Write a Prolog Program for fruit and its color using Back Tracking.

AIM

To write a Prolog program that represents fruits and their colors, and to use backtracking to retrieve all possible fruit–color combinations.

ALGORITHM

1. Start the program.
2. Define facts in the form fruit_color(Fruit, Color). for different fruits.
3. Load the program into the Prolog interpreter.
4. Query using variables (e.g., fruit_color(Fruit, Color).) to retrieve results.
5. Prolog will return the first solution.
6. Press ; to backtrack and get more solutions.
7. Stop.

```
% Facts
fruit_color(apple, red).
fruit_color(banana, yellow).
fruit_color(grape, green).
fruit_color(orange, orange).
fruit_color(blueberry, blue).
```

OUTPUT:

```
?-
% c:/Users/gayathri/Downloads/furit_colour.pl compiled 0.00 sec, 5 clauses
?- fruit_color(apple, Color).
Color = red.

?- fruit_color(Fruit, yellow).
Fruit = banana.

?- fruit_color(Fruit, Color).
Fruit = apple,
Color = red ;
Fruit = banana,
Color = yellow ;
Fruit = grape,
Color = green ;
Fruit = Color, Color = orange ;
Fruit = blueberry,
Color = blue.

?-
```

RESULT:

The program successfully returns fruit–color pairs, and with backtracking, Prolog provides all possible matches one by one.