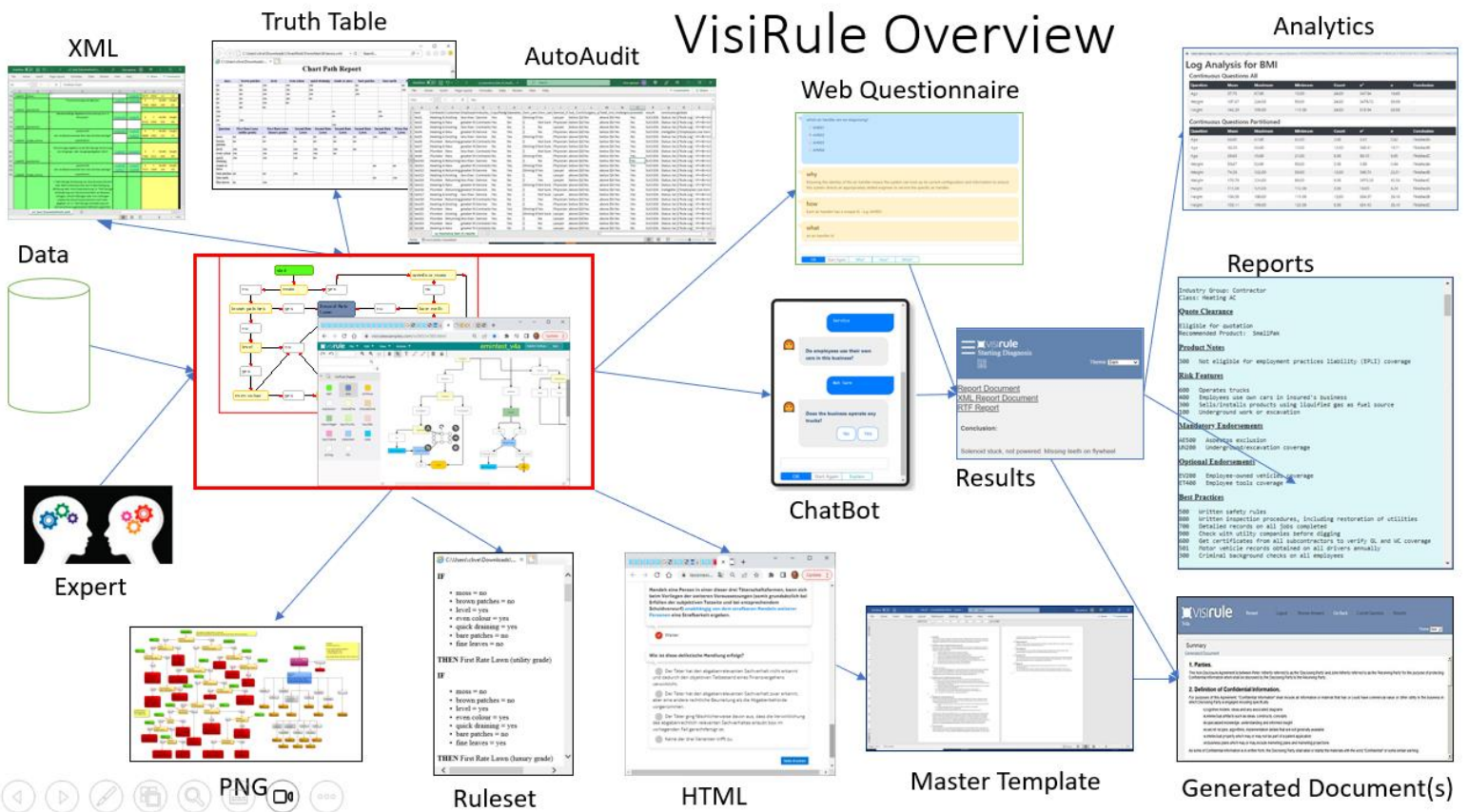


This document identifies and illustrates various aspects of VisiRule



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Introduction

VisiRule is a powerful visual low-code no-code authoring tool which can be used in a wide variety of applications across multiple industries.

VisiRule provides a visual way to create and review decision logic flow. Furthermore, the visual representation can be executed either on the client or server-side. Server-side execution can also make use of the Flex expert system and Prolog language.

From a process perspective, we can think of VisiRule in 4 phases:

- a. Knowledge capture and representation
- b. Code delivery and execution
- c. Output & report generation
- d. User Analytics

This corresponds to

- a. **Development:**
The chart's questions and logic and outcomes are created and tested; various views of the contents of the chart can be explored and shared as pictures/diagrams
- b. **Delivery 1:**
In interactive mode, questions are asked via a guided questionnaire.
In data mode, answers are extracted from some data source using a Rest service
- c. **Delivery 2:**
Conclusions and outcomes are reached by the execution of a chart and various outputs are generated such as reports, documents, bespoke advice
- d. **Post Delivery:**
Sessions are logged and aggregated over time to see look for correlations between answers and outcomes across user types

Expert Authoring

Phase: Development Time

The default way to create a VisiRule chart is for the author to draw the chart and arrange the logic using VisiRule Author or VisiRule365 by defining questions and expressions linked by arrowed lines.

VisiRule Author is a Windows desktop application; VR365 is a device independent browser-based charting tool.

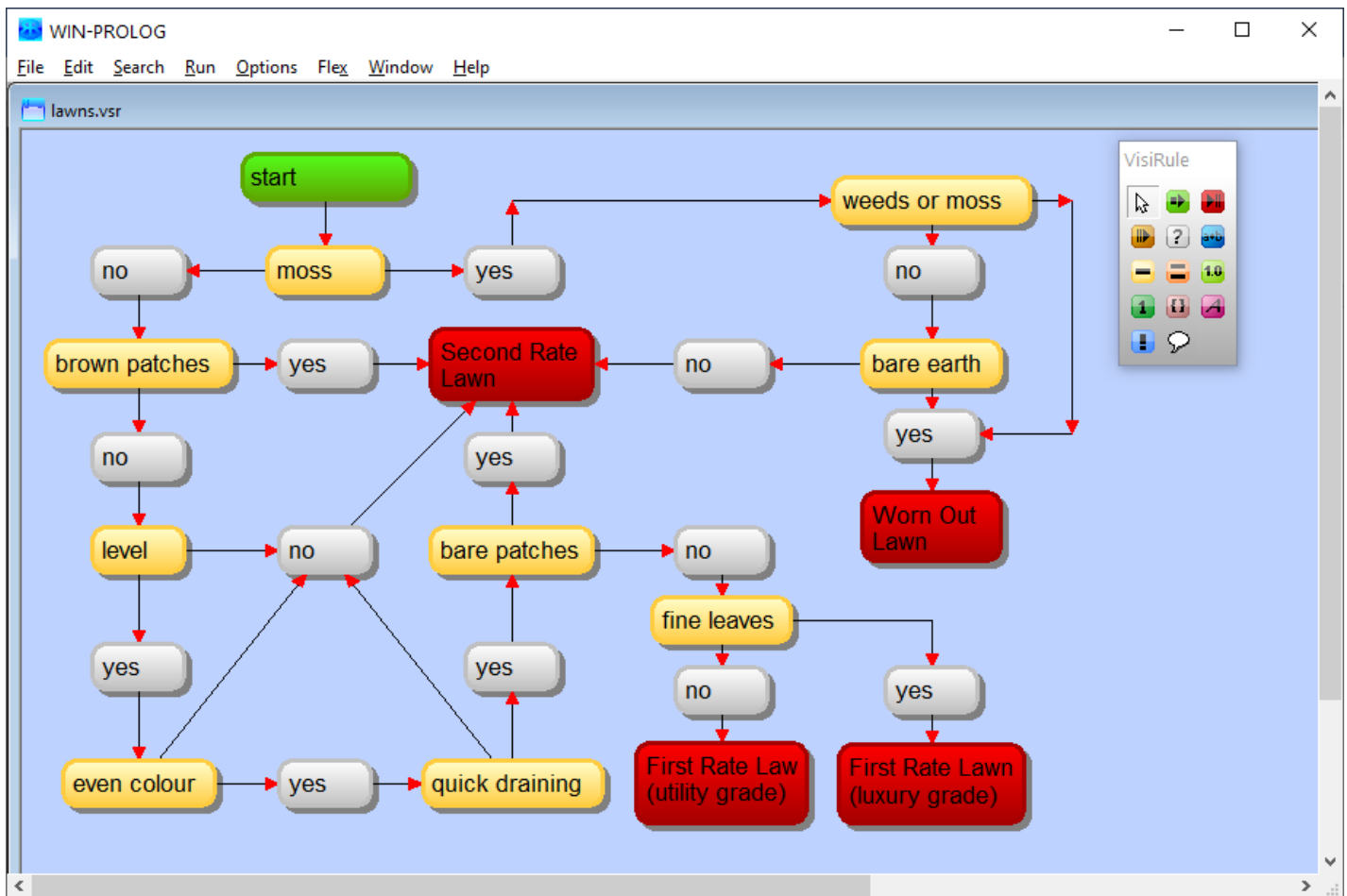


Figure 1 VisiRule chart developed on the PC

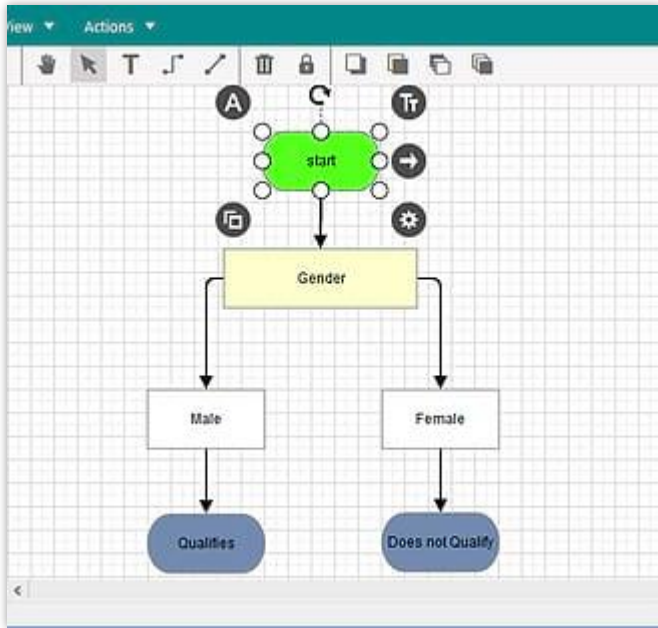


Figure 2 VisiRule chart developed on VR365

VR365 provides a browser-based authoring experience and does not require Windows.

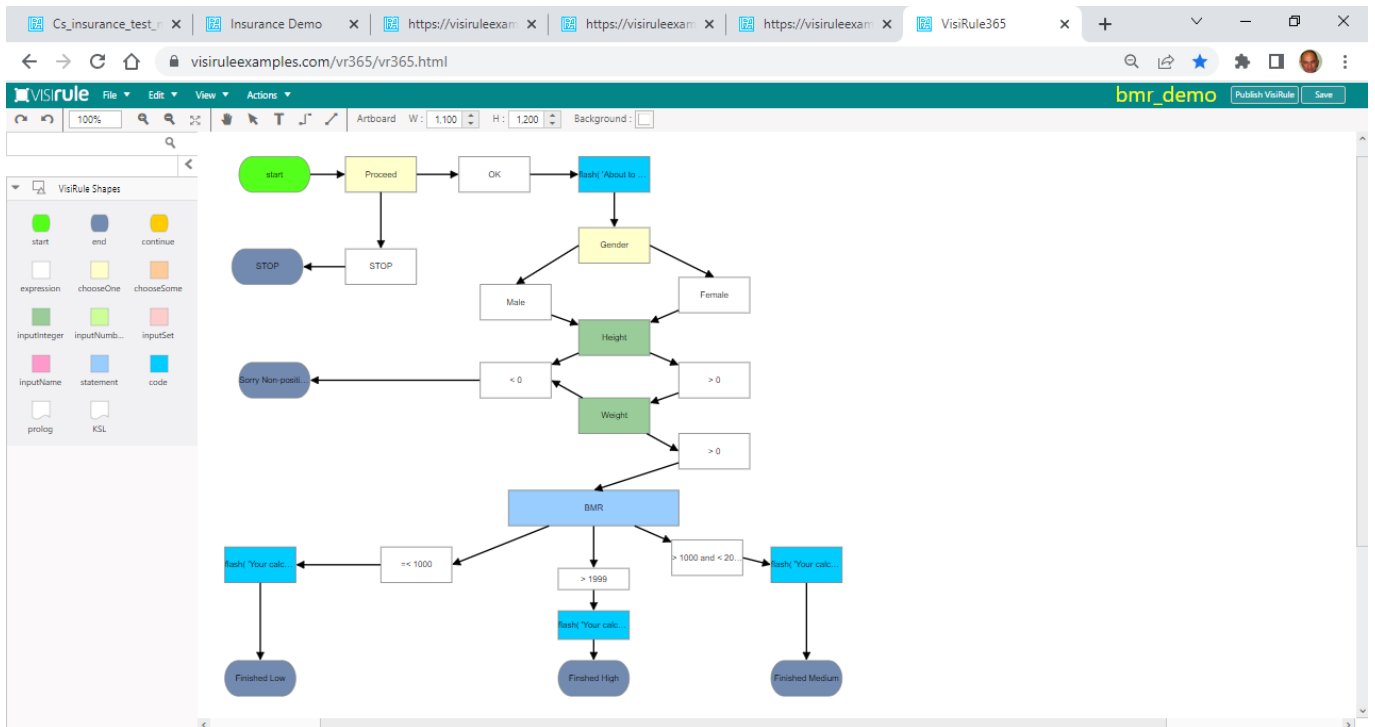


Figure 3 VR365 showing a VisiRule chart being developed

Exporting to WMF, PNG, GIF, JPG

Phase: Development Time

Once a chart has been drawn, it can be exported a chart as a picture and shared with others (the default WMF format can be converted to PNG). In this way charts can be shared with others without them needing access to any VisiRule specific software.

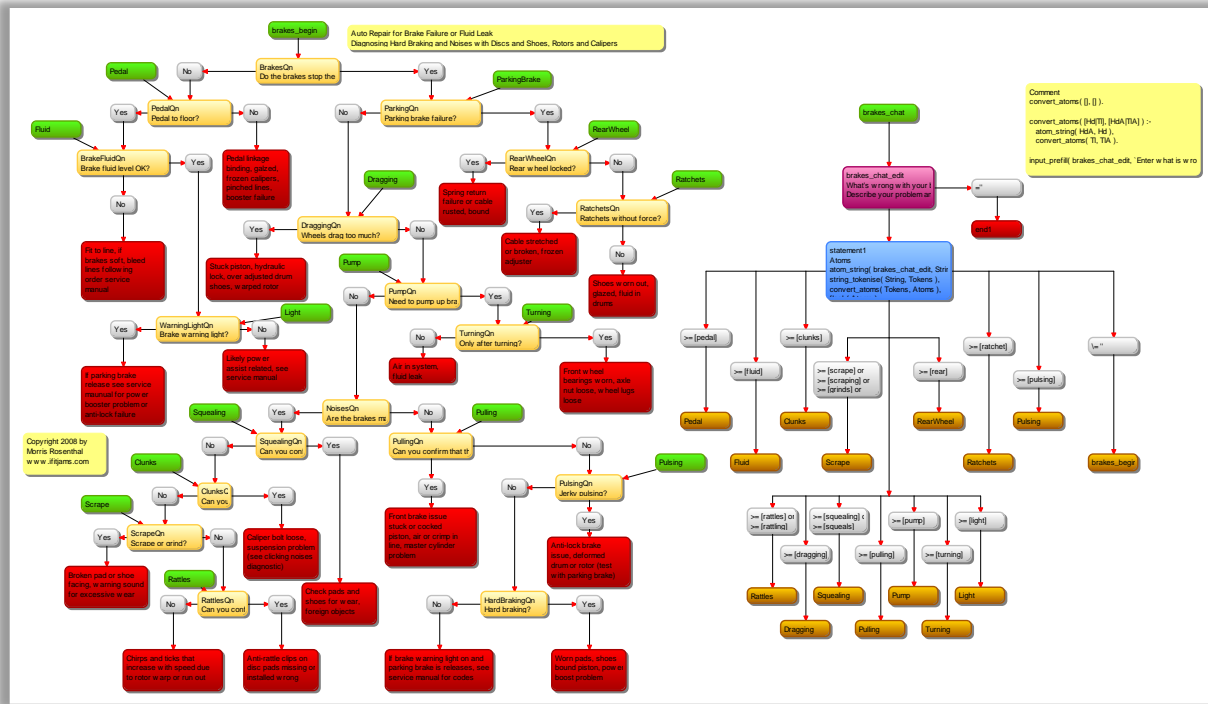


Figure 4 PNG of VisiRule chart exported from PC

Charts typically contain multiple coloured boxes linked together in a directed network. Each box or node is individually sized and arranged as the author desires.

