

Data_EDA

August 9, 2021

1 Environment

1.0.1 Libraries and environment variables

```
<IPython.core.display.Javascript object>
```

1.0.2 Set working directory

```
<IPython.core.display.Javascript object>
```

1.0.3 Load Data

```
<IPython.core.display.Javascript object>
```

2 EDA

2.0.1 Items per test

```
Subtest 1 item count: 10
Subtest 2 item count: 10
Subtest 3 item count: 50
Subtest 4 item count: 30
```

```
<IPython.core.display.Javascript object>
```

2.0.2 Children

```
Subtest 1 Kinder: 51
Subtest 2 Kinder: 51
Subtest 3 Kinder: 51
Subtest 4 Kinder: 46
```

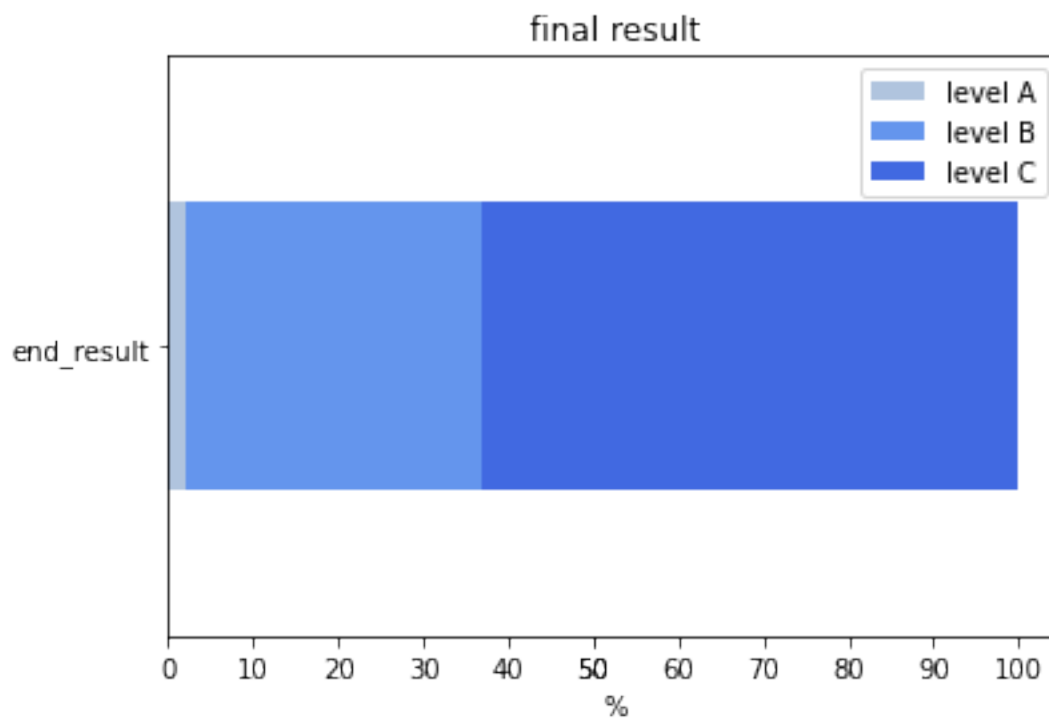
```
<IPython.core.display.Javascript object>
```

2.0.3 1. Final level

```
<IPython.core.display.Javascript object>
```

nur Kinder, die auch Test 4 gemacht haben:

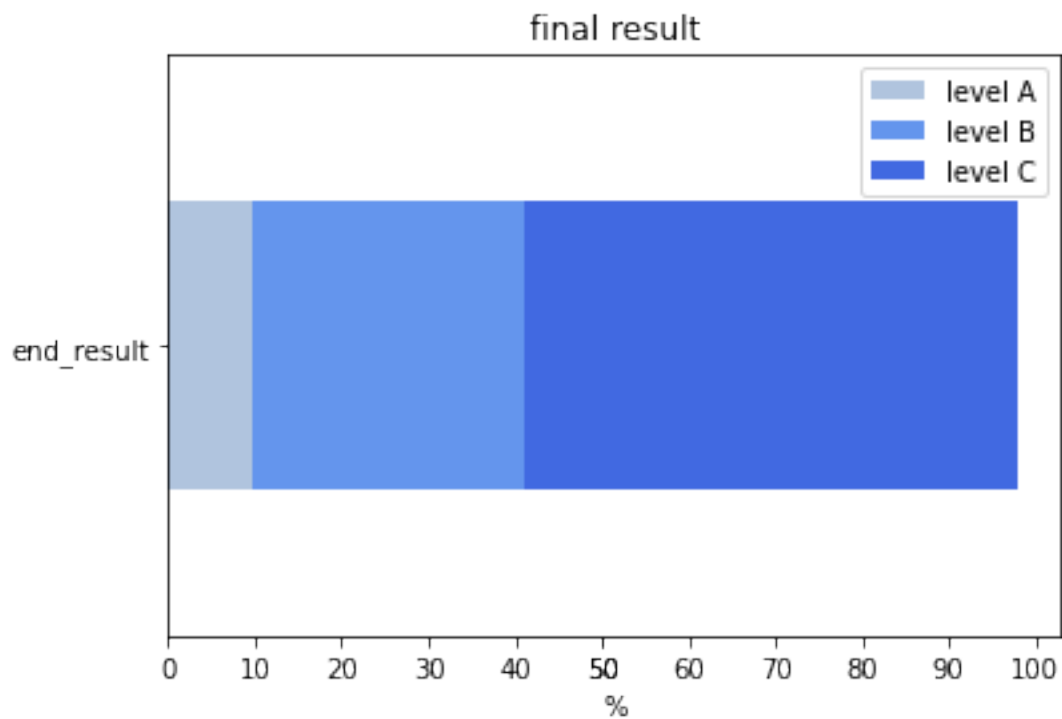
	A	B	C
end_result	2.173913	34.782609	63.043478



