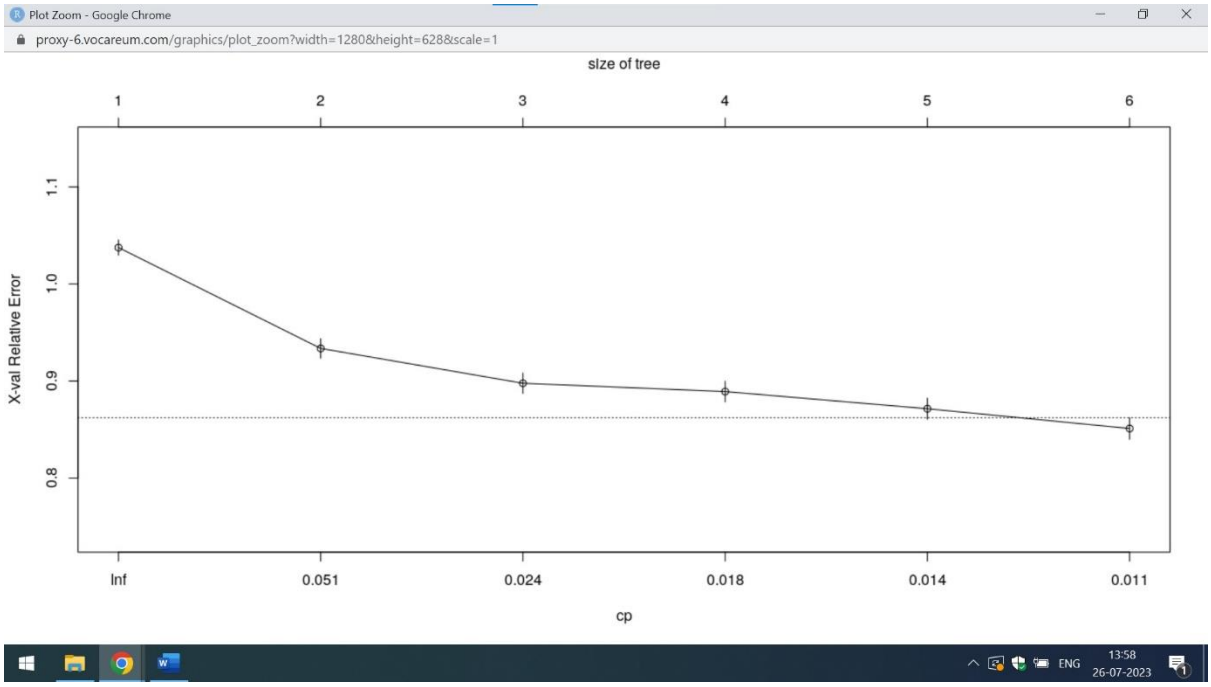


From the above attached screenshot,one can analyse that at nodenumber1,node number 2,node number 4 , 5 and 9 are some nodes reflecting the insured amount,claims and payment in a positive format

```
> printcp(insurance_analysis)

Classification tree:
rpart(formula = Zone ~ ., data = insurance_data, method = "class")

Variables actually used in tree construction:
[1] Bonus   Claims  Insured Make

Root node error: 1867/2182 = 0.85564
```

```
n= 2182

        CP nsplit rel error  xerror      xstd
1 0.084092      0   1.00000 1.03749 0.0078991
2 0.031066      1   0.91591 0.93358 0.0100302
3 0.019282      2   0.88484 0.89770 0.0105594
4 0.016604      3   0.86556 0.88913 0.0106738
5 0.011784      4   0.84896 0.87145 0.0108960
6 0.010000      5   0.83717 0.85110 0.0111306

>
```

The above attached screenshot shows the root node error which is 0.85



This tree gives an idea when the size of tree increases the relative error decreases

Q5) The committee wants to understand what affects their claim rates so as to decide the right premiums for a certain set of situations. Hence, they need to find whether the insured amount, zone, kilometre, bonus, or make affects the claim rates and to what extent.