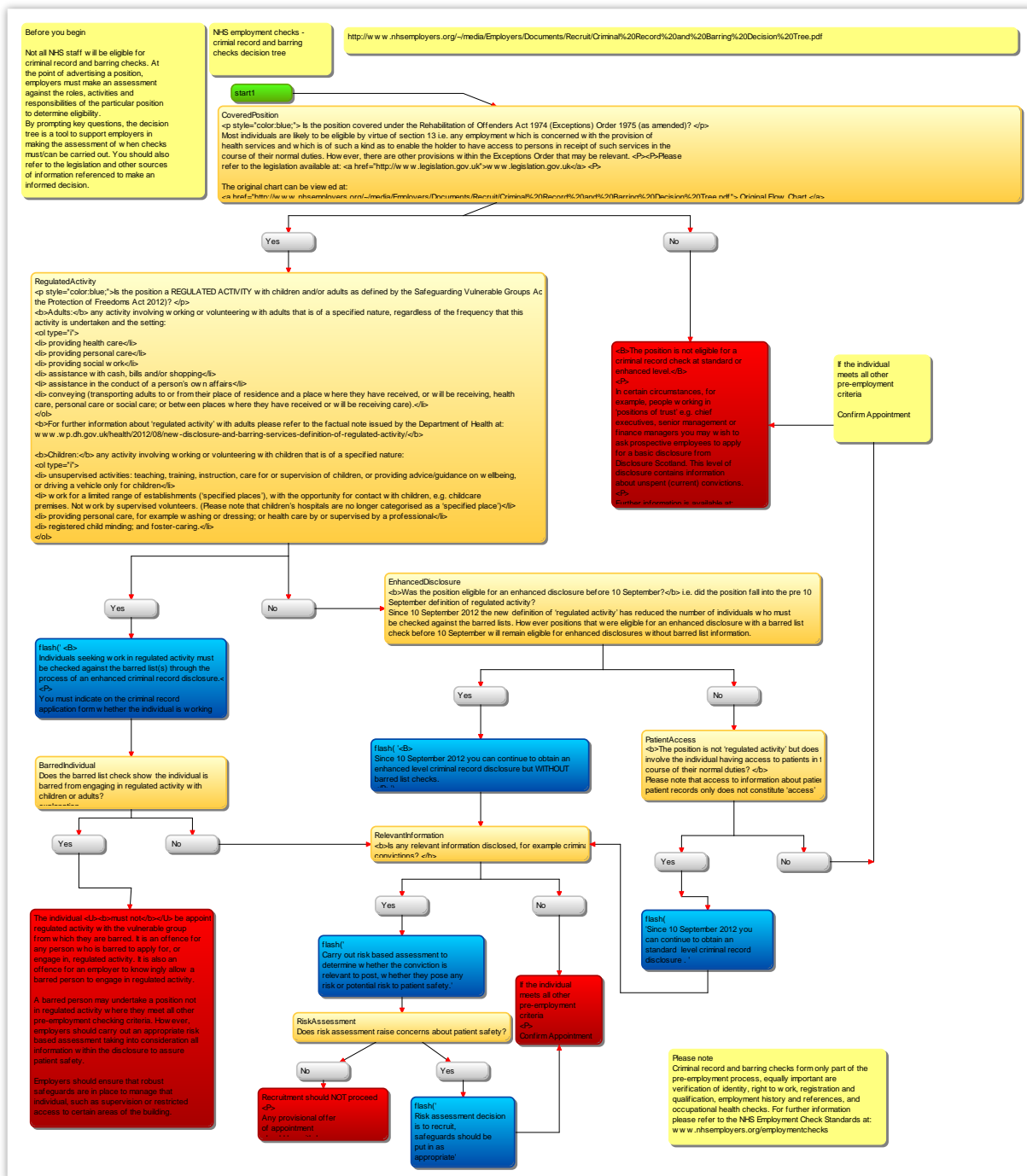


Figure 5 PNG of VisiRule chart exported on PC

AutoAudit Test Harness

Phase: Development Time

VisiRule AutoAudit allows you to instantly create and execute test data to help validate the chart logic.

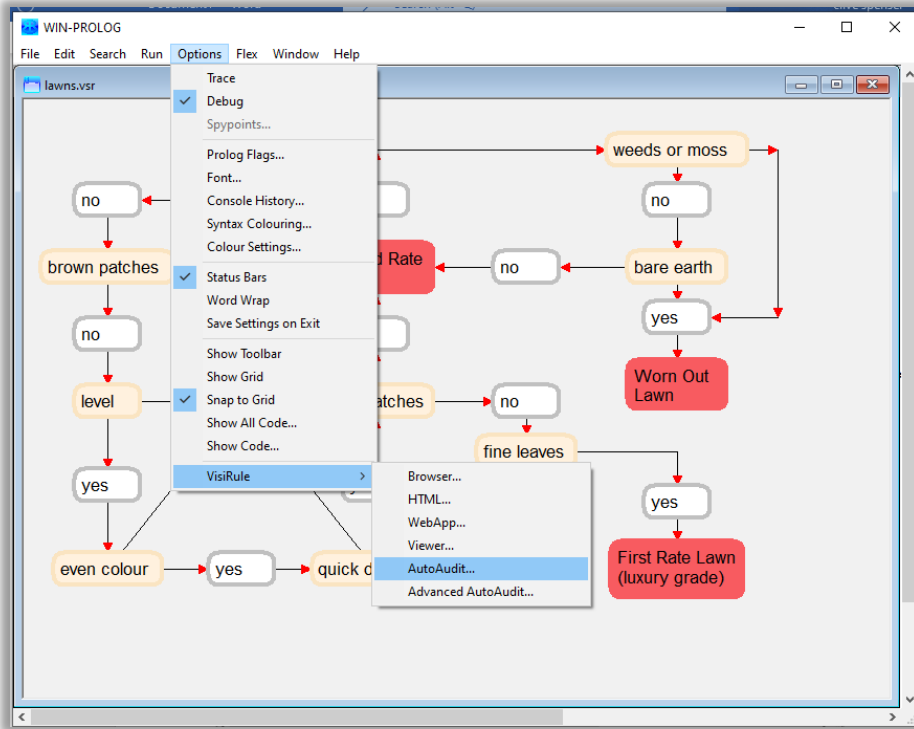


Figure 6 Invoking VisiRule AutoAudit

The screenshot shows an Excel spreadsheet titled 'lawns_results.csv'. The spreadsheet contains 22 rows of test data. The columns represent the input variables from the flowchart and the resulting output. The data is as follows:

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
|----|--------|------------|------------|-----------|-----------|------------|-------|------|------------|----------|---------|------------|---------|---|
| 1 | test | bare earth | bare patch | brown pat | even colo | fine leave | level | moss | quick drai | weeds or | result | conclusion | globals | |
| 2 | test1 | no | yes | no | yes | no | yes | no | no | yes | SUCCESS | Second | [] | |
| 3 | test2 | no | yes | yes | yes | yes | yes | yes | yes | no | SUCCESS | Second | [] | |
| 4 | test3 | no | no | no | no | yes | yes | no | no | yes | SUCCESS | Second | [] | |
| 5 | test4 | no | no | yes | yes | yes | no | no | yes | yes | SUCCESS | Second | [] | |
| 6 | test5 | no | no | yes | no | yes | yes | yes | no | yes | SUCCESS | Worn | [] | |
| 7 | test6 | no | no | no | no | yes | no | no | yes | yes | SUCCESS | Second | [] | |
| 8 | test7 | no | yes | yes | no | yes | yes | no | yes | yes | SUCCESS | Second | [] | |
| 9 | test8 | no | no | no | yes | yes | yes | yes | yes | no | SUCCESS | Second | [] | |
| 10 | test9 | no | no | no | yes | no | yes | yes | no | yes | SUCCESS | Worn | [] | |
| 11 | test10 | no | yes | no | no | yes | yes | yes | no | yes | SUCCESS | Worn | [] | |
| 12 | test11 | yes | no | yes | no | yes | no | yes | yes | yes | SUCCESS | Worn | [] | |
| 13 | test12 | yes | no | no | yes | yes | no | no | no | yes | SUCCESS | Second | [] | |
| 14 | test13 | yes | no | yes | yes | no | no | yes | no | yes | SUCCESS | Worn | [] | |
| 15 | test14 | yes | yes | no | yes | no | yes | yes | no | yes | SUCCESS | Worn | [] | |
| 16 | test15 | no | yes | yes | no | no | no | no | yes | yes | SUCCESS | Second | [] | |
| 17 | test16 | no | no | yes | yes | yes | no | yes | no | no | SUCCESS | Second | [] | |
| 18 | test17 | no | yes | yes | yes | no | no | no | yes | yes | SUCCESS | Second | [] | |
| 19 | test18 | no | yes | yes | no | yes | no | yes | yes | no | SUCCESS | Second | [] | |
| 20 | test19 | yes | yes | yes | no | yes | yes | no | no | no | SUCCESS | Second | [] | |
| 21 | test20 | no | yes | yes | no | yes | yes | yes | yes | no | SUCCESS | Second | [] | |
| 22 | test21 | no | no | yes | yes | yes | no | yes | yes | yes | SUCCESS | Worn | [] | |

Figure 7 Generating test data with VisiRule AutoAudit

In addition, in its advanced mode, you can use your own specific test data, run it against different versions of the same chart and compare results for different results.

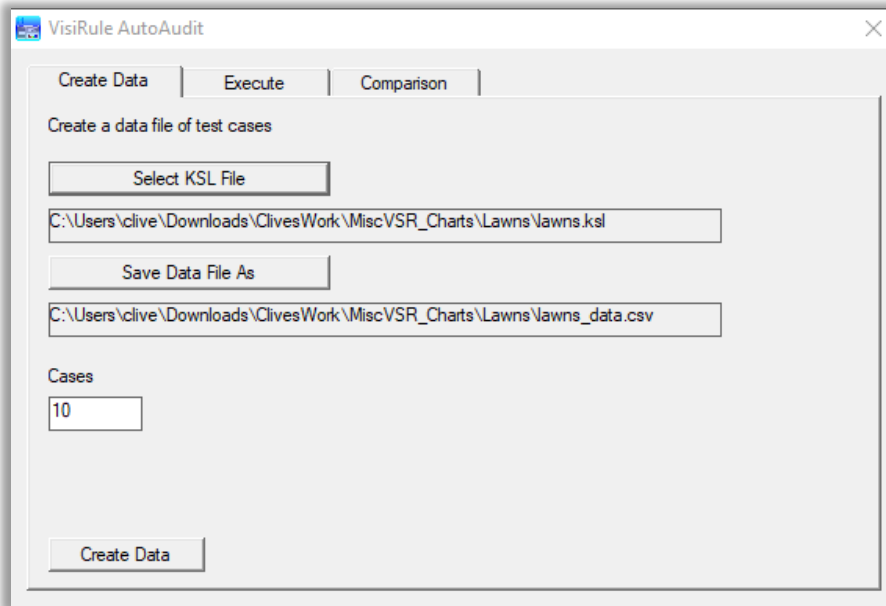


Figure 8 initial dialog for VisiRule AutoAudit

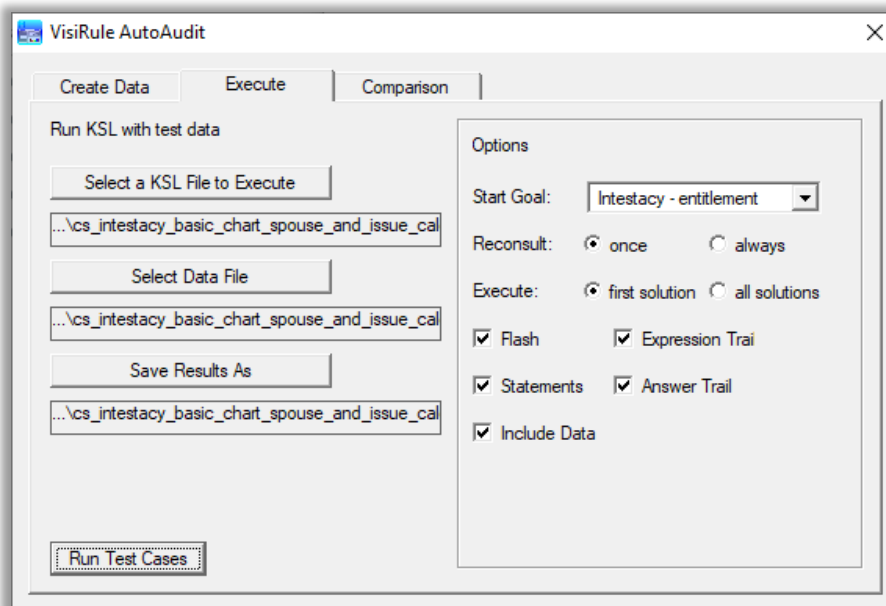


Figure 9 initial dialog for VisiRule AutoAudit advanced mode

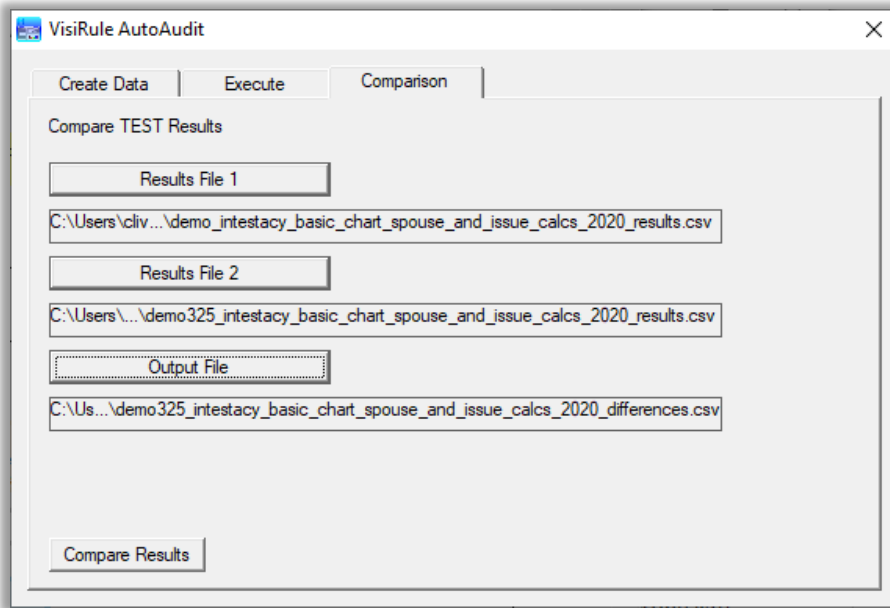


Figure 10 Comparing results with VisiRule AutoAudit

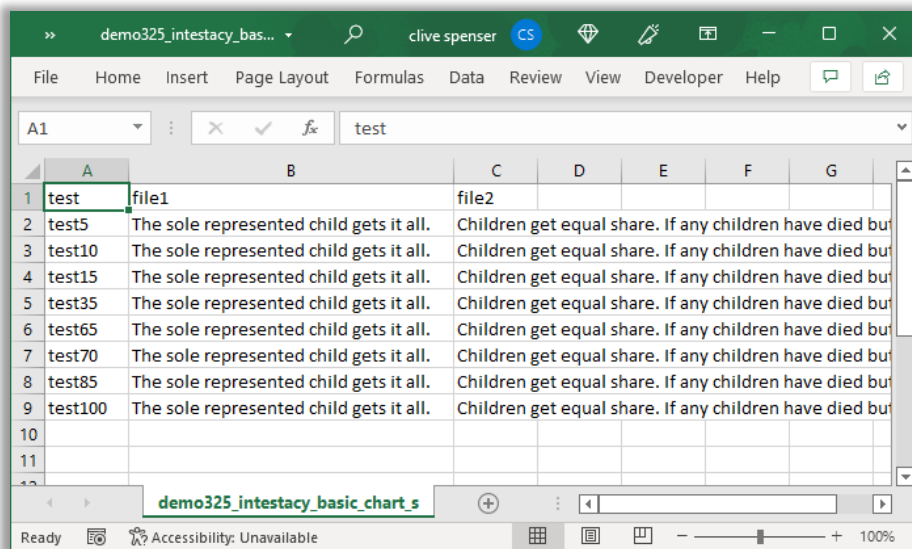


Figure 11 Seeing differences in results

Test suites can be built and used to compare results as and when charts get updated.

