

Complex Data: Multidimensional and Jagged Arrays



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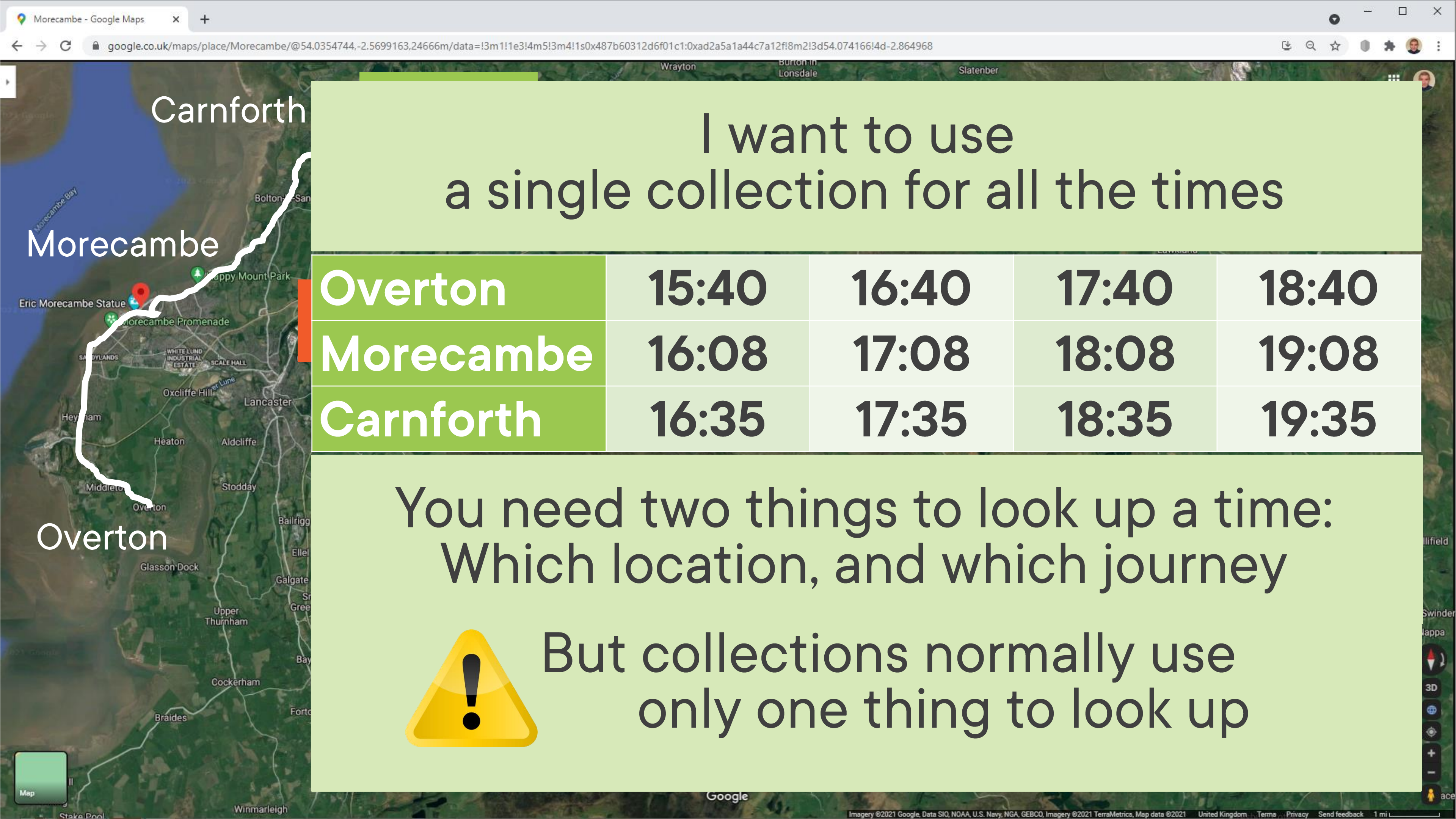
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Multidimensional data:
You need more than one index
to look up items





I want to use
a single collection for all the times

Overton	15:40	16:40	17:40	18:40
Morecambe	16:08	17:08	18:08	19:08
Carnforth	16:35	17:35	18:35	19:35

You need two things to look up a time:
Which location, and which journey



But collections normally use
only one thing to look up

Arrays can support multiple
indices

(Also known as multiple
dimensions)