Ans) Decision Tree Algorithm is helpful in analysing the factors for the claim rates.Below attached is the code in R

```
print("Insurance Factors Identification")

insurance_data<-
read.csv("https://raw.githubusercontent.com/shivanipriya89/Insurance/main/Insurance.csv")

print(insurance_data)
```

Convert claim to factor

insurance_data$Claims<-sapply(insurance_data$Claims,factor)

str(insurance_data)

Build the model

insurance_results<-rpart(Claims~.,data=insurance_data,method="class")

insurance_results

summary(insurance_results)

printcp(insurance_results)

plotcp(insurance_results)

Below attached are the screenshots:

```
> print("Insurance Factors Identification")
[1] "Insurance Factors Identification"
> insurance_data<-read.csv("https://raw.githubusercontent.com/shivanipriya89
/Insurance/main/Insurance.csv")
> print(insurance_data)
    Kilometres Zone Bonus Make  Insured Claims Payment
1            1    1     1    1   455.13    108  392491
2            1    1     1    2    69.17     19   46221
3            1    1     1    3    72.88     13   15694
4            1    1     1    4  1292.39    124  422201
5            1    1     1    5   191.01     40  119373
6            1    1     1    6   477.66     57  170913
7            1    1     1    7   105.58     23   56940
8            1    1     1    8    32.55     14   77487
9            1    1     1    9  9998.46   1704 6805992
10           1    1     2    1   314.58     45  214011
11           1    1     2    2    61.82     10   65303
12           1    1     2    3    47.06      5   20871
13           1    1     2    4   782.58     48  242894
14           1    1     2    5   115.43     11   23545
15           1    1     2    6   338.06     23   39598
16           1    1     2    7    70.44      7   48767
17           1    1     2    8    15.25      2    6560
18           1    1     2    9  6416.19    638 2873487
19           1    1     3    1   309.98     24  134931
20           1    1     3    2    49.18      6   50908
21           1    1     3    3    32.02      3    4399
22           1    1     3    4   497.20     23  112992
```

23	1	1	3	5	73.48	6	14788
24	1	1	3	6	278.01	9	48713
25	1	1	3	7	66.36	9	52076
26	1	1	3	8	17.86	3	13161
27	1	1	3	9	5063.15	408	1707680
28	1	1	4	1	318.48	29	103866
29	1	1	4	2	57.21	7	77588
30	1	1	4	3	35.33	4	11839
31	1	1	4	4	374.28	20	98140
32	1	1	4	5	85.18	7	27919
33	1	1	4	6	199.70	7	103910
34	1	1	4	7	60.46	4	38065
35	1	1	4	8	12.74	0	0
36	1	1	4	9	4263.09	300	1267678
37	1	1	5	1	444.37	25	69203
38	1	1	5	2	86.65	6	14620
39	1	1	5	3	53.81	5	40258
40	1	1	5	4	361.62	22	161455
41	1	1	5	5	117.91	3	20011
42	1	1	5	6	232.55	11	57214
43	1	1	5	7	81.27	3	4496
44	1	1	5	8	18.21	0	0
45	1	1	5	9	4761.37	301	1116208
46	1	1	6	1	1016.67	61	217617
47	1	1	6	2	150.56	12	58099
48	1	1	6	3	126.69	4	12268
49	1	1	6	4	517.31	16	59634
50	1	1	6	5	246.62	13	84966
51	1	1	6	6	482.96	19	137005
52	1	1	6	7	203.60	12	33767
53	1	1	6	8	25.88	3	6279
54	1	1	6	9	9197.99	522	1939894
55	1	1	7	1	5430.48	214	1048698
56	1	1	7	2	659.54	24	143915
57	1	1	7	3	657.34	22	153830
58	1	1	7	4	2795.72	60	202413
59	1	1	7	5	1119.12	41	180345
60	1	1	7	6	2861.69	92	484604
61	1	1	7	7	1111.00	37	152801
62	1	1	7	8	166.61	6	14084
63	1	1	7	9	48264.64	1875	8977527
64	1	2	1	1	458.89	98	532092
65	1	2	1	2	72.78	5	9006
66	1	2	1	3	33.23	7	45498
67	1	2	1	4	1544.55	101	337480
68	1	2	1	5	200.90	43	191982
69	1	2	1	6	663.98	65	300632
70	1	2	1	7	124.73	10	23349
71	1	2	1	8	29.24	4	13581
72	1	2	1	9	11381.00	1326	6173598
73	1	2	2	1	364.78	40	211494
74	1	2	2	2	51.89	5	10811
75	1	2	2	3	29.39	4	36204
76	1	2	2	4	1053.01	33	135007
77	1	2	2	5	110.10	16	49061
78	1	2	2	6	470.62	30	64287

