

Run Length Encoding

Uses **frequency/data** pairs to compress data.

Applying an RLE algorithm is a **lossless** compression method.

Run Length Encoding

BBBBBBWWWWBBWW

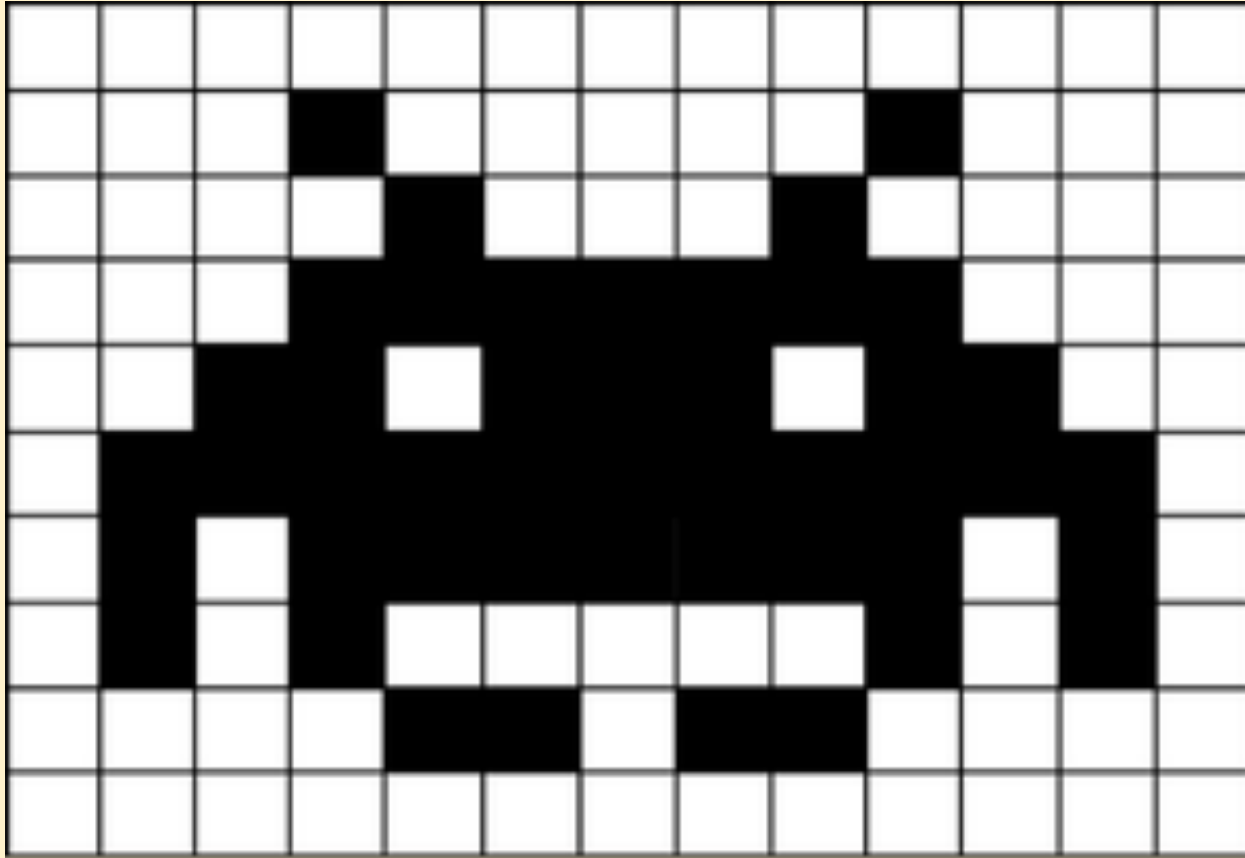
RRRGGGGGBGGRGB

Run Length Encoding

3 B 2 G 7 R 1 B 5 R

3 1 2 0 9 1 5 0 1 1 1 0

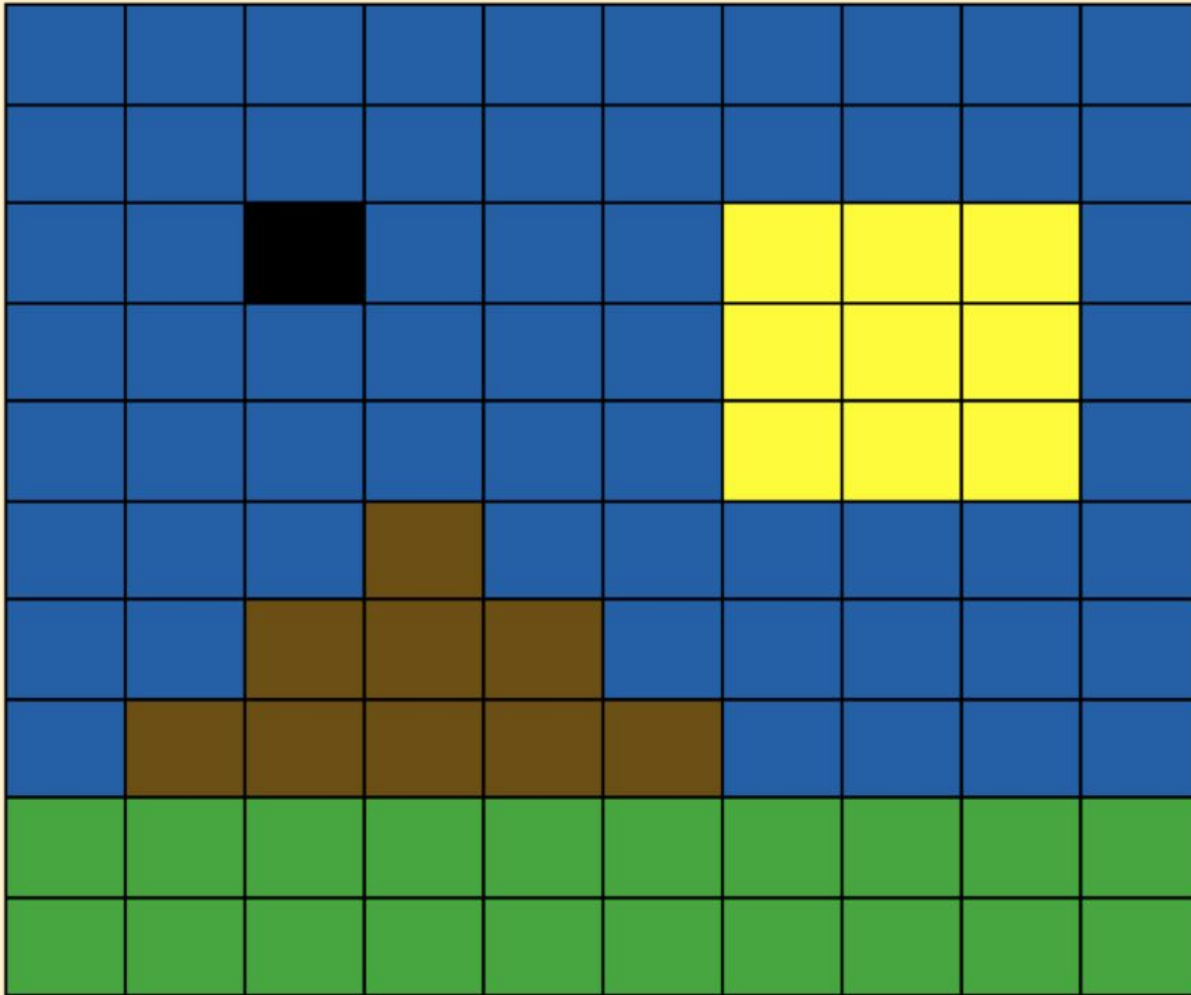
Run Length Encoding