Demo

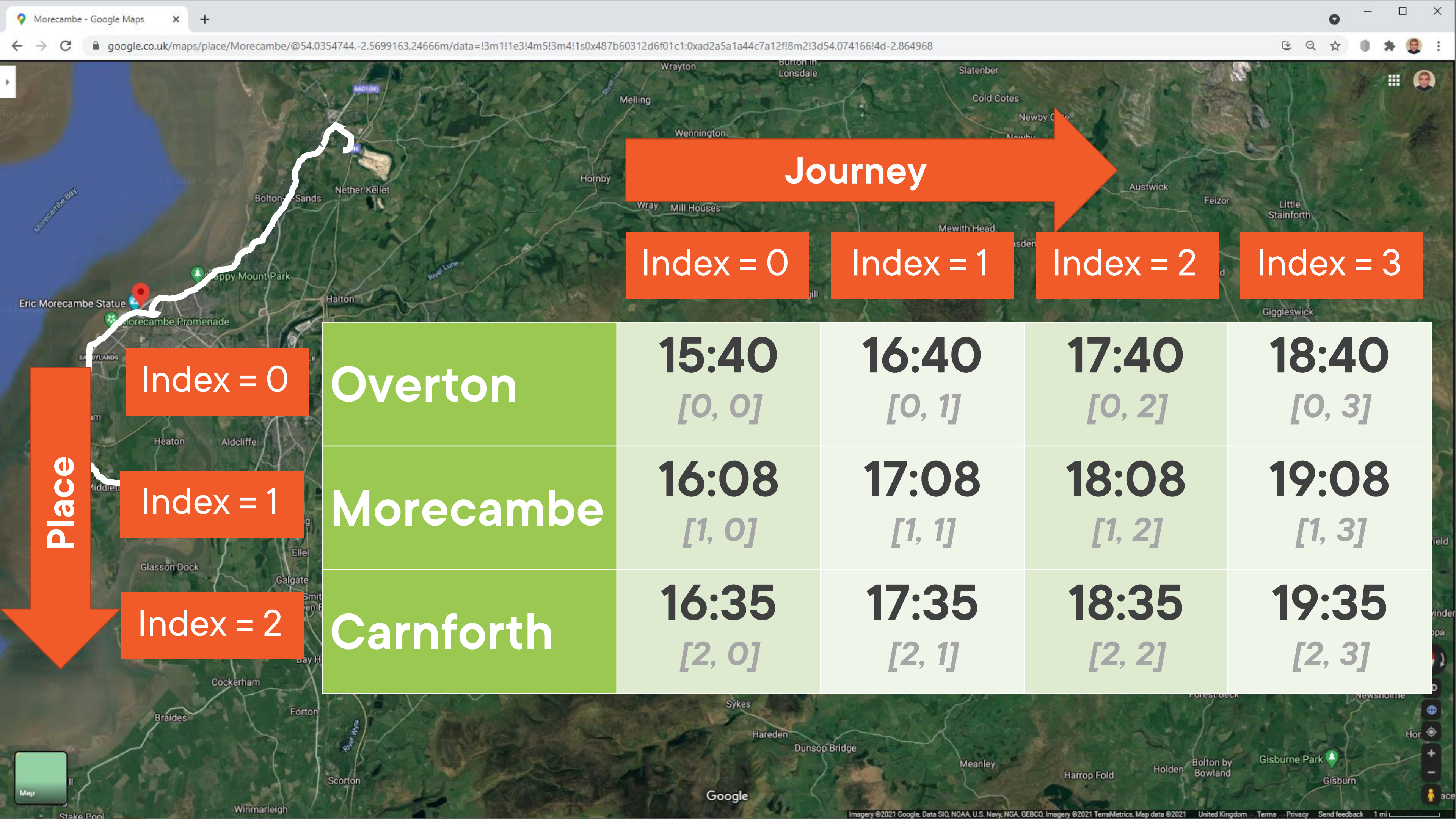


Multidimensional arrays

- Store timetable in a 2-Dimensional (2D) array
- Display the timetable



Code Demo



Journey

Index = 0

Index = 1

Index = 2

Index = 3

Index = 0

Index = 1

Index = 2

Overton

Morecambe

Carnforth

15:40

[0, 0]

16:40

[0, 1]

17:40

[0, 2]