79	1	2	2	7	93.29	8	51080
80	1	2	2	8	17.88	1	600
81	1	2	2	9	7607.66	591	2510207
82	1	2	3	1	315.14	17	106975
83	1	2	3	2	64.53	4	16922
84	1	2	3	3	27.24	2	8255
85	1	2	3	4	726.13	29	93656
86	1	2	3	5	96.49	4	44966
87	1	2	3	6	365.81	16	43426
88	1	2	3	7	80.80	5	48691
89	1	2	3	8	13.30	1	1325
90	1	2	3	9	5898.98	320	1392652
91	1	2	4	1	320.47	16	136143
92	1	2	4	2	69.55	4	34137
93	1	2	4	3	33.37	1	2702
94	1	2	4	4	507.57	9	22292
95	1	2	4	5	72.40	7	20295
96	1	2	4	6	316.14	9	57404
97	1	2	4	7	72.05	3	8538
98	1	2	4	8	18.35	0	0
99	1	2	4	9	4957.56	269	1375988
100	1	2	5	1	473.63	27	136376
101	1	2	5	2	88.09	8	19038
102	1	2	5	3	46.27	2	3604
103	1	2	5	4	467.96	9	10597
104	1	2	5	5	126.88	10	26433
105	1	2	5	6	316.15	11	52950
106	1	2	5	7	101.11	7	21620
107	1	2	5	8	23.37	1	2680
108	1	2	5	9	5481.31	282	1079230
109	1	2	6	1	996.27	61	236220
110	1	2	6	2	175.14	10	25036
111	1	2	6	3	111.97	5	22261
112	1	2	6	4	601.61	16	88961
113	1	2	6	5	260.69	14	64368
114	1	2	6	6	593.18	17	65578
115	1	2	6	7	229.72	7	46244
116	1	2	6	8	46.66	7	14385
117	1	2	6	9	9830.72	413	1840742
118	1	2	7	1	6021.43	233	1086534
119	1	2	7	2	852.80	33	165960
120	1	2	7	3	751.59	24	100564
121	1	2	7	4	3293.99	60	201401
122	1	2	7	5	1289.09	53	272610
123	1	2	7	6	3665.27	97	524316
124	1	2	7	7	1369.91	35	159658
125	1	2	7	8	183.98	5	18603
126	1	2	7	9	55084.54	1744	8500391
127	1	3	1	1	453.06	72	329632
128	1	3	1	2	67.13	9	79565
129	1	3	1	3	35.22	5	11746
130	1	3	1	4	1653.17	89	338305
131	1	3	1	5	206.62	38	124108
132	1	3	1	6	859.95	64	213078
133	1	3	1	7	110.08	11	34844
134	1	3	1	8	25.92	5	25319

```
135          1    3     1    9 11436.08   1205 5173923
136          1    3     2    1   317.10     25   90162
137          1    3     2    2    54.58      8   19327
138          1    3     2    3    22.59      3    1209
139          1    3     2    4  1187.43     30  123124
140          1    3     2    5   129.53     13   99258
141          1    3     2    6   617.11     40  137828
142          1    3     2    7   102.50      7   14904
 [ reached 'max' / getOption("max.print") -- omitted 2040 rows ]


>
```