Truth Table Creation

Phase: Development Time

The VisiRule Truth Table component generates truth tables from VisiRule charts.

This is achieved by executing the chart exhaustively using all the various combinations of input against the chart one-by-one and recording the conclusion reached in each case.

This is very useful for validation and documentation purposes.

The answers are then inserted into an XML table showing:

- completed paths as IF/THEN rules
- decision truth tables generated
- questions used

The truth table is generated as XML and can be displayed in a browser or Excel

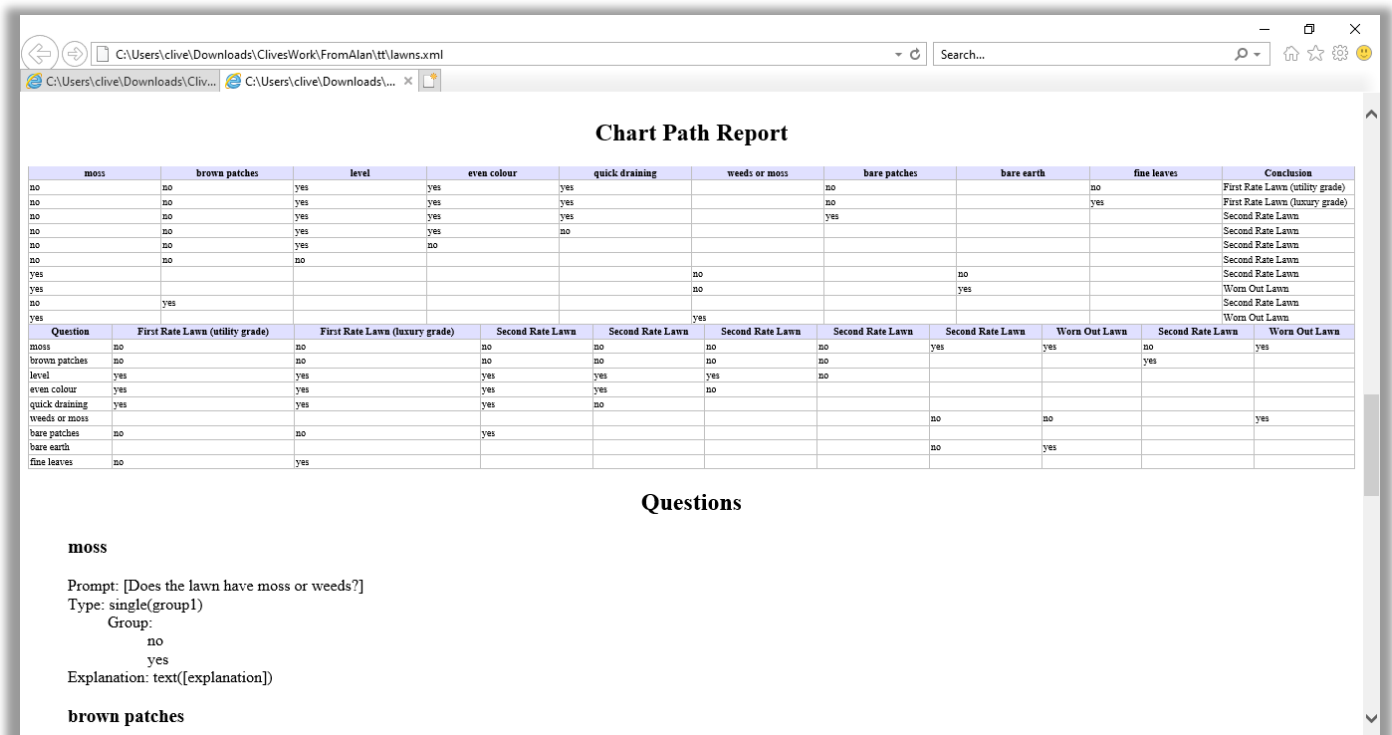


Figure 12 Generated Truth Table

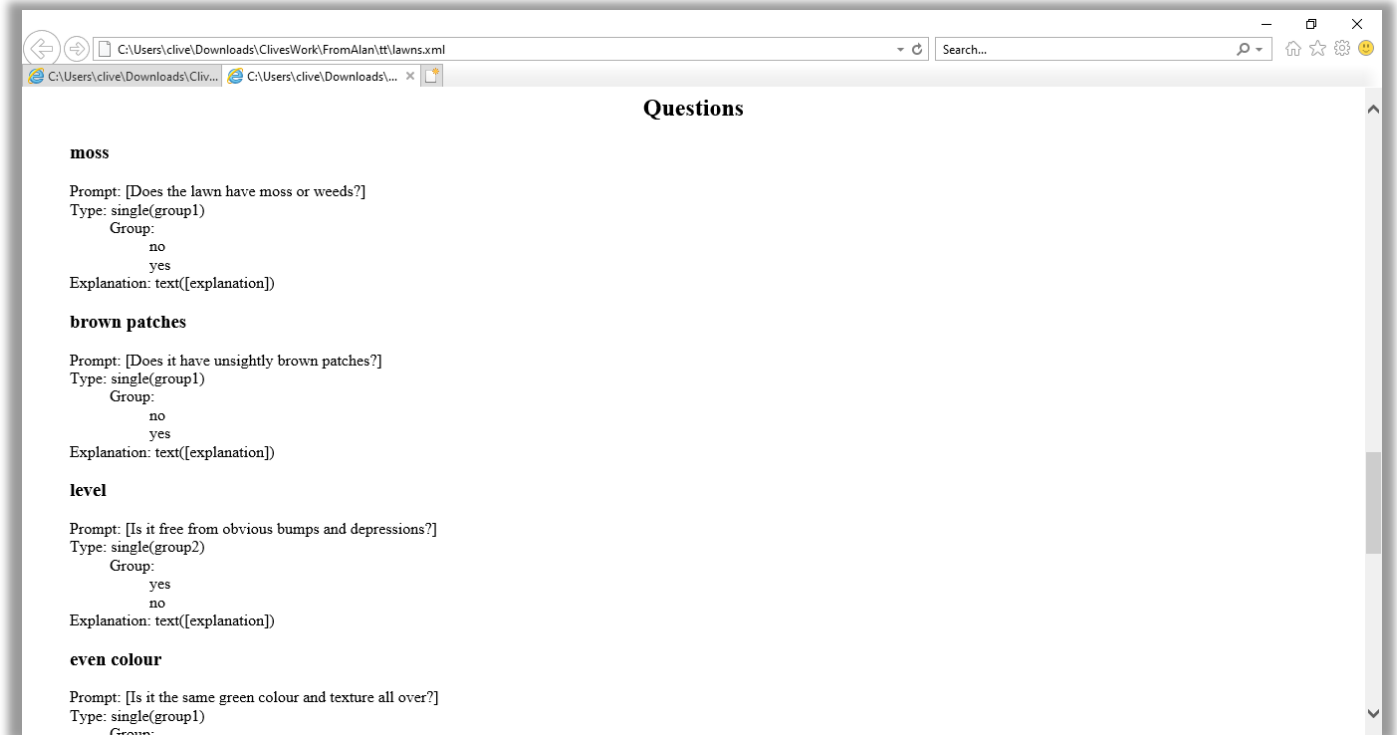


Figure 13 Rules generated from Truth Table

The truth table articulates all the questions and outcomes.

Ruleset

The truth table shows the implicit rules and can be loaded and examined in Word and Excel

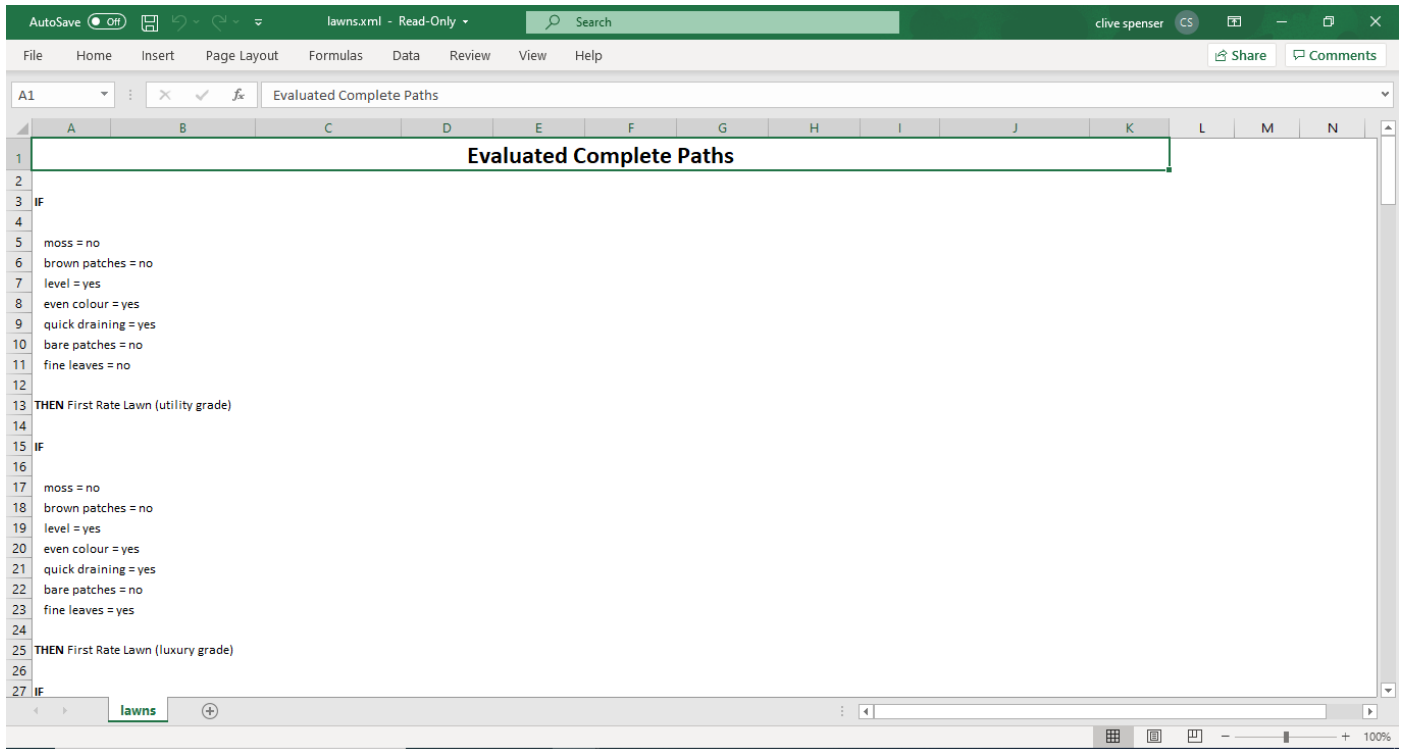


Figure 14 Completed paths generated from Truth Table in Excel

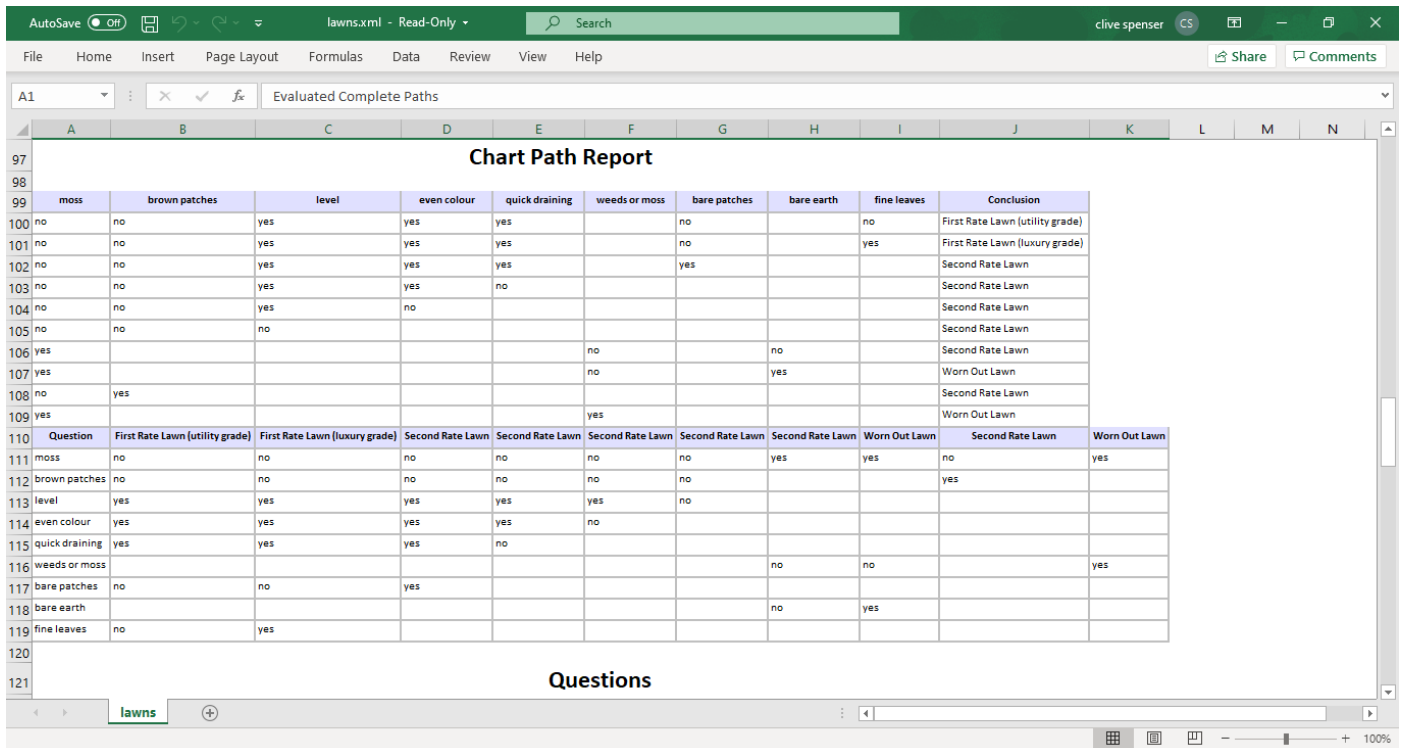


Figure 15 Generated Truth Table displayed in Excel

VisiRule Visualizer Tree View

Phase: Development Time

VisiRule charts can also be exported and examined using various tree view packages. The VisiRule Visualizer is one such package; it is browser based and provides a interesting way to visualize and explore the logical structure of a VisiRule chart.