18:40

[0, 3]

16:08

[1, 0]

17:08

[1, 1]

18:08

[1, 2]

19:08

[1, 3]

16:35

[2, 0]

17:35

[2, 1]

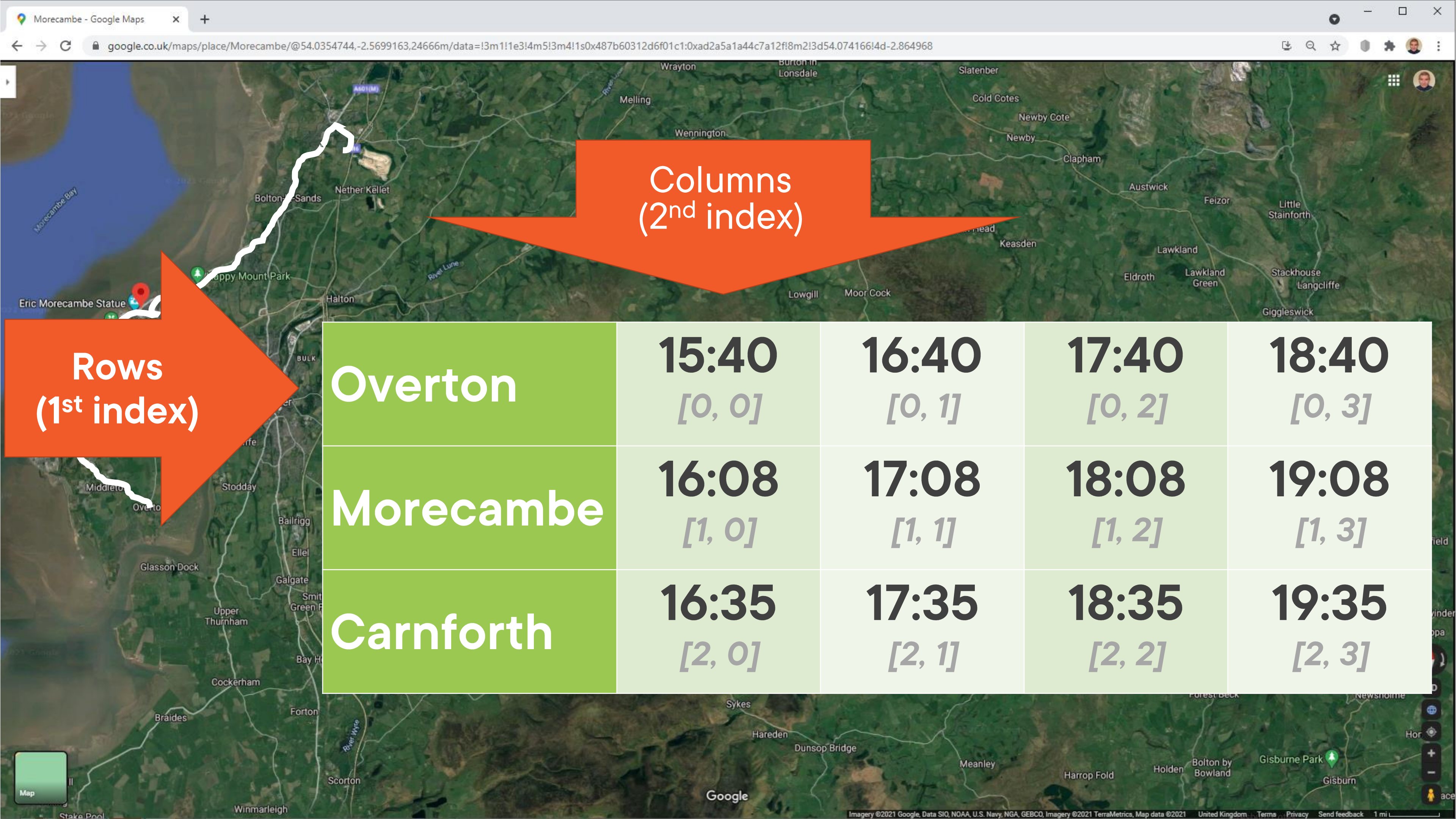
18:35

[2, 2]