The above mentioned screenshot represents the tabular view of insurance data set with entries in all 7 columns

```
> summary(insurance_results)
Call:
rpart(formula = Claims ~ ., data = insurance_data, method = "class")
  n= 2182

          CP nsplit rel error    xerror       xstd
1 0.11908737      0 1.0000000 1.0000000 0.00990898
2 0.03171953      1 0.8809126 0.8814691 0.01159452
3 0.02003339      2 0.8491931 0.8619922 0.01179647
4 0.01001669      3 0.8291597 0.8352810 0.01204449
5 0.01000000      4 0.8191430 0.8358375 0.01203965

Variable importance
Payment Insured    Zone
     67      24       9

Node number 1: 2182 observations,    complexity param=0.1190874
  predicted class=0   expected loss=0.8235564  P(node) =1
    class counts:     1    16    34     1     5     2    15    28     1
6    38    98     4    44    65   169     1    13    66   131    46     1
17   100    14   385     1    10    14     1     2    29    28     1     1
4     7     2     2     1     4     4     6     8     1     9    12    51
214     1    24     1     1     8     1     1     2     6     2    10     1
4     2     7     3     1     1    13     1    19     1     2     1     1
9     5     6     2     3     1     4     3     1     1     1     1     2
5     2     9     1     1     1     1     6     1    29     3     2     1
1     2     1     8     6     1     1     1     6     4     2     1     4
1     2     1     8     1     1     1     2     1     4     1     1     3
4     2     1     2     3     1     1     1     6     2     1     1     2
4     1     2     5     1     2     1     1     2     1     1     2     1
1     1     1     2     1     1     1     1     3     1     4     1     1
2     1     1     1     1     1     1     6     2     1     1     1     3
2     1     1     1     1     1     1     1     2     1     6     2     1
1     1     1     1     1     1     1     1     1     1     1     1     2
2     1     1     1     1     1     1     2     2     2     1     1     1
1     1     1     1     2     1     1     1     1     2     1     1     2
1     1     1     1     1     3     1     1     1     1     1     1     1
1     1     1     2     1     1     1     1     1     1     1     1     1
```

```
   probabilities: 0.000 0.007 0.016 0.000 0.002 0.001 0.007 0.013 0.000 0.00
3 0.017 0.045 0.002 0.020 0.030 0.077 0.000 0.006 0.030 0.060 0.021 0.000 0.
008 0.046 0.006 0.176 0.000 0.005 0.006 0.000 0.001 0.013 0.013 0.000 0.000
0.002 0.003 0.001 0.001 0.000 0.002 0.002 0.003 0.004 0.000 0.004 0.005 0.02
3 0.098 0.000 0.011 0.000 0.000 0.004 0.000 0.000 0.001 0.003 0.001 0.005 0.
000 0.002 0.001 0.003 0.001 0.000 0.000 0.006 0.000 0.009 0.000 0.001 0.000
0.000 0.004 0.002 0.003 0.001 0.001 0.000 0.002 0.001 0.000 0.000 0.000 0.00
0 0.001 0.002 0.001 0.004 0.000 0.000 0.000 0.000 0.003 0.000 0.013 0.001 0.
001 0.000 0.000 0.001 0.000 0.004 0.003 0.000 0.000 0.000 0.003 0.002 0.001
0.000 0.002 0.000 0.001 0.000 0.004 0.000 0.000 0.000 0.001 0.000 0.002 0.00
0 0.000 0.001 0.002 0.001 0.000 0.001 0.001 0.000 0.000 0.000 0.003 0.001 0.
000 0.000 0.001 0.002 0.000 0.001 0.002 0.000 0.001 0.000 0.000 0.001 0.000
0.000 0.001 0.000 0.000 0.000 0.000 0.001 0.000 0.000 0.000 0.000 0.001 0.00
0 0.002 0.000 0.000 0.001 0.000 0.000 0.000 0.000 0.000 0.000 0.003 0.001 0.
000 0.000 0.000 0.001 0.001 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.001
0.000 0.003 0.001 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00
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001 0.001 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.001 0.000 0.000 0.000
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0 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.001 0.000 0.000 0.000 0.
000 0.000 0.000 0.000 0.000 0.000
  left son=2 (385 obs) right son=3 (1797 obs)
  Primary splits:
      Payment    < 36      to the left,  improve=330.48330, (0 missing)
      Insured    < 18.405  to the left,  improve=157.76770, (0 missing)
      Zone       < 6.5     to the right, improve= 74.63989, (0 missing)
      Make       < 8.5     to the left,  improve= 14.34613, (0 missing)
      Kilometres < 3.5     to the right, improve= 14.28534, (0 missing)
  Surrogate splits:
      Insured < 10.875  to the left,  agree=0.904, adj=0.457, (0 split)
      Zone    < 6.5     to the right, agree=0.859, adj=0.203, (0 split)

Node number 2: 385 observations
  predicted class=0   expected loss=0  P(node) =0.1764436
    class counts:     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0   385     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
   probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00