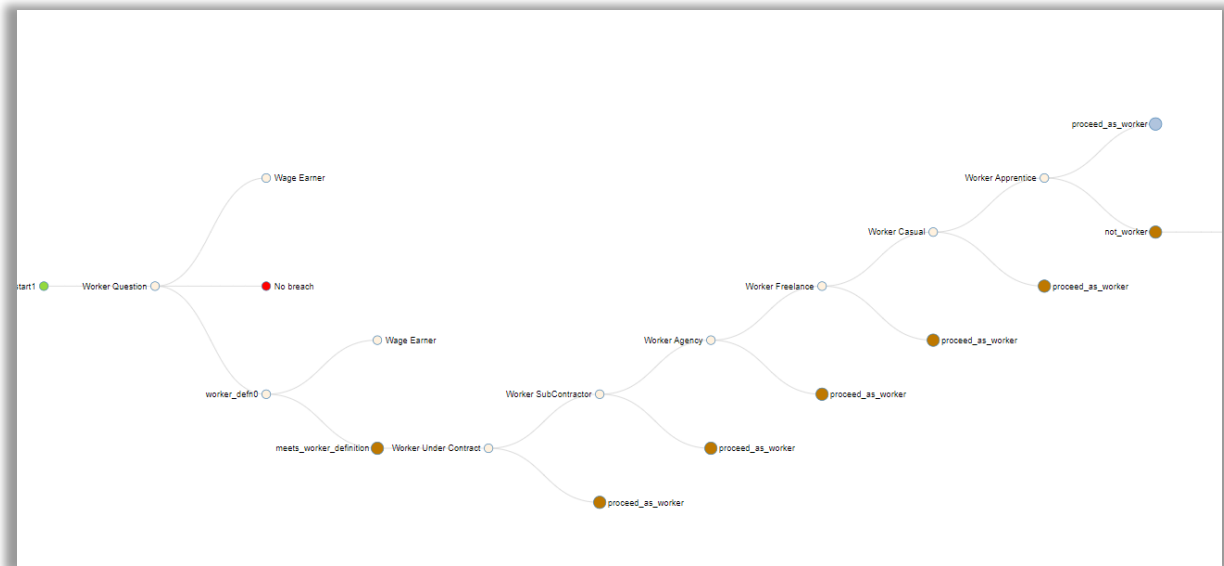


Figure 16 D3 based viewer

Radial View

Phase: Development Time

The Radial viewer allow you to explore the logical structure of the chart from a radial perspective.

A depth first tree maps on to a spiral.

A breadth first chart maps on to concentric circles.

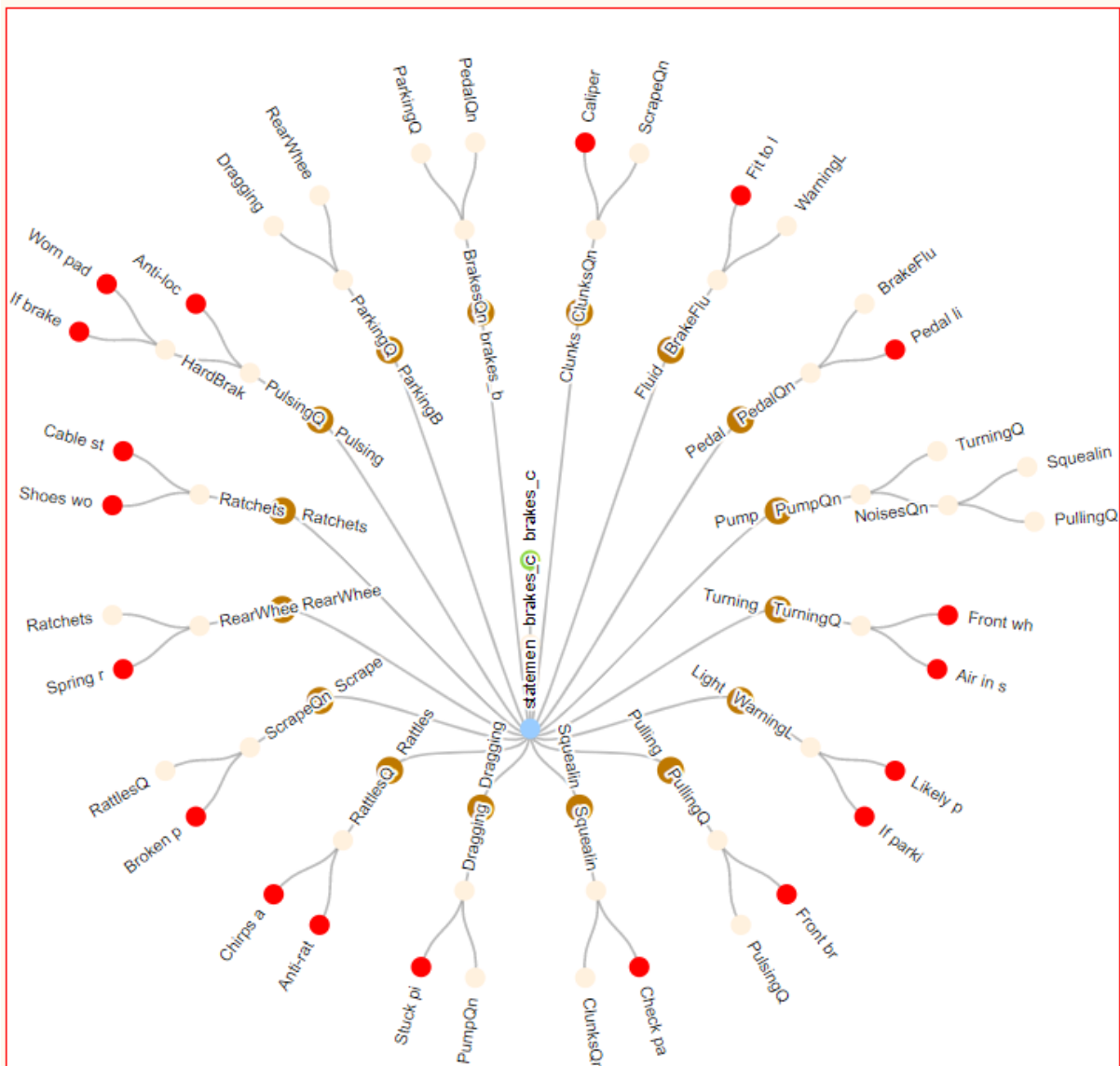


Figure 17 D3 based radial viewer

XML Export

Phase: Development Time

The nodes and links and expressions of a chart can be exported as XML data. This is an option available in VisiRule Author.

The XML data can then be viewed externally and even updated and then re-imported to create a new chart.

The screenshot shows a web browser window with the address bar displaying the file path: C:\Users\clive\Downloads\ClivesWork\MiscVSR_Charts\Lawns\lawns.xml. The browser title is "VisiRule Chart" and the page content is titled "LAWNS". The data is presented in a table with the following structure:

| Node | Type | Text | From | To | Size |
|-------|---------------|--|--------|-----------------|-----------------------------------|
| | | | | | X Y Width Height |
| node1 | expression | 1 yes | node19 | node20 | 132 324 48 24 |
| node2 | expression | 1 yes 2 3 | node18 | node10 | X Y Width Height 132 108 48 24 |
| node3 | expression | 1 no | node6 | node18 | X Y Width Height 36 60 48 24 |
| node4 | expression | 1 no | node18 | node28 | X Y Width Height 36 156 48 24 |
| node5 | expression | 1 yes | node28 | node19 | X Y Width Height 36 264 48 24 |
| node6 | single_choice | 1 moss 2 Does the lawn have moss or weeds? 3 explanation | node30 | node3 node13 | X Y Width Height 126 60 60 24 |
| node7 | end | 1 First Rate Lawn (luxury grade) | node15 | | X Y Width Height |

Figure 18 Exported XML from VisiRule chart in browser

VISIRULE OVERVIEW

| Node | Type | Text | From | To | Size |
|-------|---------------|--|--------|--------|-----------------------------------|
| | | yes | node19 | node20 | X Y Width Height 132 324 48 24 |
| node1 | expression | yes | node18 | node10 | X Y Width Height 132 108 48 24 |
| node2 | expression | no | node6 | node18 | X Y Width Height 36 60 48 24 |
| node3 | expression | no | node18 | node28 | X Y Width Height 36 156 48 24 |
| node4 | expression | yes | node28 | node19 | X Y Width Height 36 264 48 24 |
| node5 | expression | moss | node30 | node3 | X Y Width Height 126 60 60 24 |
| node6 | single_choice | Does the lawn have moss or weeds? explanation | | node13 | |
| node7 | end | First Rate Lawn (luxury grade) | node15 | | X Y Width Height 420 316 96 41 |
| node8 | end | First Rate Lawn (utility grade) | node14 | | X Y Width Height 316 315 88 42 |
| | | Worn Out Lawn | node16 | | X Y Width Height |

Figure 19 Exported XML from VisiRule chart in Word

Web Questionnaire

Phase: Delivery Time

When VisiRule charts are uploaded to the web, VisiRule Server automatically generates an interactive questionnaire spread across multiple pages. This is provided as a hosted service.

VISIRule

NDA Demo

Welcome to the NDA document generator

This is an example of how you can use VisiRule to generate documents using a document template

Note: we use the right hand pane to present a *running preview* of the document instance as it is being created

Please enter your full name **Next**

What is your email address?

1. Parties.
This Non-Disclosure Agreement is between **Not asked**, hitherto referred to as the 'Disclosing Party' and **Not asked** hitherto referred to as the 'Receiving Party' for the purpose of protecting Confidential Information which shall be disclosed by the Disclosing Party to the Receiving Party .

2. Definition of Confidential Information.
For purposes of this Agreement, "Confidential Information" shall include all information or material that has or could have commercial value or other utility in the business in which Disclosing Party is engaged including specifically:
ERROR! Text not found for : (Communication, 29638)

3. Exclusions from Confidential Information.
Receiving Party's obligations under this Agreement do not extend to information that is:

4. Obligations of Receiving Party.
Receiving Party shall hold and maintain the Confidential Information in strictest confidence for the sole and exclusive benefit of the Disclosing Party. Receiving Party shall carefully restrict access to Confidential Information to the following:

Figure 20 Generated document in flight



NDA Demo

Which of the following does the Confidential Information exclude?

discovered prior to disclosure

publicly known

learned through third party

independantly developed

written approval

subject to court order

other

Next

1. Parties.

This Non-Disclosure Agreement is between the Party of the First Part, hitherto referred to as the 'Disclosing Party' and the Party of the Second Part hitherto referred to as the 'Receiving Party' for the purpose of protecting Confidential Information which shall be disclosed by the Disclosing Party to the Receiving Party .

2. Definition of Confidential Information.

For purposes of this Agreement, "Confidential Information" shall include all information or material that has or could have commercial value or other utility in the business in which Disclosing Party is engaged including specifically:

- i. specialized knowledge, understanding and informed insight
- ii. cash-flow forecasts, financial projections, bank statements

As some of Confidential Information is in written form, the Disclosing Party shall label or stamp the materials with the word "Confidential" or some similar warning. As some of the Confidential Information has been transmitted orally, the Disclosing Party shall promptly provide a writing indicating that such oral communication constituted Confidential Information.

3. Exclusions from Confidential Information.

Receiving Party's obligations under this Agreement do not extend to information that is:

Figure 21 Generated document being partially completed by answers



Conclusion

The Document has been generated.

Reports

Text Report

XML Report

RTF Document

Question Trail

| Question | Answer | |
|-----------|------------------------------|----------------------------------|
| YourName | Jane Doe | explanator |
| YourEmail | jane@doe.com | <script> \$('input[name</script> |
| Status | Company | explanator |
| Party1 | the Party of the First Part | explanator |
| Party2 | the Party of the Second Part | explanator |

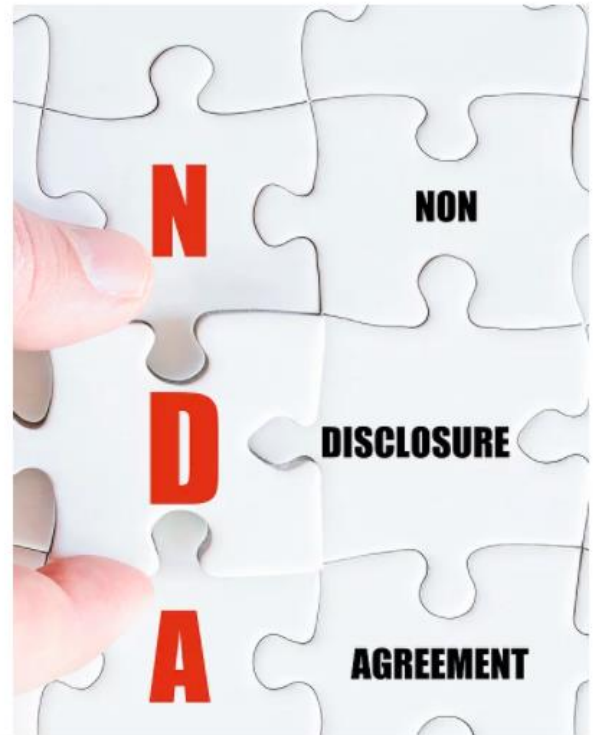


Figure 22 Final document generated

Conversation Transcript

Phase: Delivery Time

VisiRule saves a complete Q&A transcript of each session. You can view these or have them exported and integrated with your CRM or email system.

The screenshot shows a web browser window with the URL `visiruleexamples.com/vrapp/vrtest/webflex...`. The page displays a conversation transcript and a flowchart map.

Conversation Transcript:

Q: Does the lawn have moss or weeds?
 A: yes
 Q: is it full of weeds and/or moss with very little grass present?
 A: no
 Q: Is the grass very sparse with bare earth showing everywhere?
 A: no

Flowchart Map:

The flowchart starts with a green 'start' node. It branches into 'moss' and 'weeds or moss'. 'moss' leads to 'no' and 'yes'. 'weeds or moss' leads to 'no' and 'bare earth'. 'no' from 'moss' leads to 'brown patches', which leads to 'no' and 'level'. 'yes' from 'moss' leads to 'Second Rate Lawn'. 'no' from 'weeds or moss' leads to 'bare earth', which leads to 'yes' and 'Worn Out Lawn'. 'yes' from 'weeds or moss' leads to 'Second Rate Lawn'. 'level' leads to 'no', which leads to 'Second Rate Lawn'. 'bare patches' leads to 'no', which leads to 'Second Rate Lawn'. 'Worn Out Lawn' is a final outcome node.

Figure 23 Conversation transcript and map

User's Path through Chart

Phase: Delivery Time

VisiRule can show the user's path through the chart in real time. At the end of the session their journey is plain to see.