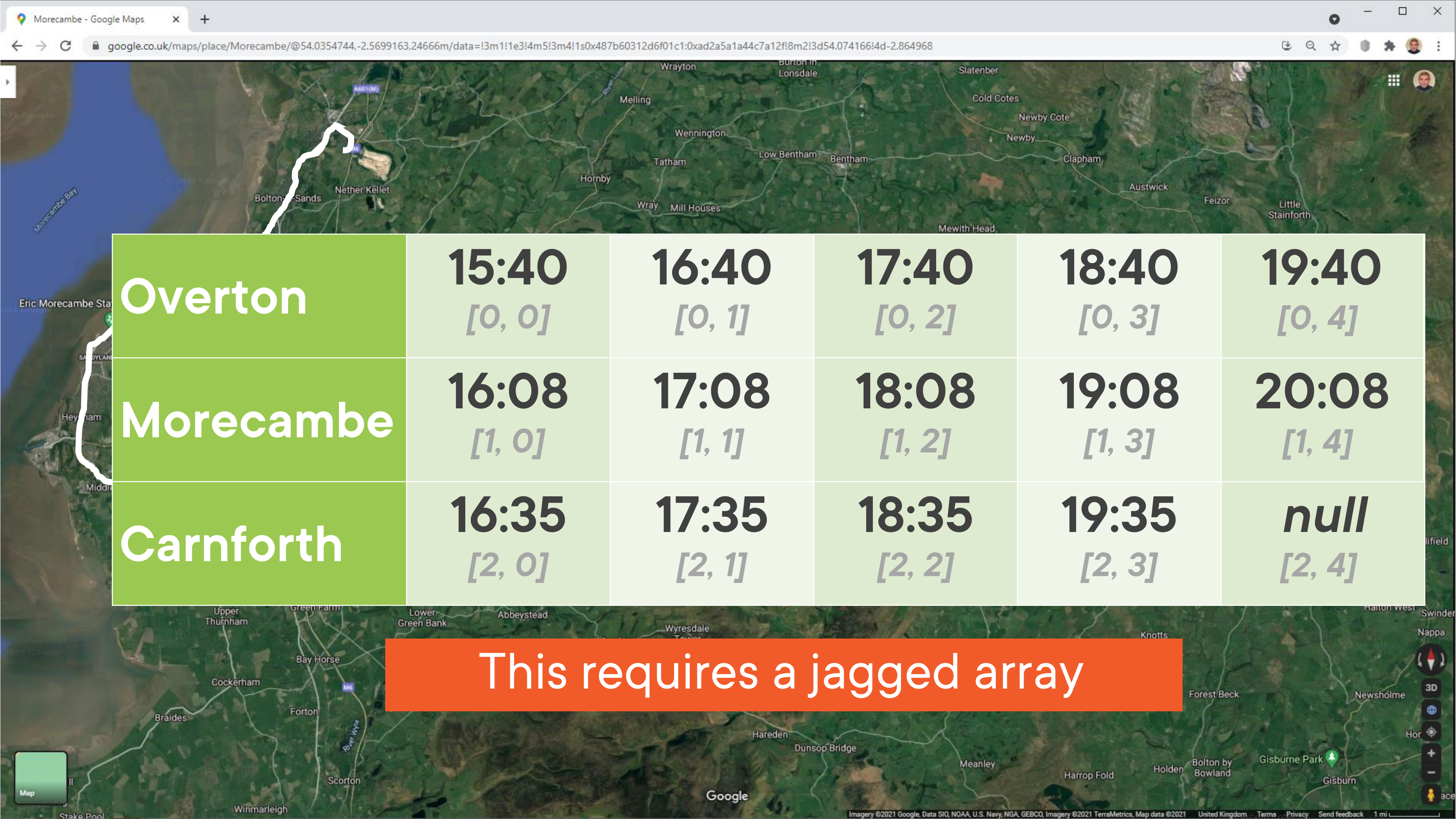
19:35

[2, 3]