0 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.
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0 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.
000 0.000 0.000 0.000 0.000 0.000

Node number 3: 1797 observations,    complexity param=0.03171953
  predicted class=1   expected loss=0.8809126  P(node) =0.8235564
    class counts:     1    16    34     1     5     2    15    28     1
6    38    98     4    44    65   169     1    13    66   131    46     1
17   100    14     0     1    10    14     1     2    29    28     1     1
4     7     2     2     1     4     4     6     8     1     9    12    51
214     1    24     1     1     8     1     1     2     6     2    10     1
4     2     7     3     1     1    13     1    19     1     2     1     1
9     5     6     2     3     1     4     3     1     1     1     1     2
5     2     9     1     1     1     1     6     1    29     3     2     1
1     2     1     8     6     1     1     1     6     4     2     1     4
1     2     1     8     1     1     1     2     1     4     1     1     3
4     2     1     2     3     1     1     1     6     2     1     1     2
4     1     2     5     1     2     1     1     2     1     1     2     1
1     1     1     2     1     1     1     1     3     1     4     1     1
2     1     1     1     1     1     1     6     2     1     1     1     3
2     1     1     1     1     1     1     1     2     1     6     2     1
1     1     1     1     1     1     1     1     1     1     1     1     2
2     1     1     1     1     1     1     2     2     2     1     1     1
1     1     1     1     2     1     1     1     1     2     1     1     2
1     1     1     1     1     3     1     1     1     1     1     1     1
1     1     1     2     1     1     1     1     1     1     1     1     1
   probabilities: 0.001 0.009 0.019 0.001 0.003 0.001 0.008 0.016 0.001 0.00
3 0.021 0.055 0.002 0.024 0.036 0.094 0.001 0.007 0.037 0.073 0.026 0.001 0.
009 0.056 0.008 0.000 0.001 0.006 0.008 0.001 0.001 0.016 0.016 0.001 0.001
0.002 0.004 0.001 0.001 0.001 0.002 0.002 0.003 0.004 0.001 0.005 0.007 0.02
8 0.119 0.001 0.013 0.001 0.001 0.004 0.001 0.001 0.001 0.003 0.001 0.006 0.
001 0.002 0.001 0.004 0.002 0.001 0.001 0.007 0.001 0.011 0.001 0.001 0.001
0.001 0.005 0.003 0.003 0.001 0.002 0.001 0.002 0.002 0.001 0.001 0.001 0.00
1 0.001 0.003 0.001 0.005 0.001 0.001 0.001 0.001 0.003 0.001 0.016 0.002 0.
001 0.001 0.001 0.001 0.001 0.004 0.003 0.001 0.001 0.001 0.003 0.002 0.001
0.001 0.002 0.001 0.001 0.001 0.004 0.001 0.001 0.001 0.001 0.001 0.002 0.00
1 0.001 0.002 0.002 0.001 0.001 0.001 0.002 0.001 0.001 0.001 0.003 0.001 0.
001 0.001 0.001 0.002 0.001 0.001 0.003 0.001 0.001 0.001 0.001 0.001 0.001
0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.002 0.00
1 0.002 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.003 0.001 0.
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001 0.001 0.001 0.002 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001
0.001 0.003 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.00
1 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.
001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001
0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.002 0.001 0.00
1 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.
001 0.001 0.001 0.001 0.001 0.001
  left son=6 (225 obs) right son=7 (1572 obs)
  Primary splits:
      Payment    < 4379    to the left,  improve=89.935620, (0 missing)
      Insured    < 47.035  to the left,  improve=74.469590, (0 missing)
      Zone       < 6.5     to the right, improve=14.227280, (0 missing)
      Make       < 8.5     to the left,  improve= 9.340987, (0 missing)
      Kilometres < 3.5     to the right, improve= 8.781400, (0 missing)
  Surrogate splits:
      Insured < 4.385   to the left,  agree=0.881, adj=0.049, (0 split)

Node number 6: 225 observations
  predicted class=1   expected loss=0.32  P(node) =0.1031164
    class counts:     0     0     0     0     0     0     0     0     0
0     0     1     0     0     0    55     0     0     0    13     0     0
0     3     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
153     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
   probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00
0 0.000 0.004 0.000 0.000 0.000 0.244 0.000 0.000 0.000 0.058 0.000 0.000 0.
000 0.013 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00
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0 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.
000 0.000 0.000 0.000 0.000 0.000

Node number 7: 1572 observations,    complexity param=0.02003339