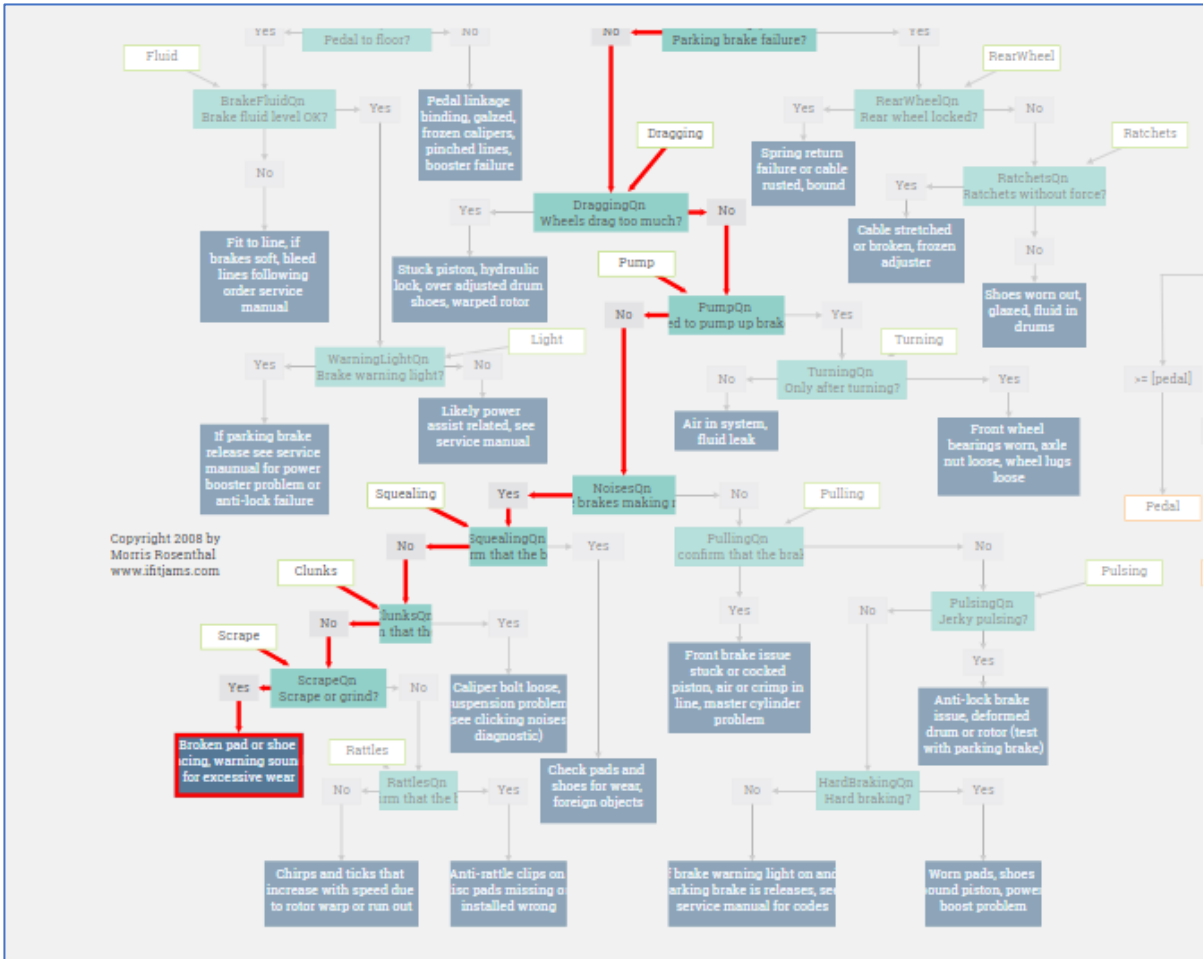
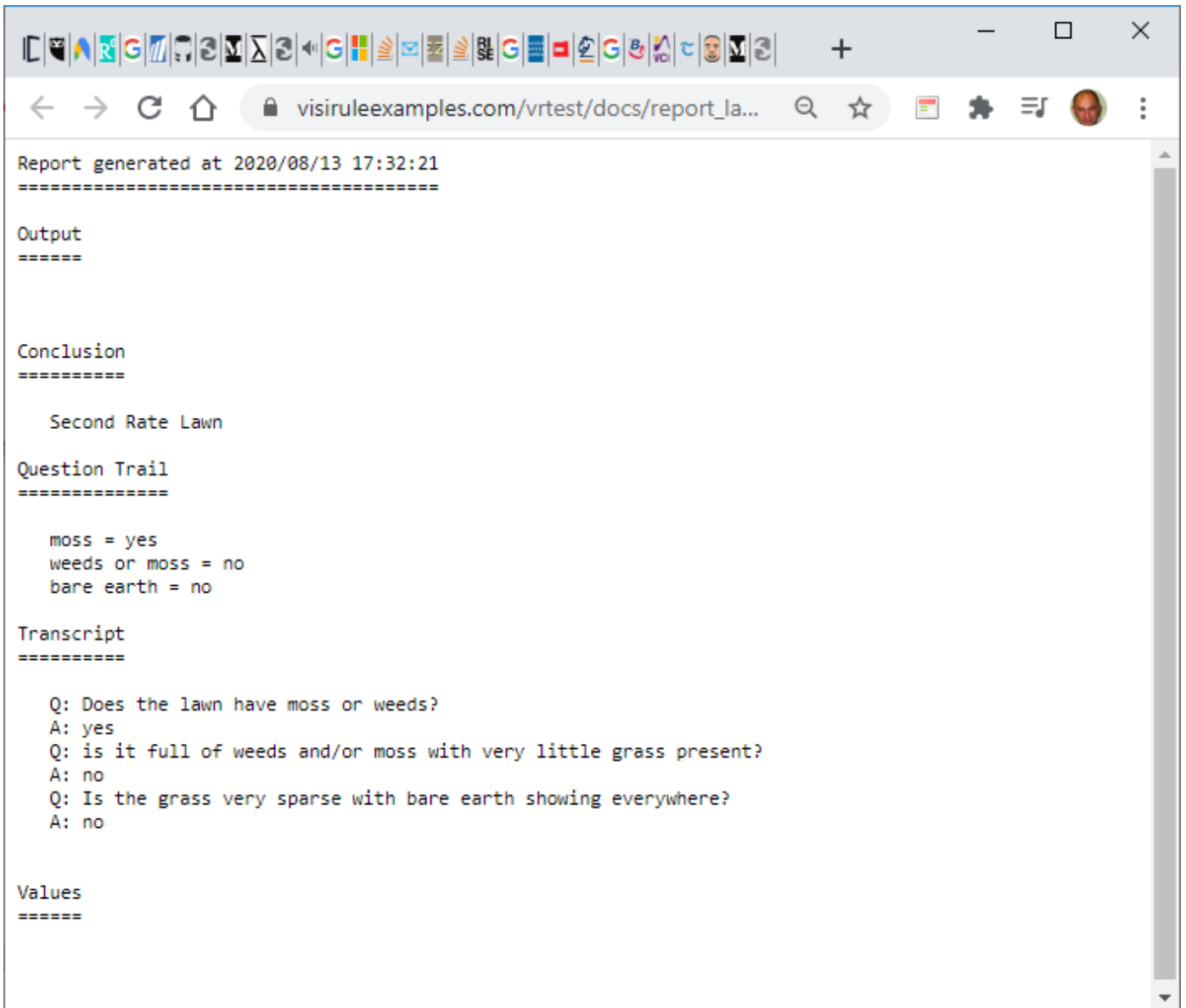


Figure 24 Computation path shown on original chart

Text File of Session

Phase: Delivery Time

VisiRule can create a record of each session as a text file including conclusion reached, the question trail and the session transcript.



```

Report generated at 2020/08/13 17:32:21
=====

Output
=====

Conclusion
=====

    Second Rate Lawn

Question Trail
=====

    moss = yes
    weeds or moss = no
    bare earth = no

Transcript
=====

    Q: Does the lawn have moss or weeds?
    A: yes
    Q: is it full of weeds and/or moss with very little grass present?
    A: no
    Q: Is the grass very sparse with bare earth showing everywhere?
    A: no

Values
=====

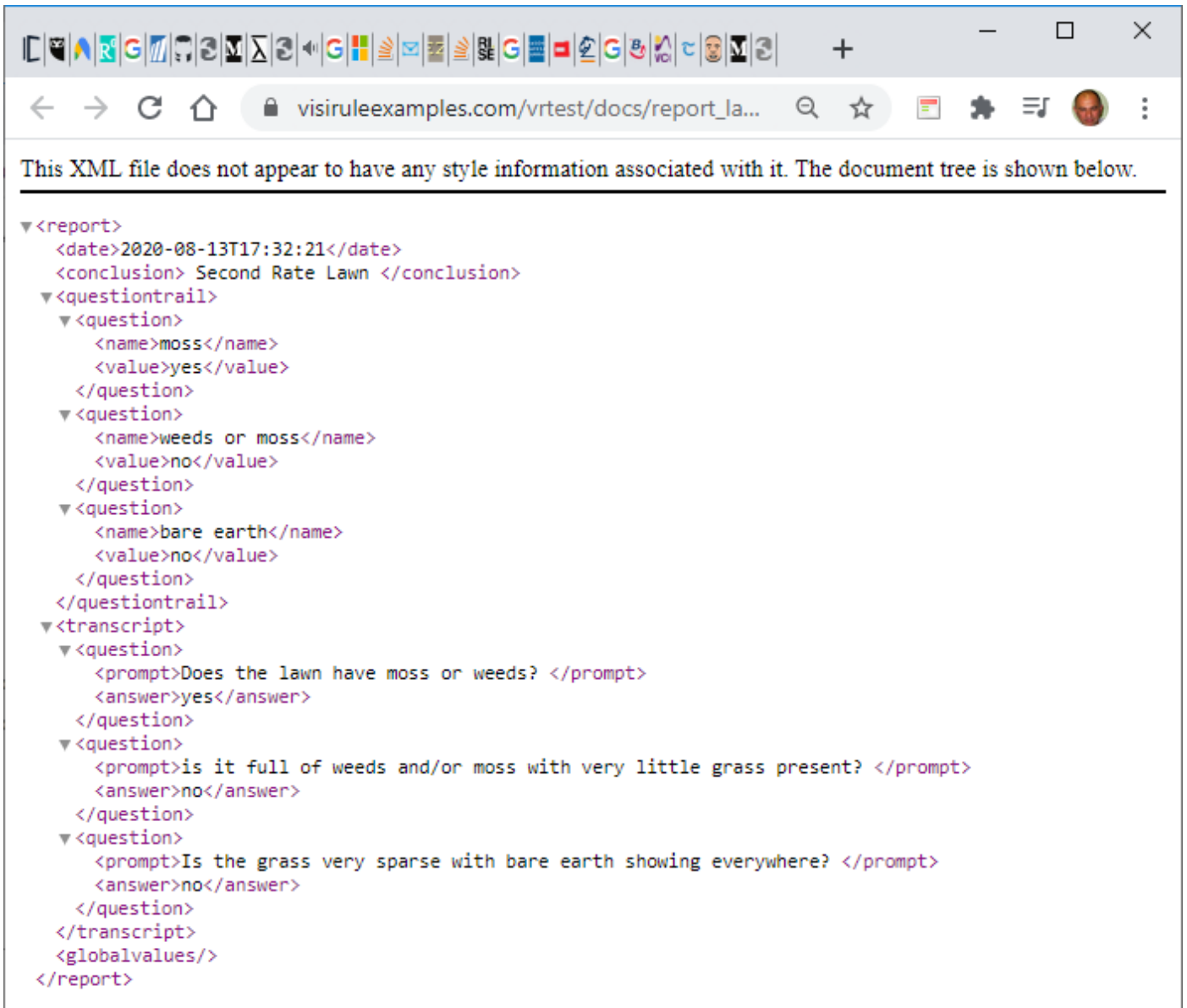
```

Figure 25 Text file of session

XML file of session

Phase: Delivery Time

VisiRule will create a record of each session as an XML data file with all the questions, answers and interim calculations and inferences computed for external consumption.



The screenshot shows a web browser window with the address bar displaying `visiruleexamples.com/vrtest/docs/report_la...`. Below the address bar, a message states: "This XML file does not appear to have any style information associated with it. The document tree is shown below." The XML document tree is displayed as follows:

```

<report>
  <date>2020-08-13T17:32:21</date>
  <conclusion> Second Rate Lawn </conclusion>
  <questiontrail>
    <question>
      <name>moss</name>
      <value>yes</value>
    </question>
    <question>
      <name>weeds or moss</name>
      <value>no</value>
    </question>
    <question>
      <name>bare earth</name>
      <value>no</value>
    </question>
  </questiontrail>
  <transcript>
    <question>
      <prompt>Does the lawn have moss or weeds? </prompt>
      <answer>yes</answer>
    </question>
    <question>
      <prompt>is it full of weeds and/or moss with very little grass present? </prompt>
      <answer>no</answer>
    </question>
    <question>
      <prompt>Is the grass very sparse with bare earth showing everywhere? </prompt>
      <answer>no</answer>
    </question>
  </transcript>
  <globalvalues/>
</report>

```

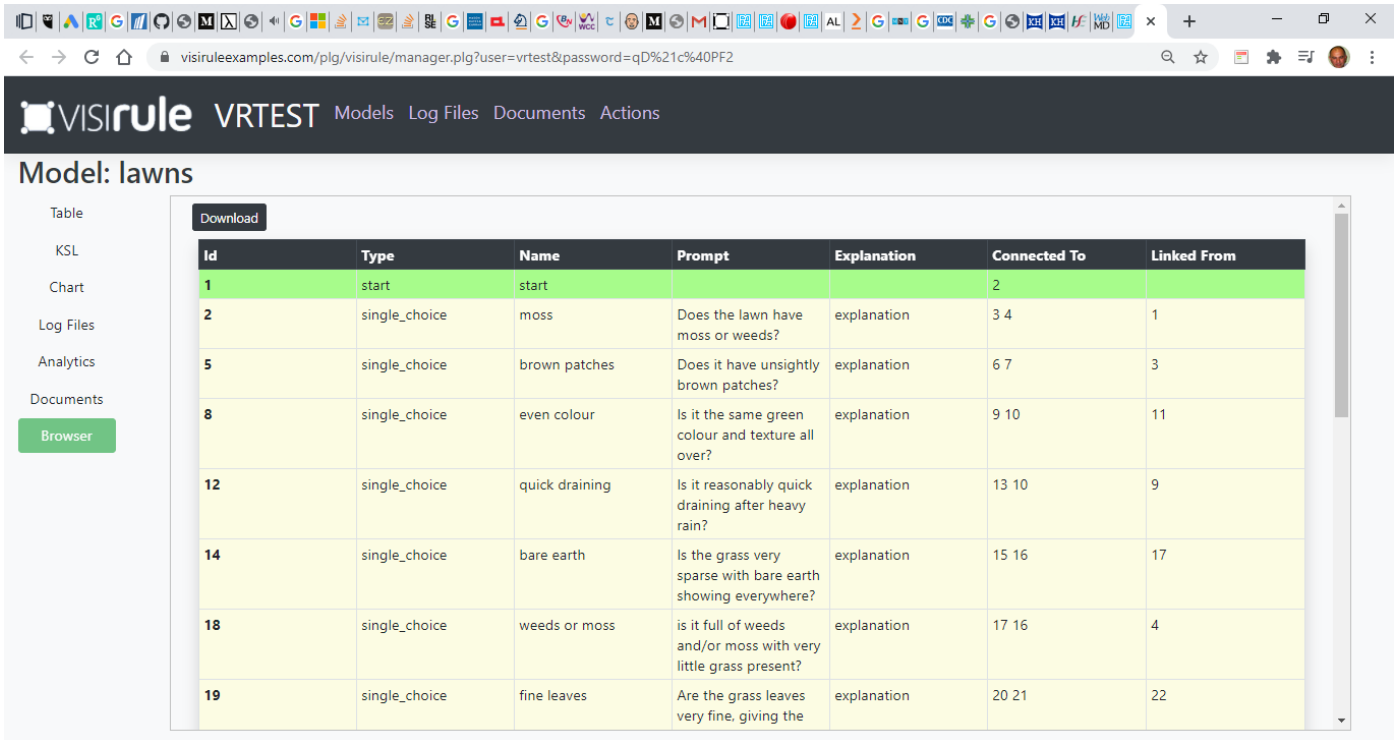
Figure 26 XL data created by session

VisiRule Manager

Phase: Post Delivery Time

The VisiRule Manager allows you to organize your charts online.

You can see various aspects of all your published charts.