Place



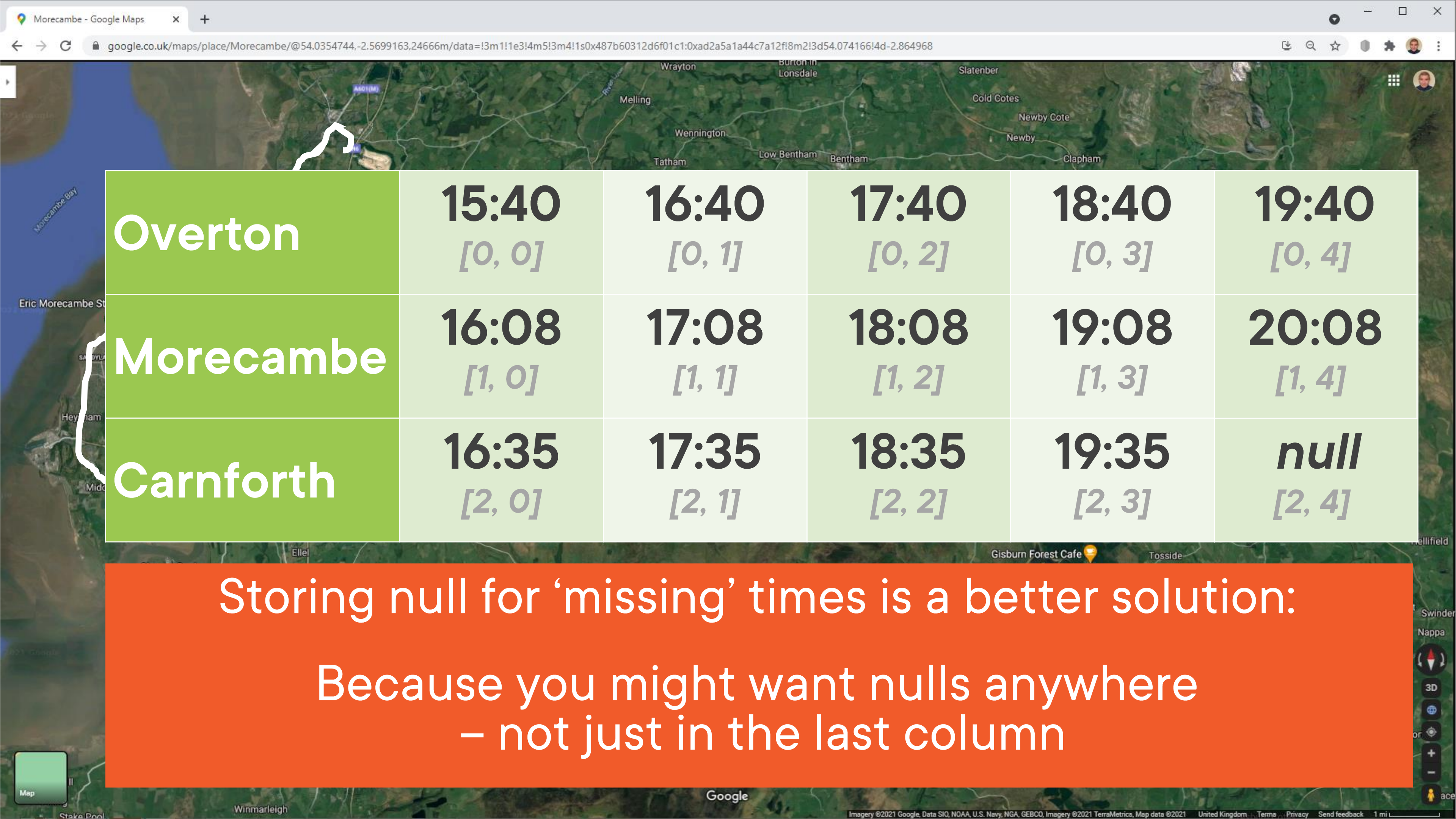
Code Demo



Overton	15:40 <i>[0, 0]</i>	16:40 <i>[0, 1]</i>	17:40 <i>[0, 2]</i>	18:40 <i>[0, 3]</i>	19:40 <i>[0, 4]</i>
Morecambe	16:08 <i>[1, 0]</i>	17:08 <i>[1, 1]</i>	18:08 <i>[1, 2]</i>	19:08 <i>[1, 3]</i>	20:08 <i>[1, 4]</i>
Carnforth	16:35 <i>[2, 0]</i>	17:35 <i>[2, 1]</i>	18:35 <i>[2, 2]</i>	19:35 <i>[2, 3]</i>	<i>null</i> <i>[2, 4]</i>

This requires a jagged array

Code Demo



Summary



Multidimensional and jagged arrays

- Multiple indices to look-up data

Multidimensional arrays [,]

- Single arrays with multiple indices

Jagged arrays [][]

- Arrays of arrays
- Rows can have different lengths