  predicted class=3   expected loss=0.9249364  P(node) =0.72044
    class counts:     1    16    34     1     5     2    15    28     1
6    38    97     4    44    65   114     1    13    66   118    46     1
17    97    14     0     1    10    14     1     2    29    28     1     1
4     7     2     2     1     4     4     6     8     1     9    12    51
61     1    24     1     1     8     1     1     2     6     2    10     1
4     2     7     3     1     1    13     1    19     1     2     1     1
9     5     6     2     3     1     4     3     1     1     1     1     2
5     2     9     1     1     1     1     6     1    29     3     2     1
1     2     1     8     6     1     1     1     6     4     2     1     4
1     2     1     8     1     1     1     2     1     4     1     1     3
4     2     1     2     3     1     1     1     6     2     1     1     2
4     1     2     5     1     2     1     1     2     1     1     2     1
1     1     1     2     1     1     1     1     3     1     4     1     1
2     1     1     1     1     1     1     6     2     1     1     1     3
2     1     1     1     1     1     1     1     2     1     6     2     1
1     1     1     1     1     1     1     1     1     1     1     1     2
2     1     1     1     1     1     1     2     2     2     1     1     1
1     1     1     1     2     1     1     1     1     2     1     1     2
1     1     1     1     1     3     1     1     1     1     1     1     1
1     1     1     2     1     1     1     1     1     1     1     1     1
   probabilities: 0.001 0.010 0.022 0.001 0.003 0.001 0.010 0.018 0.001 0.00
4 0.024 0.062 0.003 0.028 0.041 0.073 0.001 0.008 0.042 0.075 0.029 0.001 0.
011 0.062 0.009 0.000 0.001 0.006 0.009 0.001 0.001 0.018 0.018 0.001 0.001
0.003 0.004 0.001 0.001 0.001 0.003 0.003 0.004 0.005 0.001 0.006 0.008 0.03
2 0.039 0.001 0.015 0.001 0.001 0.005 0.001 0.001 0.001 0.004 0.001 0.006 0.
001 0.003 0.001 0.004 0.002 0.001 0.001 0.008 0.001 0.012 0.001 0.001 0.001
0.001 0.006 0.003 0.004 0.001 0.002 0.001 0.003 0.002 0.001 0.001 0.001 0.00
1 0.001 0.003 0.001 0.006 0.001 0.001 0.001 0.001 0.004 0.001 0.018 0.002 0.
001 0.001 0.001 0.001 0.001 0.005 0.004 0.001 0.001 0.001 0.004 0.003 0.001
0.001 0.003 0.001 0.001 0.001 0.005 0.001 0.001 0.001 0.001 0.001 0.003 0.00
1 0.001 0.002 0.003 0.001 0.001 0.001 0.002 0.001 0.001 0.001 0.004 0.001 0.
001 0.001 0.001 0.003 0.001 0.001 0.003 0.001 0.001 0.001 0.001 0.001 0.001
0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.002 0.00
1 0.003 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.004 0.001 0.
001 0.001 0.001 0.002 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001
0.001 0.004 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.00
1 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.
001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001
0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.002 0.001 0.00
1 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.
001 0.001 0.001 0.001 0.001 0.001
  left son=14 (306 obs) right son=15 (1266 obs)
  Primary splits:
      Payment    < 13583.5 to the left,  improve=39.637770, (0 missing)
      Insured    < 103.93  to the left,  improve=37.498660, (0 missing)
      Make       < 8.5     to the left,  improve= 6.629778, (0 missing)
      Bonus      < 6.5     to the left,  improve= 4.774978, (0 missing)
      Kilometres < 3.5     to the right, improve= 4.735376, (0 missing)
  Surrogate splits:
```

```
      Insured < 39.155  to the left,  agree=0.84, adj=0.176, (0 split)

Node number 14: 306 observations
  predicted class=2   expected loss=0.7124183  P(node) =0.1402383
    class counts:     0     0     0     0     0     0     0     0     0
0     0    31     0     0     8    88     0     0    12    82     2     0
0    46     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     3
34     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
   probabilities: 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00
0 0.000 0.101 0.000 0.000 0.026 0.288 0.000 0.000 0.039 0.268 0.007 0.000 0.
000 0.150 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.01
0 0.111 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.
000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00
0 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.
000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00
0 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.
000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00
0 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.
000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00