The screenshot shows a web browser window displaying the VisiRule Manager interface. The browser address bar shows the URL: `visiruleexamples.com/plg/visirule/manager.plg?user=vrtest&password=qD%21c%40PF2`. The page title is "Model: lawns". The interface includes a navigation menu on the left with options: Table, KSL, Chart, Log Files, Analytics, Documents, and a "Browser" button. The main content area displays a table of charts with the following data:

| Id | Type | Name | Prompt | Explanation | Connected To | Linked From |
|----|---------------|----------------|---|-------------|--------------|-------------|
| 1 | start | start | | | 2 | |
| 2 | single_choice | moss | Does the lawn have moss or weeds? | explanation | 3 4 | 1 |
| 5 | single_choice | brown patches | Does it have unsightly brown patches? | explanation | 6 7 | 3 |
| 8 | single_choice | even colour | Is it the same green colour and texture all over? | explanation | 9 10 | 11 |
| 12 | single_choice | quick draining | Is it reasonably quick draining after heavy rain? | explanation | 13 10 | 9 |
| 14 | single_choice | bare earth | Is the grass very sparse with bare earth showing everywhere? | explanation | 15 16 | 17 |
| 18 | single_choice | weeds or moss | is it full of weeds and/or moss with very little grass present? | explanation | 17 16 | 4 |
| 19 | single_choice | fine leaves | Are the grass leaves very fine, giving the | explanation | 20 21 | 22 |

Figure 27 VisiRule Manager

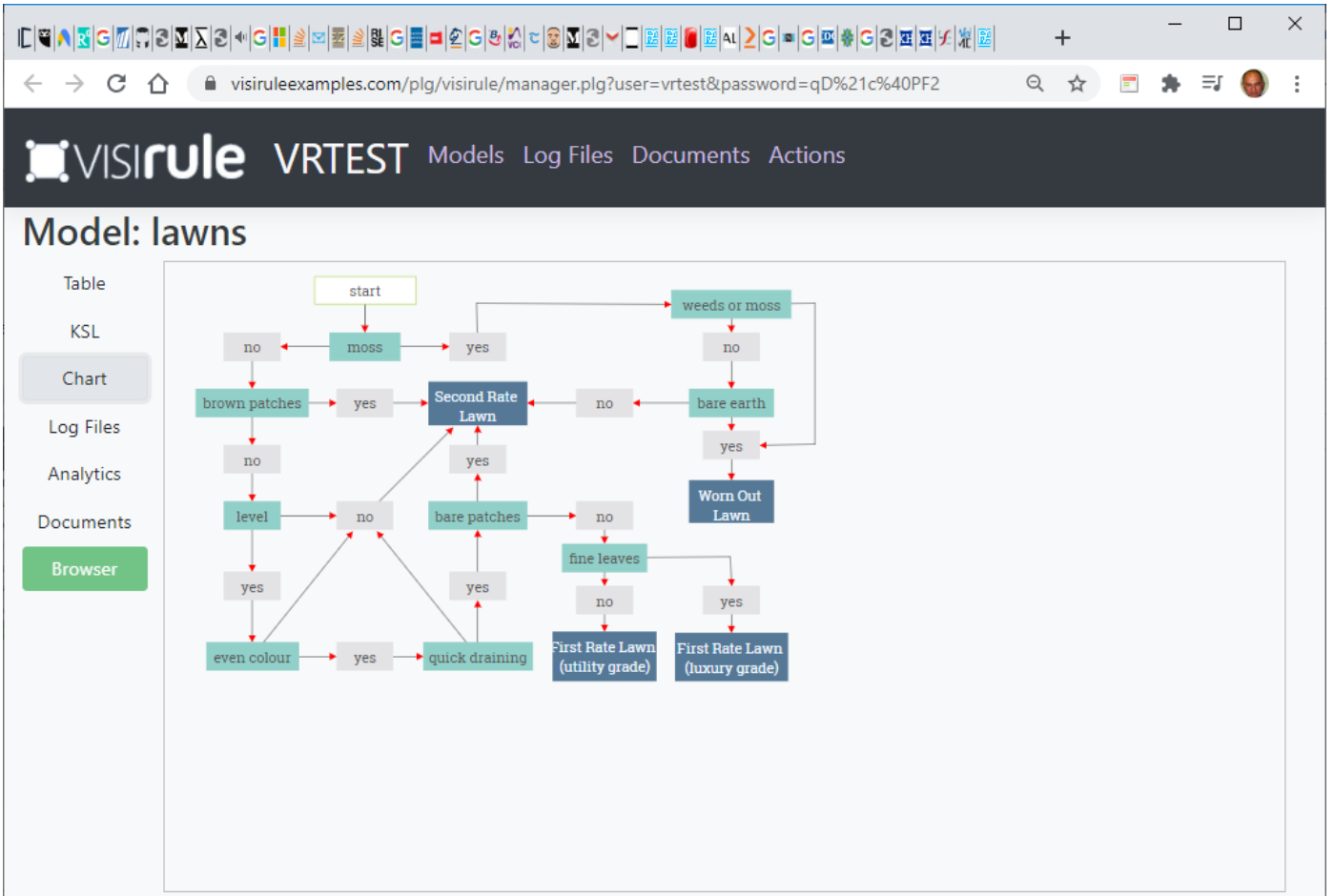


Figure 28 VisiRule Manager view of chart

VisiRule Analytics

Phase: Post Delivery Time

VisiRule Analytics allows you to see how your [intelligent decision tree flow charts](#) are being accessed by customers, staff and prospects. You can deliver your charts as [ChatBots](#) or web apps. Understanding how your charts are used, and by whom, helps you gain valuable insights into your current solutions.

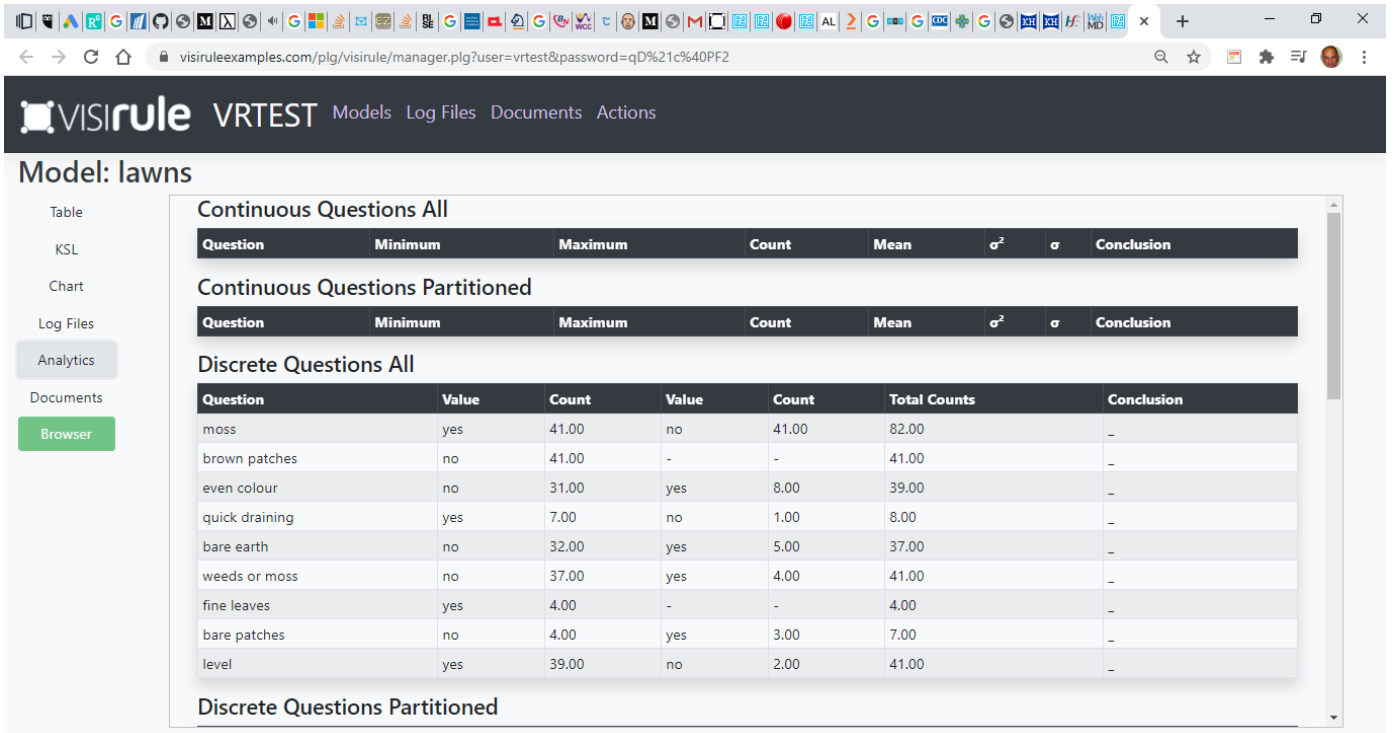


Figure 29 VisiRule Manager Analytics

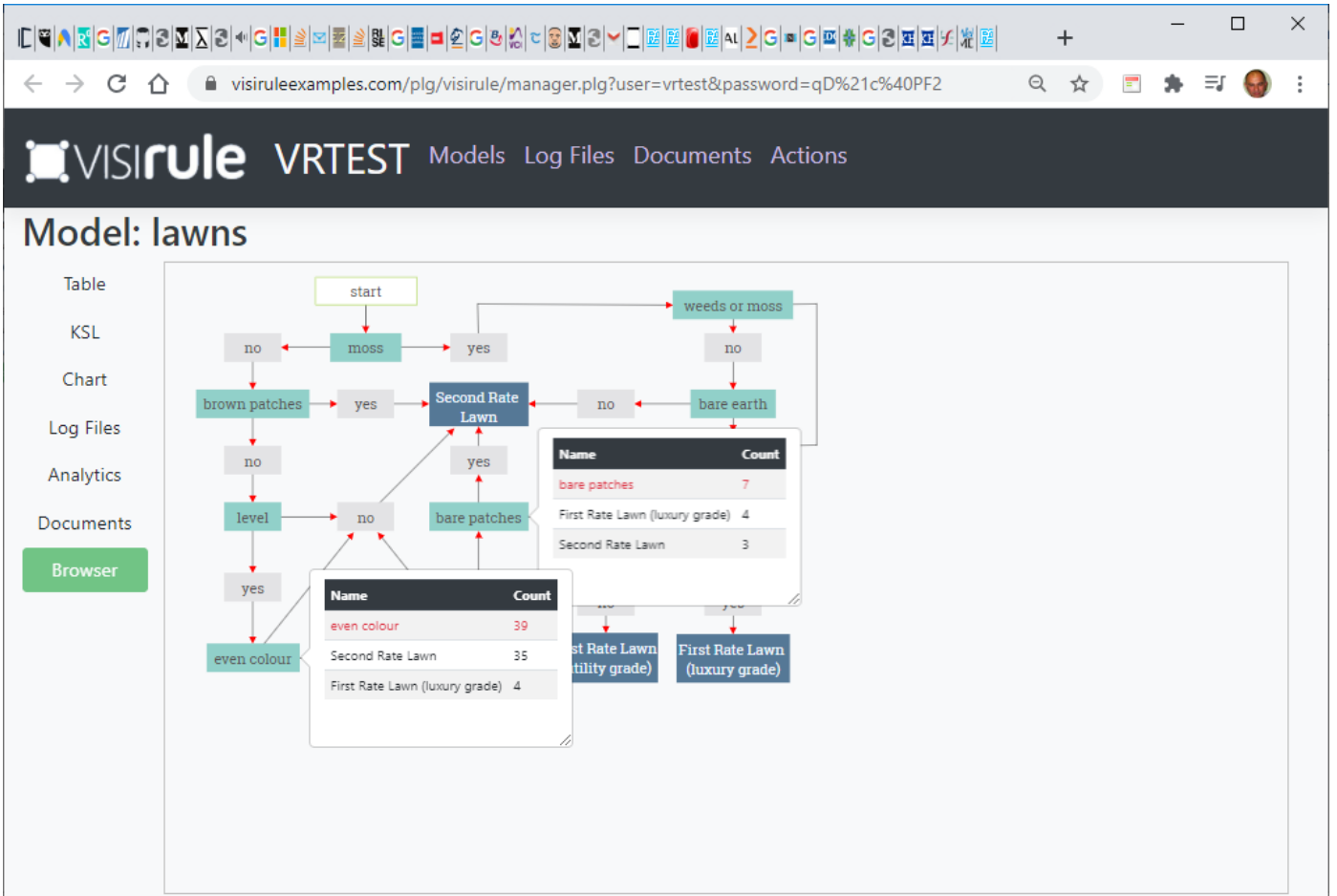


Figure 30 VisiRule Manager Inspector

VisiRule FastChart: machine learning driven chart creation

Phase: Pre-Development Time

VisiRule can use Data to generate its charts.

VisiRule FastChart uses PMML to communicate the induced decision tree and extra the contents and structure.

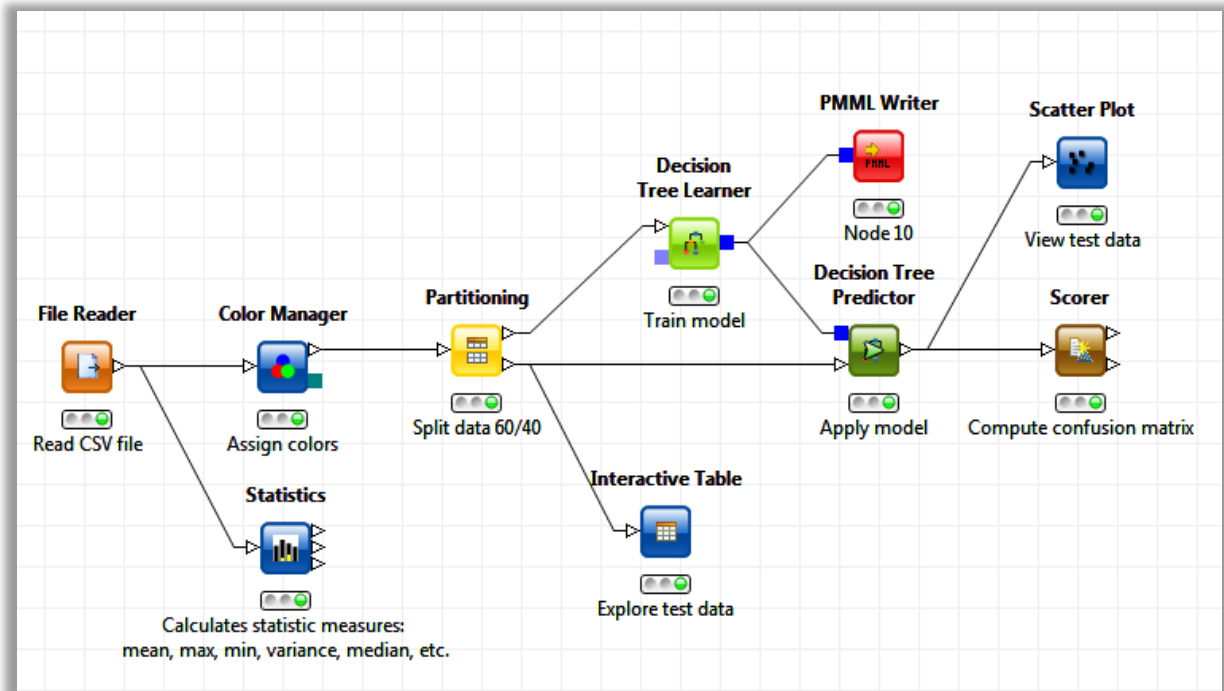


Figure 31 KNIME workflow for generating decision tree

The screenshot shows the FastChart application interface. The 'Data' pane on the left contains PMML code for a decision tree model. The 'Induced Rules' pane on the right lists the rules generated from the model. The 'Output' pane at the bottom shows a confusion matrix table.

```

bureaucracy : xml : [(version, '1.0'), (encoding, 'UTF-8')]
datadictionary : [(numberOfFields, '7')]
datafield : [(name, 'buying'), (optype, 'categorical'), (data
datafield : [(name, 'maint'), (optype, 'categorical'), (data
datafield : [(name, 'doors'), (optype, 'continuous'), (data
datafield : [(name, 'lug_boot'), (optype, 'categorical'), (da
datafield : [(name, 'persons'), (optype, 'categorical'), (data
datafield : [(name, 'class'), (optype, 'categorical'), (data
treemodel : [(modelName, 'DecisionTree'), (FunctionName, 'class
node : [(id, '0'), (score, 'unacc'), (recordCount, '518.0')]
node : [(id, '1'), (score, 'unacc'), (recordCount, '168.0')]
simplepredicate : [(field, 'persons'), (operator, 'les
scoredistribution : [(value, 'unacc'), (recordCount, '
scoredistribution : [(value, 'acc'), (recordCount, '0.
scoredistribution : [(value, 'vgood'), (recordCount, '
scoredistribution : [(value, 'good'), (recordCount, '
node : [(id, '2'), (score, 'unacc'), (recordCount, '350.0')]
node : [(id, '3'), (score, 'acc'), (recordCount, '115.0')]
    
```

