TASK 2 – Declarative programming

A knowledge base contains information about students in a class, the colours they like and the colours they do not like. A declarative programming language is used to query the knowledge base.

Some clauses in the knowledge base are shown.

```
01 person(luke).
02 person(alice).
03 person(taylor).
04 person(nadia).
05 colour(blue).
06 colour(red).
07 colour(green).
08 colour(yellow).
09 likes_colour(alice, yellow).
10 likes_colour(alice, blue).
11 dislikes_colour(taylor, red).
12 dislikes_colour(nadia, green).
```

Key focus:

Declarative programming

Clause	Explanation
01	Luke is a person
07	Green is a colour
09	Alice likes the colour yellow
11	Taylor does not like the colour red

TASK 2.1

Two new students are joining the class: Mehrdad and Nigel. They need to be added to the knowledge base.

Four further colours: pink, orange, purple and black need to be added to the knowledge base.

Write clauses to add the two new students and the new colours to the knowledge base.

```
person(luke).
person(alice).
person(taylor).
person(nadia).
person(mehrdad).
person(nigel).
colour(blue).
colour(red).
colour(green).
colour(yellow).
colour(pink).
colour(orange).
colour(purple).
colour(black).
likes_colour(alice, yellow).
likes_colour(alice, blue).
dislikes_colour(taylor, red).
dislikes_colour(nadia, green).
```

TASK 2.2

Add a clause that states Nadia likes the colour red.

```
likes_colour(nadia, red).
```

TASK 2.3

Add a clause that states Mehrdad does not like the colour pink.

```
dislikes_colour(mehrdad, pink).
```

TASK 2.4

Write a goal to find all the colours that a person likes.

```
?- likes_colour(nadia, Color).
Color = red.

?- likes_colour(Student, Color).
Student = alice,
Color = yellow ;
Student = alice,
Color = blue ;
Student = nadia,
Color = red.
```