

Flag Identifier Circuit

PC/CP220 Revised Project Phase I

Terry Sturtevant

Fall 2015

Description

Several flags of the world consist of a set of parallel stripes of different colours. In some cases the stripes are vertical, while in others they are horizontal. The **Flag Identifier Circuit** is designed to identify the possible countries which have a flag with a certain combination of coloured stripes in a certain orientation (either horizontal or vertical). There may be cases where more than one country is possible, and there may be combinations which fit no actual flag.

The flags to be included are as follows:

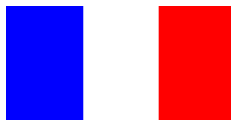


Figure 1: France

Fall 2015



Figure 2: Netherlands



Figure 3: Russia

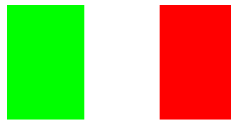


Figure 4: Italy



Figure 5: Hungary



Figure 6: Bulgaria



Figure 7: Austria



Figure 8: Belgium



Figure 9: Germany

Inputs

The **Flag Identifier Circuit** will have seven inputs. Six of the inputs will be for colour, and they will be:

1. Black
2. White
3. Red
4. Blue
5. Green
6. Yellow

where a '1' indicates the colour is present in the flag and a '0' indicates it isn't. The seventh input will be for **orientation**, and it will be '1' if the stripes are vertical and '0' if the stripes are horizontal.

Outputs

The **Flag Identifier Circuit** will have at least nine outputs. They will be

1. Belgium
2. Germany
3. Bulgaria
4. France
5. Hungary
6. Italy
7. Austria
8. Netherlands
9. Russia

An output will be a '1' if the country has a flag of the input colours and orientation and '0' otherwise.

Notes

- Where more than one country have the same colour combination and orientation, all of those that are possible will have their outputs set to '1'.
- Where no country has the chosen colour combination and orientation, all of the outputs will be set to '0'.
- **Clarification:** If the inputs include any colours *not* in a country's flag, then the output for that country will be '0'. (In other words, the flag cannot contain any colours *other* than the ones selected.)