Induced Rules:

```

persons
lessOrEqual(3.0) => unacc
greaterThan(3.0)
safety
equal(high) => acc
equal(low) => unacc
equal(med)
buying
equal(vhigh) => unacc
equal(high)
lug_boot
equal(small) => unacc
equal(med) => unacc
    
```

| row ID | unacc | acc | vgood | good |
|--------|-------|-----|-------|------|
| unacc | 753 | 27 | 0 | 0 |
| acc | 90 | 242 | 52 | 46 |
| vgood | 0 | 0 | 0 | 0 |
| good | 0 | 0 | 0 | 0 |

Figure 32 PMML imported into FastChart

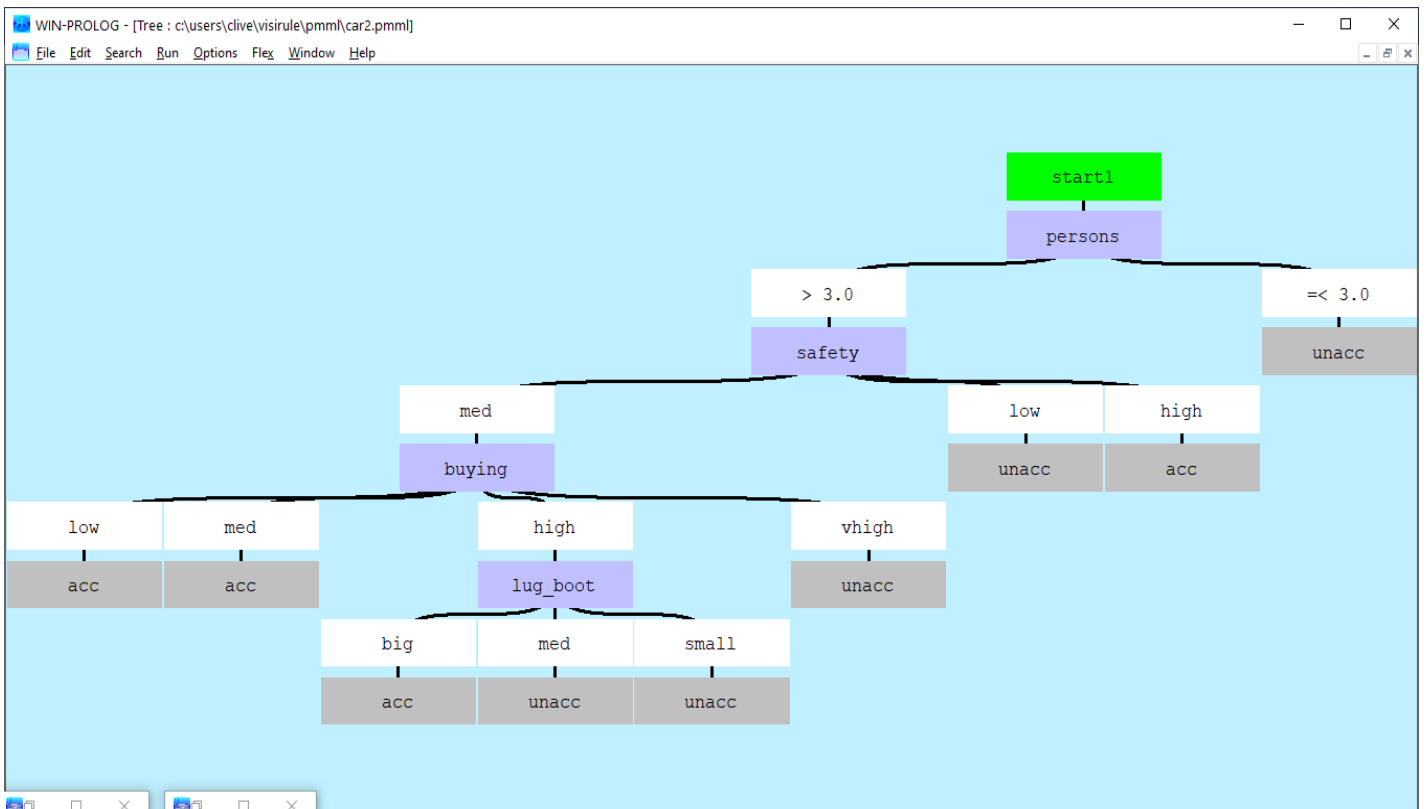


Figure 33 Tree view of imported PMML

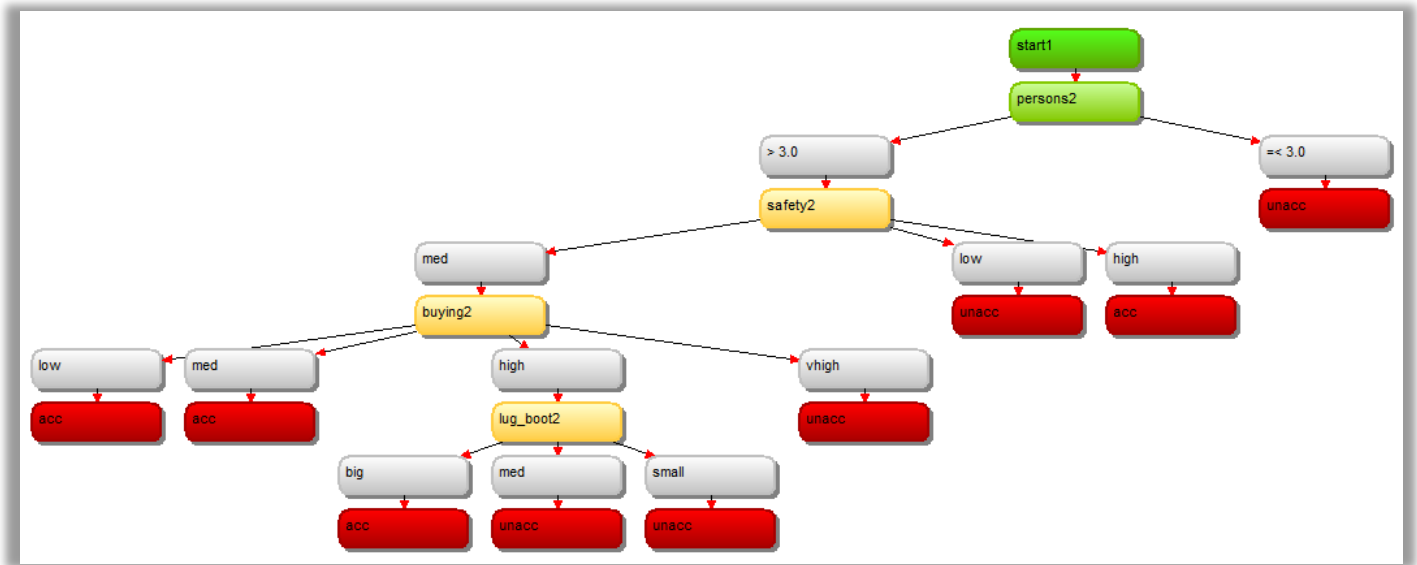


Figure 34 Graphical view of imported PMML decision tree

```

accuracy matrix = c:\users\clive\visirule\pmml\car2.acc
row ID      | TruePositives | FalsePositive | TrueNegatives | FalseNegative | Recall      | Precision  | Sensitivity | Specificity | F-measure  | Accuracy  | Cohen's ka
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
unacc      | 753           | 90            | 340           | 27            | 0.96538461538 | 0.89323843416 | 0.96538461538 | 0.79069767441 | 0.92791127541 | 0.82231404958 | 0.62345670
acc        | 242           | 27            | 753           | 188           | 0.56279069767 | 0.89962825278 | 0.56279069767 | 0.96538461538 | 0.69241773962 | 0.82231404958 | 0.62345670
vgood     | 0             | 52            | 1158          | 0             | 0.0            | 0.0          | 0.95702479338 | 0.95702479338 | 0.95702479338 | 0.82231404958 | 0.62345670
good      | 0             | 46            | 1164          | 0             | 0.0            | 0.0          | 0.96198347107 | 0.96198347107 | 0.96198347107 | 0.82231404958 | 0.62345670
Overall    |               |               |               |               |               |               |               |               |               |               |               |

confusion matrix = c:\users\clive\visirule\pmml\car2.cnf
row ID      | unacc  | acc    | vgood  | good   |
-----|-----|-----|-----|-----|
unacc     | 753    | 27     | 0       | 0       |
acc       | 90     | 242    | 0       | 0       |
vgood    | 0      | 0      | 0       | 0       |
good     | 0      | 0      | 0       | 0       |
Matrices
  
```

Figure 35 Basic chart statistics

ChatBot Delivery

Phase: Delivery Time

You can use your VisiRule chart to generate a ChatBot where the logic is asked one question at a time.

The user can enter their own queries at any time which you can handle using the NLP tools in VisiRule. This allows you to respond to any arbitrary text input by the user.



The screenshot shows a chatbot interface titled "Nhs ChatBot". It features a light blue question box with the text: "Is the position covered under the Rehabilitation of Offenders Act 1974 (Exceptions) Order 1975 (as amended)?" Below the question are two radio button options: "yes" and "no". A yellow response box contains the text: "Most individuals are likely to be eligible by virtue of section 13 i.e. any employment which is concerned with the provision of health services and which is of such a kind as to enable the holder to have access to persons in receipt of such services in the course of their normal duties. However, there are other provisions within the Exceptions Order that may be relevant. Please refer to the legislation available at: www.legislation.gov.uk" Below the response box is a link: "The original chart can be viewed at: [Original Flow Chart](#)". At the bottom of the interface is a white input field and a row of four buttons: "OK" (blue), "Start Again" (grey), "Why?" (green), and "How?" (green).

Figure 36 VisiRule chatbot

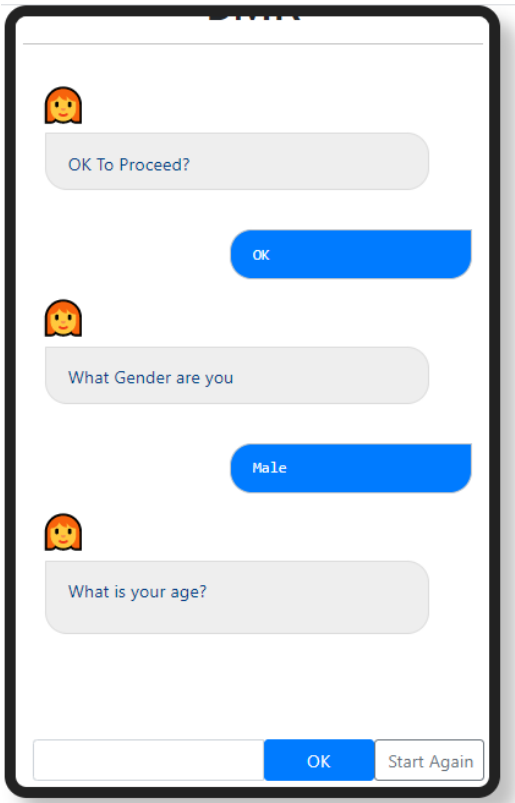


Figure 37 VisiRule chatbot on mobile phone

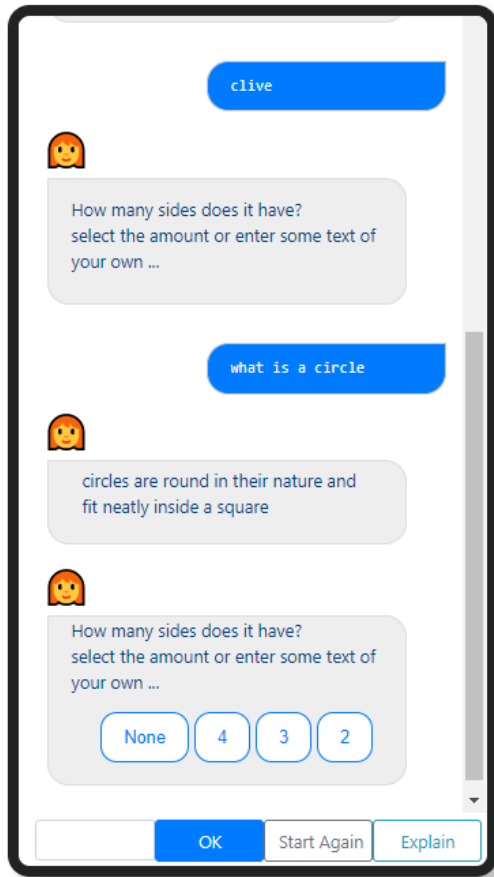
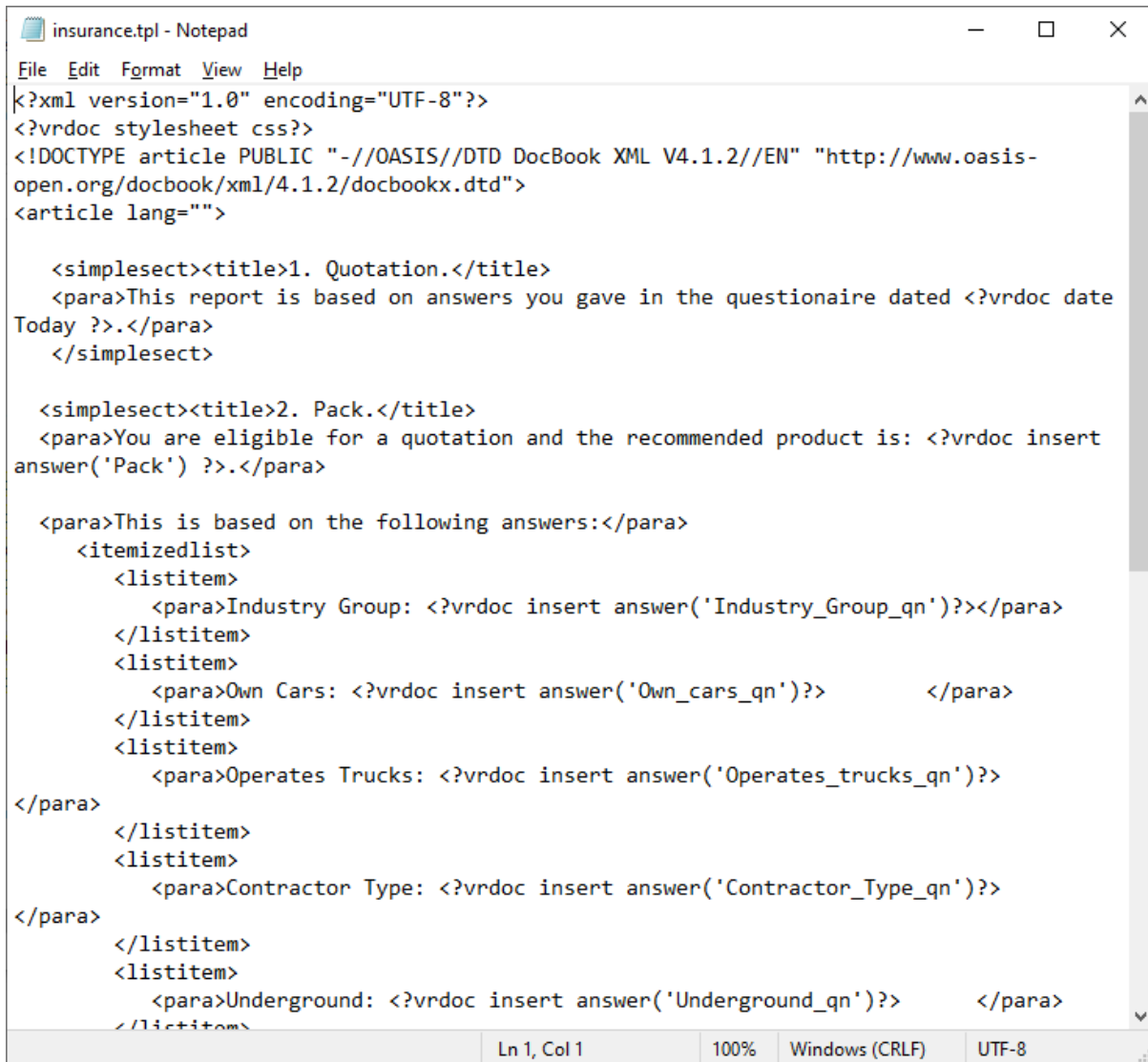


Figure 38 VisiRule chatbot on mobile phone conversation

Master Template

Phase: Development Time

You can generate document instances by using a Master Document Template either as XML or RTF with suitable tags to indicate where the results of the VisiRule session are to be used and how.



```

insurance.tpl - Notepad
File Edit Format View Help
<?xml version="1.0" encoding="UTF-8"?>
<?vrdoc stylesheet css?>
<!DOCTYPE article PUBLIC "-//OASIS//DTD DocBook XML V4.1.2//EN" "http://www.oasis-
open.org/docbook/xml/4.1.2/docbookx.dtd">
<article lang="">

  <simplesect><title>1. Quotation.</title>
  <para>This report is based on answers you gave in the questionnaire dated <?vrdoc date
Today ?>.</para>
  </simplesect>

  <simplesect><title>2. Pack.</title>
  <para>You are eligible for a quotation and the recommended product is: <?vrdoc insert
answer('Pack') ?>.</para>

  <para>This is based on the following answers:</para>
  <itemizedlist>
    <listitem>
      <para>Industry Group: <?vrdoc insert answer('Industry_Group_qn')?></para>
    </listitem>
    <listitem>
      <para>Own Cars: <?vrdoc insert answer('Own_cars_qn')?> </para>
    </listitem>
    <listitem>
      <para>Operates Trucks: <?vrdoc insert answer('Operates_trucks_qn')?>
</para>
  </listitem>
  <listitem>
    <para>Contractor Type: <?vrdoc insert answer('Contractor_Type_qn')?>
</para>
  </listitem>
  <listitem>
    <para>Underground: <?vrdoc insert answer('Underground_qn')?> </para>
  </listitem>
  </itemizedlist>

```

Figure 39 Document template

Generated Documents

Phase: Delivery Time

You can supply a Master Template which will then be used to generate document instances based on the answers gathered during a VisiRule session.

