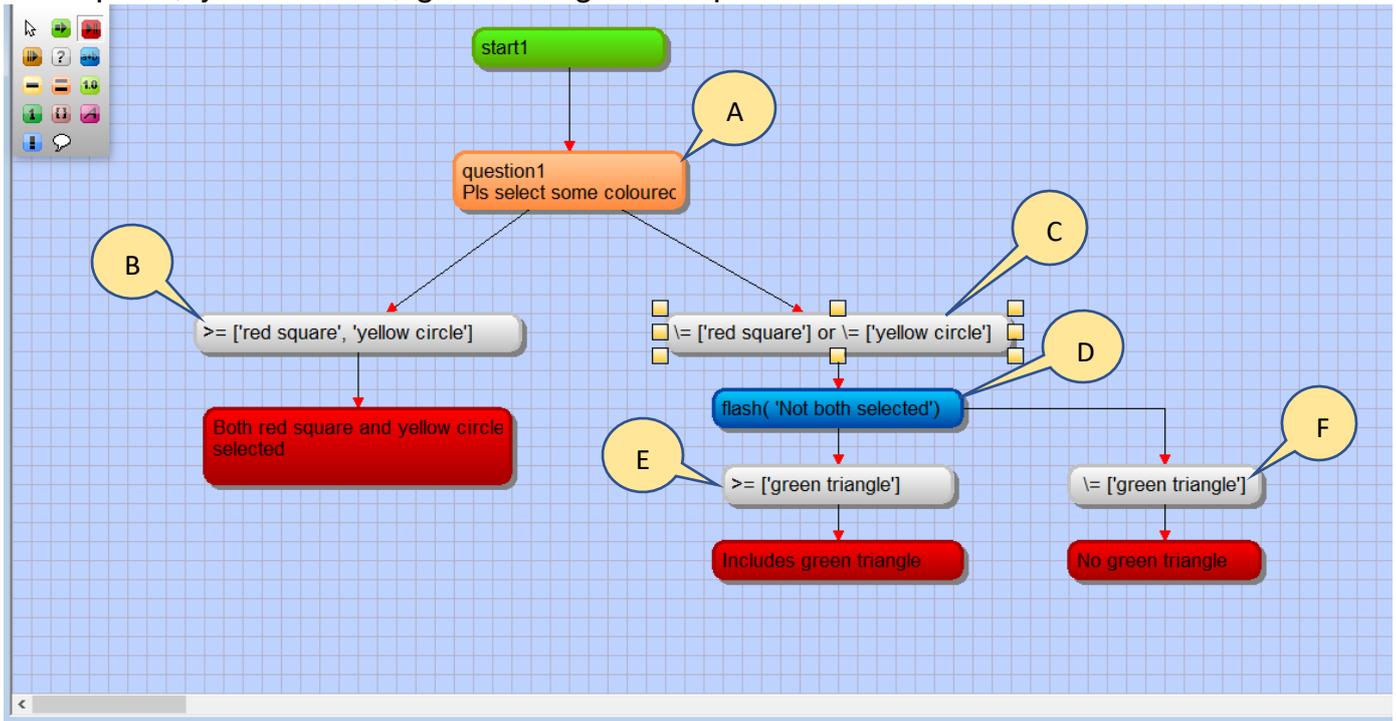


'red square', 'yellow circle', 'green triangle' example



A basic Multi-choice example ... red square

- 1 question (multi-choice)
- 4 expressions
- 3 conclusions

In the above chart, we ask a multi-choice (multiple selections) question and then process the answer; this example uses 2 Comparison Operators (>= and \=). It also uses the logical operator 'or' within some compound logic, a simple code box, and it uses structured branching.

### A] question1

This is a multi-choice question which has 2 expressions hanging off of it; i.e. 2 branches to be explored.

### B] >= ['red square', 'yellow circle']

This is an expression which checks to see if the answer contains both 'red square' and 'yellow circle'

1] The LHS is empty, i.e. there is nothing before the Comparison Operator, so VisiRule knows we are using the last question

2] >= is a Comparison Operator which means that the LHS must contain, or equal, all the items in the RHS for the expressions to succeed

3] [ and ] are used to contain sets

4] ['red square', 'yellow circle'] denotes the set containing 2 items. Note: items are quoted as they include spaces

This expression will succeed if the user has chosen both items and then the conclusion will be reached.

If the expression fails, VisiRule will try the other branch which is designed to succeed when the first expression fails.

**C]**  $\backslash=$  ['red square'] or  $\backslash=$  ['yellow circle']

This is an expression which checks to see that the answer does NOT contain both 'red square' and 'yellow circle'; i.e. one of them is missing

1] The LHS is empty, there is nothing before the Comparison Operator, so VisiRule knows we are using the last question

2] The RHS is a compound term which contains 2 expressions linked by an 'or' which is a logical operator

3]  $\backslash=$  is a Comparison Operator which means that the LHS must not contain the item on the RHS; so  $\backslash=$  ['red square'] means the answer does not contain 'red square'

4]  $\backslash=$  is a Comparison Operator which means that the LHS must not contain the item on the RHS; so  $\backslash=$  ['yellow circle'] means the answer does not contain 'yellow circle'

5] This is a COMPOUND expression which uses OR and requires at least one of them to succeed, which is true so long as we don't contain both items.

This expression will succeed if the user has not chosen both items and then the next node visited. You can think of  $\backslash=$  as being 'disjoint'

**D]** flash( 'Not both selected')

This is a code box which will 'flash' a short message

Note: after [C], we have 2 branches which are both to be tried – this is structured branching as we are already pursuing the Right-Hand branch of the first set of expressions.

**E]**  $\geq=$  ['green triangle']

This is an expression which checks to see if the answer contains 'green triangle'

1] The LHS is empty, i.e. there is nothing before the Comparison Operator, so VisiRule knows we are using the last question

2]  $\geq=$  is a Comparison Operator which means that the LHS must contain all the items in the RHS for the expressions to succeed

3] [ and ] are used to contain sets

4] ['green triangle'] denotes the set containing 1 item

This expression will succeed if the user has chosen the item and then the conclusion will be reached.

If the expression fails, VisiRule will try the other branch which is designed to succeed when the first expression fails.

**F**  $\neq$  ['green triangle']

This is an expression which checks to see if the answer does NOT contain 'green triangle'

1] The LHS is empty, i.e. there is nothing before the Comparison Operator, so VisiRule knows we are using the last question

2]  $\neq$  is a Comparison Operator which means that the LHS must not contain the item on the RHS; so  $\neq$  ['green triangle'] means the answer does not contain 'green triangle'

This expression will succeed if the user has not chosen the item and then the conclusion will be reached.

Three items are mentioned in expressions relating to this question namely:

'red square', 'yellow circle', 'green triangle'

So VisiRule will automatically create a question containing these 3 items

Note:

When analysing sets of answers, the  $\neq$  operator can be considered as the DISJOINT operator.

i.e.  $A \neq B$  succeeds if A and B are disjoint .... i.e. they share NO common members

So

? language  $\neq$  [French]

Would succeed if given a question called, language, the user had not selected the French option