<IPython.core.display.Javascript object>

inklusive Kindern, die Test 4 nicht gemacht haben:

	A	B	C
end_result	9.803922	31.372549	56.862745

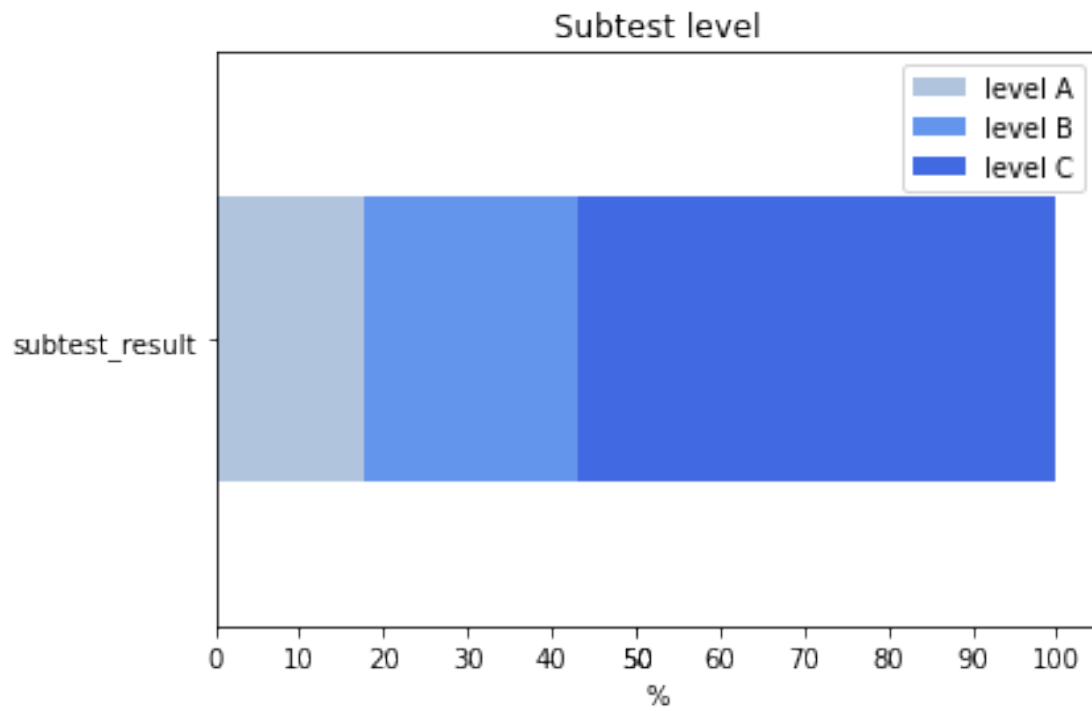


<IPython.core.display.Javascript object>

2.0.4 2. Subtest level

Subtest 1 Level

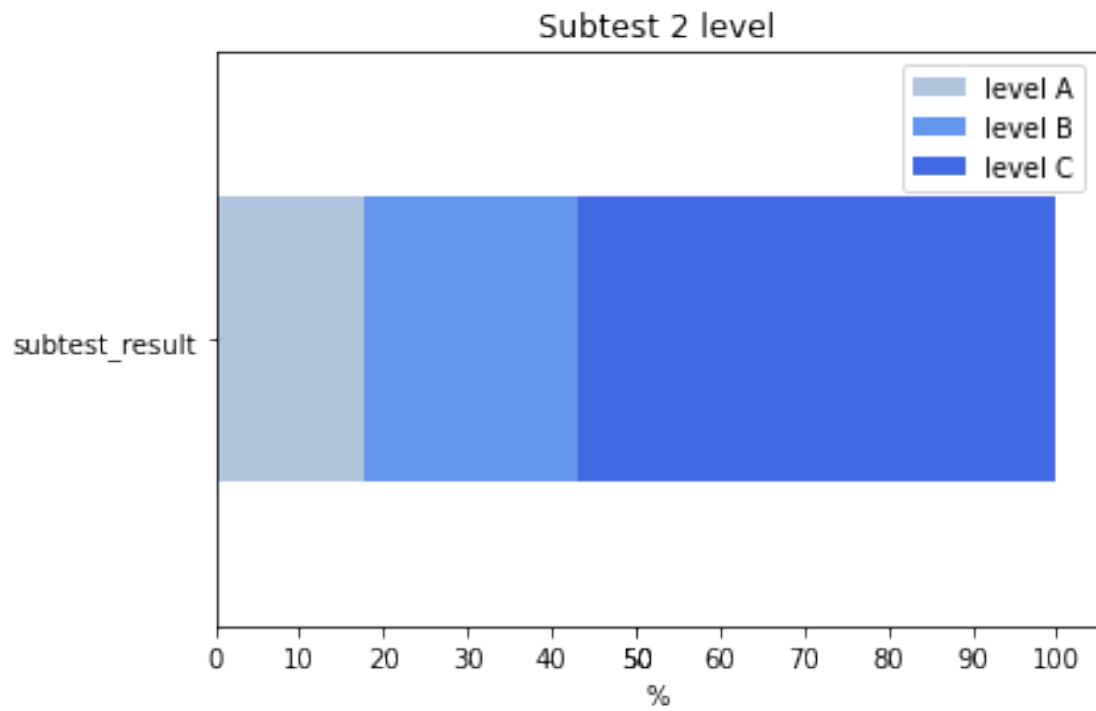