0 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.
000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00
0 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.
000 0.000 0.000 0.000 0.000 0.000

Node number 15: 1266 observations,    complexity param=0.01001669
  predicted class=5   expected loss=0.9478673  P(node) =0.5802016
    class counts:     1    16    34     1     5     2    15    28     1
6    38    66     4    44    57    26     1    13    54    36    44     1
17    51    14     0     1    10    14     1     2    29    28     1     1
4     7     2     2     1     4     4     6     8     1     9    12    48
27     1    24     1     1     8     1     1     2     6     2    10     1
4     2     7     3     1     1    13     1    19     1     2     1     1
9     5     6     2     3     1     4     3     1     1     1     1     2
5     2     9     1     1     1     1     6     1    29     3     2     1
```

```
1     2     1     8     6     1     1     1     6     4     2     1     4
1     2     1     8     1     1     1     2     1     4     1     1     3
4     2     1     2     3     1     1     1     6     2     1     1     2
4     1     2     5     1     2     1     1     2     1     1     2     1
1     1     1     2     1     1     1     1     3     1     4     1     1
2     1     1     1     1     1     1     6     2     1     1     1     3
2     1     1     1     1     1     1     1     2     1     6     2     1
1     1     1     1     1     1     1     1     1     1     1     1     2
2     1     1     1     1     1     1     2     2     2     1     1     1
1     1     1     1     2     1     1     1     1     2     1     1     2
1     1     1     1     1     3     1     1     1     1     1     1     1
1     1     1     2     1     1     1     1     1     1     1     1     1
   probabilities: 0.001 0.013 0.027 0.001 0.004 0.002 0.012 0.022 0.001 0.00
5 0.030 0.052 0.003 0.035 0.045 0.021 0.001 0.010 0.043 0.028 0.035 0.001 0.
013 0.040 0.011 0.000 0.001 0.008 0.011 0.001 0.002 0.023 0.022 0.001 0.001
0.003 0.006 0.002 0.002 0.001 0.003 0.003 0.005 0.006 0.001 0.007 0.009 0.03
8 0.021 0.001 0.019 0.001 0.001 0.006 0.001 0.001 0.002 0.005 0.002 0.008 0.
001 0.003 0.002 0.006 0.002 0.001 0.001 0.010 0.001 0.015 0.001 0.002 0.001
0.001 0.007 0.004 0.005 0.002 0.002 0.001 0.003 0.002 0.001 0.001 0.001 0.00
1 0.002 0.004 0.002 0.007 0.001 0.001 0.001 0.001 0.005 0.001 0.023 0.002 0.
002 0.001 0.001 0.002 0.001 0.006 0.005 0.001 0.001 0.001 0.005 0.003 0.002
0.001 0.003 0.001 0.002 0.001 0.006 0.001 0.001 0.001 0.002 0.001 0.003 0.00
1 0.001 0.002 0.003 0.002 0.001 0.002 0.002 0.001 0.001 0.001 0.005 0.002 0.
001 0.001 0.002 0.003 0.001 0.002 0.004 0.001 0.002 0.001 0.001 0.002 0.001
0.001 0.002 0.001 0.001 0.001 0.001 0.002 0.001 0.001 0.001 0.001 0.002 0.00
1 0.003 0.001 0.001 0.002 0.001 0.001 0.001 0.001 0.001 0.001 0.005 0.002 0.
001 0.001 0.001 0.002 0.002 0.001 0.001 0.001 0.001 0.001 0.001 0.002
0.001 0.005 0.002 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.00
1 0.001 0.001 0.001 0.002 0.002 0.001 0.001 0.001 0.001 0.001 0.001 0.002 0.
002 0.002 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.002 0.001 0.001 0.001
0.001 0.002 0.001 0.001 0.002 0.001 0.001 0.001 0.001 0.001 0.002 0.001 0.00
1 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.002 0.001 0.001 0.001 0.
001 0.001 0.001 0.001 0.001 0.001
  left son=30 (457 obs) right son=31 (809 obs)
  Primary splits:
      Payment    < 54528   to the left,  improve=19.471720, (0 missing)
      Insured    < 229.725 to the left,  improve=17.794150, (0 missing)
      Make       < 8.5     to the left,  improve= 4.644546, (0 missing)
      Bonus      < 6.5     to the left,  improve= 2.915686, (0 missing)
      Kilometres < 3.5     to the left,  improve= 1.787639, (0 missing)
  Surrogate splits:
      Insured < 177.345 to the left,  agree=0.827, adj=0.521, (0 split)
      Zone    < 6.5     to the right, agree=0.648, adj=0.024, (0 split)

Node number 30: 457 observations
  predicted class=5   expected loss=0.8708972  P(node) =0.2094409
    class counts:     0     4    11     0     0     0     2     6     0
0    26    59     0    23    50    25     0     0    44    31    22     0
0    49     3     0     0     0     0     0     0    13     3     0     0
0     0     0     0     0     0     0     0     0     0     0     0    39
27     0     6     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     3     0     2     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     9     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
```

```