Bitmap 13 pixels
wide and 10
pixels high using
1 bit colour depth

White is 1
Black is 0

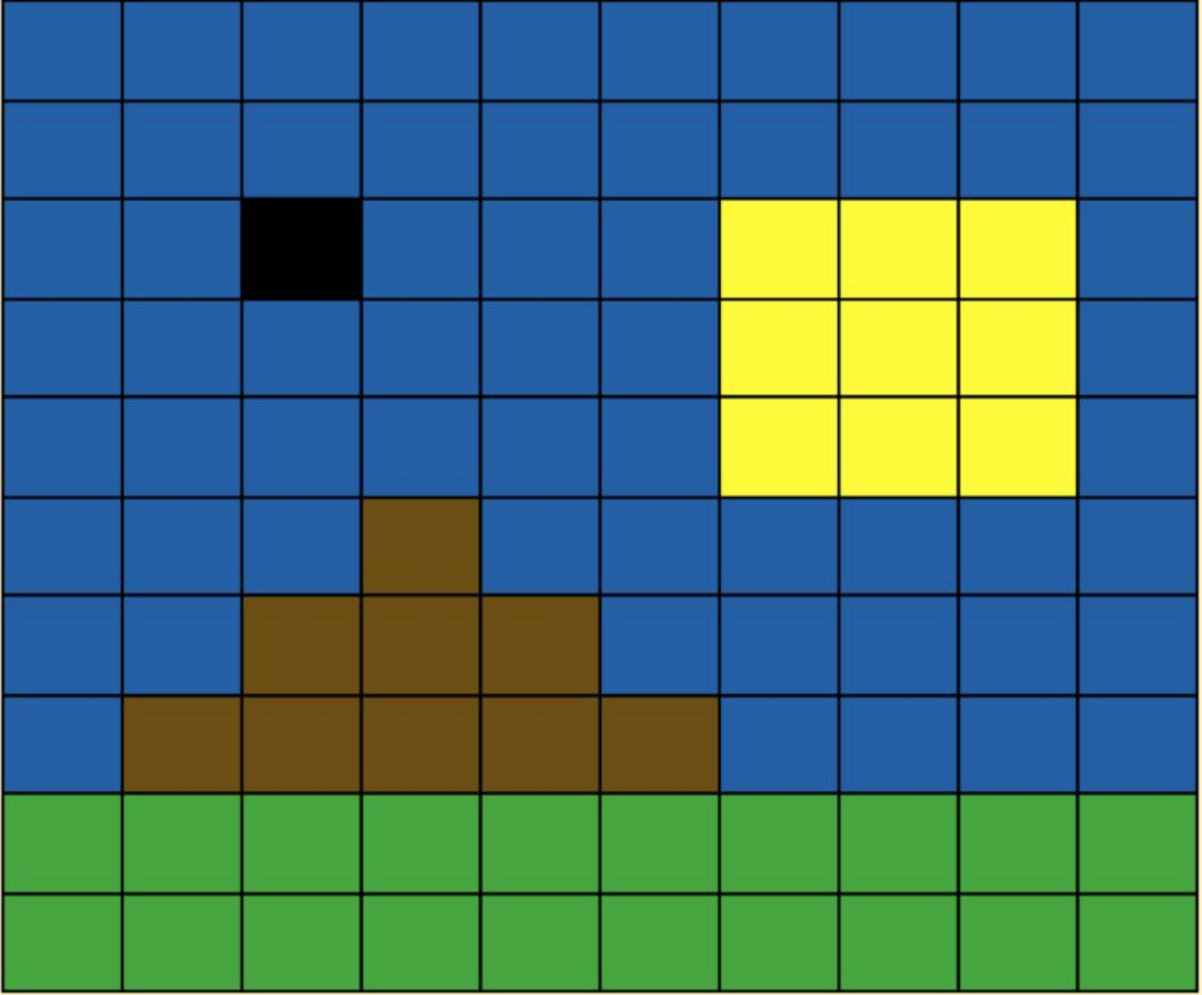
Run Length Encoding



Bitmap 10 pixels wide and 10 pixels high using 4 bit colour depth

Colour depth will actually be much higher than 4 - at least 8 if not 24 bits. 4 bit is used here as an example of a calculation you may need to do in an exam

Run Length Encoding



10B
10B
2B 1K 3B 3Y 1B
etc...

Run Length Encoding

RLE usually ends up with a smaller file size. But not always.

If there is repeated data this almost always does (like in a JPG).

If the data has lots of single frequency pieces, however, the file size won't be smaller:

abcdefgh

1a1b1c1d1e1f1g1h