This allows formatted documents to be produced which contain the contents of a VisiRule session plus any conclusions formed by the logic in the chart.

Templates can be defined using RTF or XML.

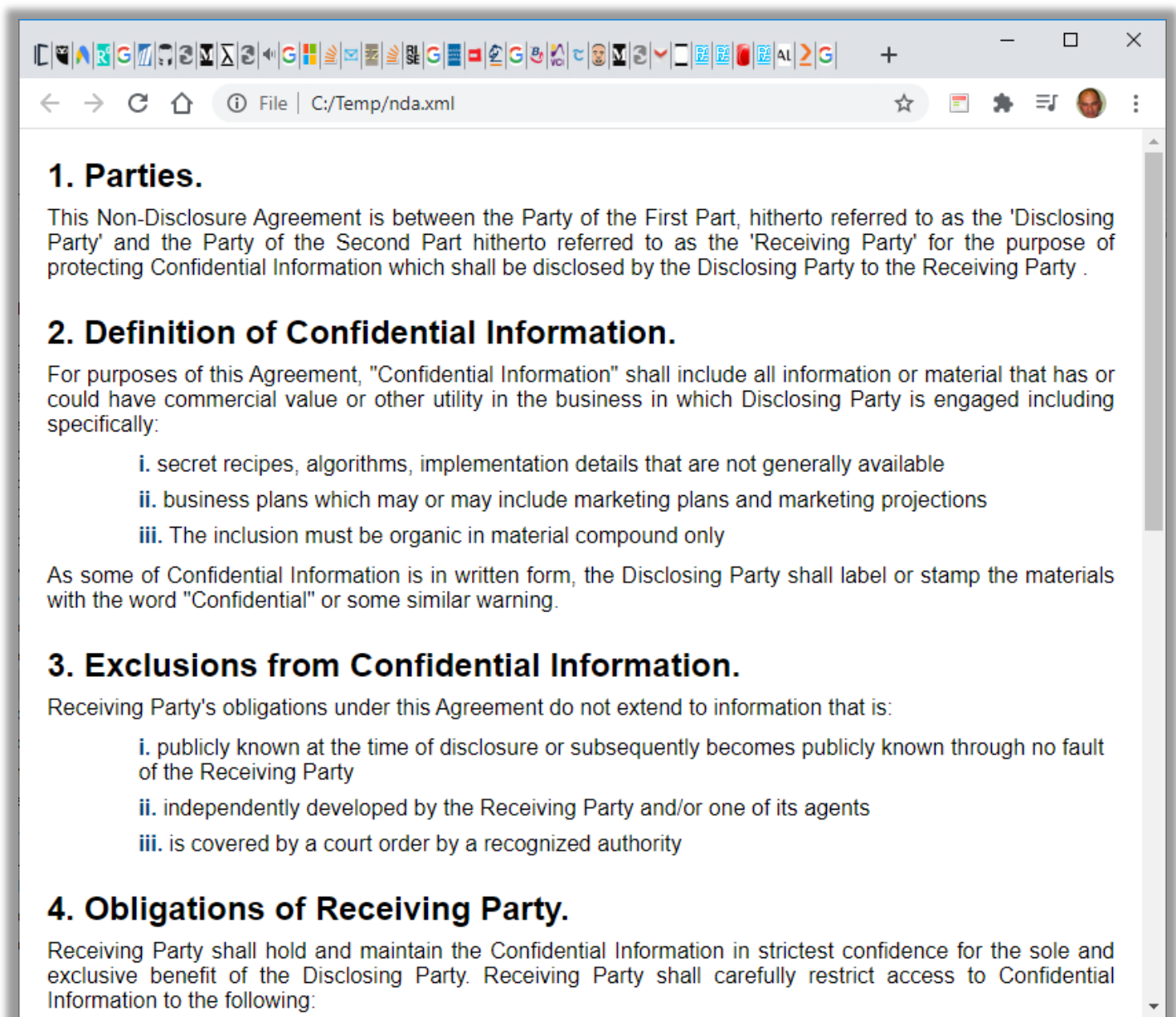


Figure 40 Generated document

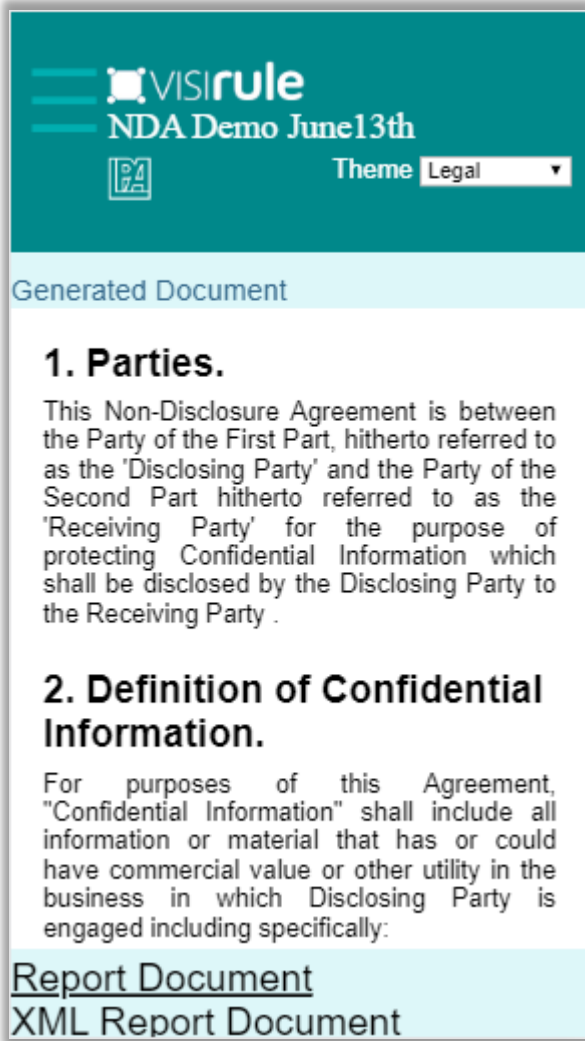


Figure 41 Generated document on mobile phone

Document Generation Test

Upload Template File

Choose File No file chosen

Upload file

Data Entry

User Id:

Templater:

Document Type:

Flex File:

Start Goal:

Conclusion:

Question Data:

Document

Figure 42 Document template uploader

Results

Phase: Delivery Time

At the end of a session, you can output the result including any calculations or text used.



The screenshot shows a web browser window with the URL `visiruleexamples.com/vrapp/lpaexamples/webflex.EXE`. The page header features the VISIRule logo, 'Insurance Demo', and navigation options like 'Restart' and 'Go Back'. The main content is a 'Pre-Sales Advisory Report' with the following sections:

- Industry Group:** Contractor
- Class:** Heating AC
- Quote Clearance:** Eligible for quotation, Recommended Product: SmallPak
- Product Notes:** 300 Not eligible for employment practices liability (EPLI) coverage
- Risk Features:**
 - 600 Operates trucks
 - 400 Employees use own cars in insured's business
 - 300 Sells/installs products using liquified gas as fuel source
 - 100 Underground work or excavation
- Mandatory Endorsements:**
 - AE500 Asbestos exclusion
 - UN200 Underground/excavation coverage
- Optional Endorsements:**
 - EV200 Employee-owned vehicles coverage
 - ET400 Employee tools coverage

Figure 43 Web based conclusion output

Optional Endorsements

EV200 Employee-owned vehicles coverage
 ET400 Employee tools coverage

Best Practices

500 Written safety rules
 800 Written inspection procedures, including restoration of utilities
 700 Detailed records on all jobs completed
 900 Check with utility companies before digging
 600 Get certificates from all subcontractors to verify GL and WC coverage
 501 Motor vehicle records obtained on all drivers annually
 300 Criminal background checks on all employees

Checking Logs

Product Notes

product_note_300 was included by rule: exclu_epli2

Risk Features

id_600 was included by rule: operates_trucks_check
 id_400 was included by rule: own_cars_check
 id_300 was included by rule: liquifiedgas_check
 id_100 was included by rule: underground_check

Mandatory Endorsements

mand_end_ae500 was included by rule: asbestos_exclusion
 mand_end_un200 was included by rule: underground_coverage

Optional Endorsements

Figure 44 Extended output page

VisiRule Chart Uploader/Publisher

Phase: Development Time

You can upload your chart to the web so that it can be published and shared with your colleagues and clients. VisiRule will build an interactive multi-page web questionnaire where answers to one set of questions are used to compute the next set across multiple pages.

The screenshot shows the 'VisiRule Web Upload' dialog box with the following fields and content:

- Server URL: visiruleexamples.com
- User name: vrtest
- Password: xxxxxxxx
- VisiRule Name: process_generate_loan
- Title: PGL
- Buttons: VisiRule, Chatbot, Manager
- VisiRule File list:
 - Untitled-0
 - c:\users\clive\downloads\loandemos\loan1.vsr
 - c:\users\clive\downloads\loandemos\rev1_loan1.vsr
 - c:\users\clive\downloads\loandemos\rev1_loan.vsr
 - c:\users\clive\downloads\cliveswork\miscvsr_charts\inline_statem
 - c:\users\clive\downloads\cliveswork\miscvsr_charts\bmr.vsr
 - c:\users\clive\downloads\loandemos\process_generate_loan.vsr
 - c:\users\clive\downloads\cliveswork\miscvsr_charts\date.vsr
- Start goal list:
 - start_accept
 - main_start
 - start1

Figure 45 VisiRule Upload & Publish Dialog

Client Side HTML/JS Delivery

Phase: Development Time

The VSR->HTML code generator takes one or more charts and generates an XML data structure which contains all their nodes and links.

The VisiRule JavaScript rules engine walks through the XML evaluating each node and asking questions when required to the user. The engine maintains a stack of the questions and answers already executed and allows the user to scroll back through the computation and change a previous answer. This creates a new computation in effect which takes the user down a different branch of the logic.

The engine allows for execution in the browser, on mobile devices - indeed anywhere that JavaScript can run with NO CONNECTION to a server required. VisiRule charts delivered locally are self-contained and can even be embedded within emails and documents.

By delivering as HTML and JavaScript, the appearance can be easily customised, tweaked, enhanced, simply by editing the styles in the CSS style sheet or augmenting the HTML with additional JavaScript code. This greatly simplifies the run-time delivery of charts.

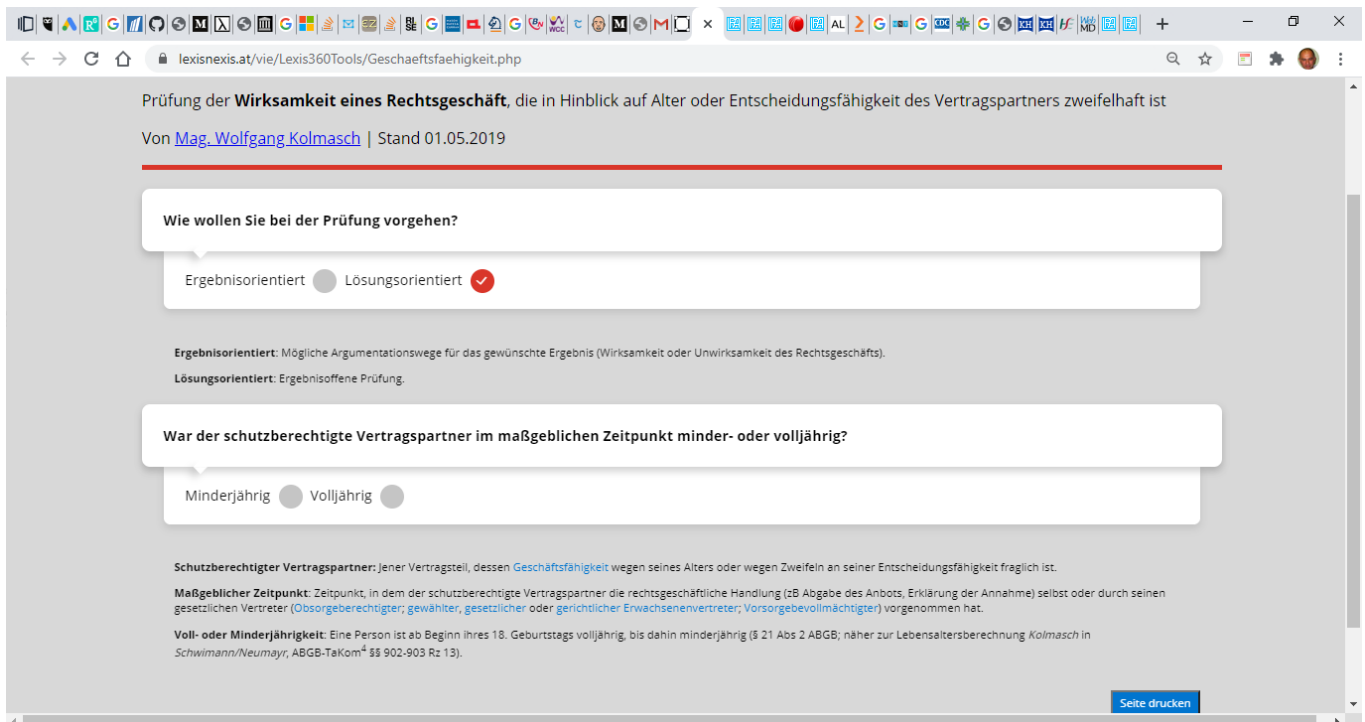


Figure 46 VisiRule HTML running locally

lawns5

Run

Does the lawn have moss or weeds?

- no
- yes

is it full of weeds and/or moss with very little grass present?

- no
- yes

Figure 47 Sample HTML page generated by VisiRule HTML compiler