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0     0
   probabilities: 0.000 0.009 0.024 0.000 0.000 0.000 0.004 0.013 0.000 0.00
0 0.057 0.129 0.000 0.050 0.109 0.055 0.000 0.000 0.096 0.068 0.048 0.000 0.
000 0.107 0.007 0.000 0.000 0.000 0.000 0.000 0.000 0.028 0.007 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.08
5 0.059 0.000 0.013 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.
000 0.000 0.000 0.000 0.000 0.000 0.000 0.007 0.000 0.004 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00
0 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.020 0.000 0.
000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00
0 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.
000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00
0 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.
000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00
0 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.
000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.00
0 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.
000 0.000 0.000 0.000 0.000 0.000

Node number 31: 809 observations
  predicted class=16  expected loss=0.9690977  P(node) =0.3707608
    class counts:     1    12    23     1     5     2    13    22     1
6    12     7     4    21     7     1     1    13    10     5    22     1
17     2    11     0     1    10    14     1     2    16    25     1     1
4     7     2     2     1     4     4     6     8     1     9    12     9
0     1    18     1     1     8     1     1     2     6     2    10     1
4     2     7     3     1     1    10     1    17     1     2     1     1
9     5     6     2     3     1     4     3     1     1     1     1     2
5     2     9     1     1     1     1     6     1    20     3     2     1
1     2     1     8     6     1     1     1     6     4     2     1     4
1     2     1     8     1     1     1     2     1     4     1     1     3
4     2     1     2     3     1     1     1     6     2     1     1     2
4     1     2     5     1     2     1     1     2     1     1     2     1
1     1     1     2     1     1     1     1     3     1     4     1     1
2     1     1     1     1     1     1     6     2     1     1     1     3
2     1     1     1     1     1     1     1     2     1     6     2     1
1     1     1     1     1     1     1     1     1     1     1     1     2
2     1     1     1     1     1     1     2     2     2     1     1     1
1     1     1     1     2     1     1     1     1     2     1     1     2
1     1     1     1     1     3     1     1     1     1     1     1     1
1     1     1     2     1     1     1     1     1     1     1     1     1
   probabilities: 0.001 0.015 0.028 0.001 0.006 0.002 0.016 0.027 0.001 0.00
7 0.015 0.009 0.005 0.026 0.009 0.001 0.001 0.016 0.012 0.006 0.027 0.001 0.
```

```
021 0.002 0.014 0.000 0.001 0.012 0.017 0.001 0.002 0.020 0.031 0.001 0.001
0.005 0.009 0.002 0.002 0.001 0.005 0.005 0.007 0.010 0.001 0.011 0.015 0.01
1 0.000 0.001 0.022 0.001 0.001 0.010 0.001 0.001 0.002 0.007 0.002 0.012 0.
001 0.005 0.002 0.009 0.004 0.001 0.001 0.012 0.001 0.021 0.001 0.002 0.001
0.001 0.011 0.006 0.007 0.002 0.004 0.001 0.005 0.004 0.001 0.001 0.001 0.00
1 0.002 0.006 0.002 0.011 0.001 0.001 0.001 0.001 0.007 0.001 0.025 0.004 0.
002 0.001 0.001 0.002 0.001 0.010 0.007 0.001 0.001 0.001 0.007 0.005 0.002
0.001 0.005 0.001 0.002 0.001 0.010 0.001 0.001 0.001 0.002 0.001 0.005 0.00
1 0.001 0.004 0.005 0.002 0.001 0.002 0.004 0.001 0.001 0.001 0.007 0.002 0.
001 0.001 0.002 0.005 0.001 0.002 0.006 0.001 0.002 0.001 0.001 0.002 0.001
0.001 0.002 0.001 0.001 0.001 0.001 0.002 0.001 0.001 0.001 0.001 0.004 0.00
1 0.005 0.001 0.001 0.002 0.001 0.001 0.001 0.001 0.001 0.001 0.007 0.002 0.
001 0.001 0.001 0.004 0.002 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.002
0.001 0.007 0.002 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.00
1 0.001 0.001 0.001 0.002 0.002 0.001 0.001 0.001 0.001 0.001 0.001 0.002 0.
002 0.002 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.002 0.001 0.001 0.001
0.001 0.002 0.001 0.001 0.002 0.001 0.001 0.001 0.001 0.001 0.004 0.001 0.00
1 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.002 0.001 0.001 0.001 0.
001 0.001 0.001 0.001 0.001 0.001
```

The above screenshot represents the summary of the insurance factors identification. From the above attached screenshot,it is clear that factors affecting the claims are Payment,Insured and Zones. There are total 2182 variables of the dataset and 31 nodes. The values of the Payment,Insured,Zone,Make and Kms for each node are listed in the above mentioned screenshots