	A	B	C
subtest_result	17.647059	25.490196	56.862745



<IPython.core.display.Javascript object>

Subtest 2 Level

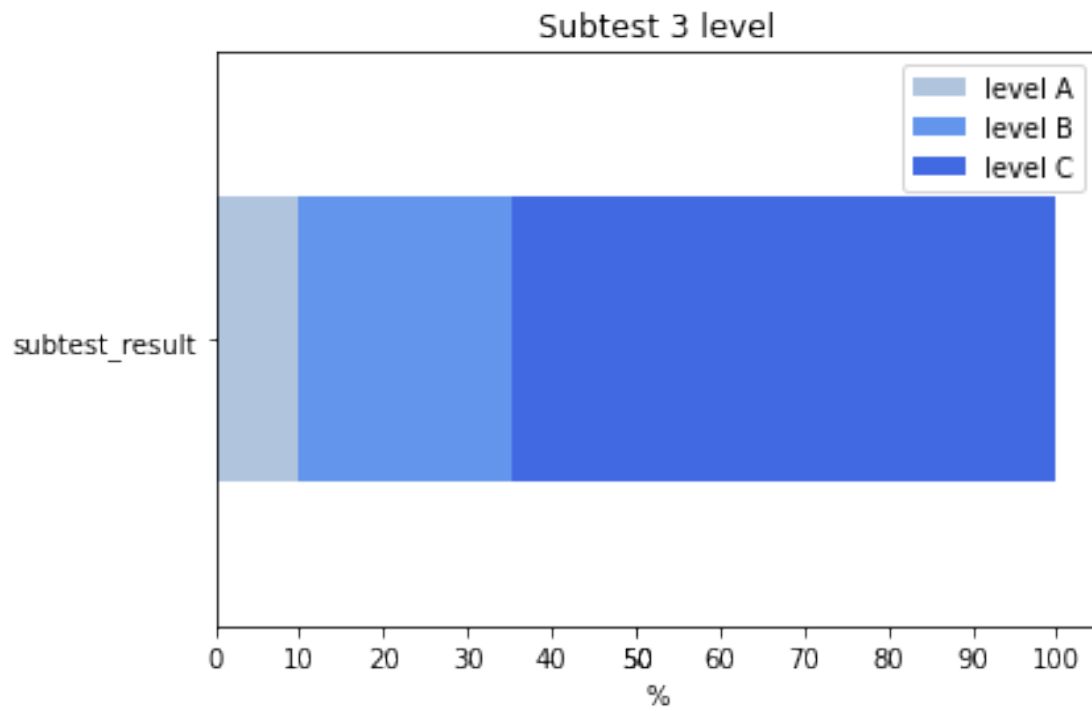
	A	B	C
subtest_result	17.647059	25.490196	56.862745



<IPython.core.display.Javascript object>

Subtest 3 Level

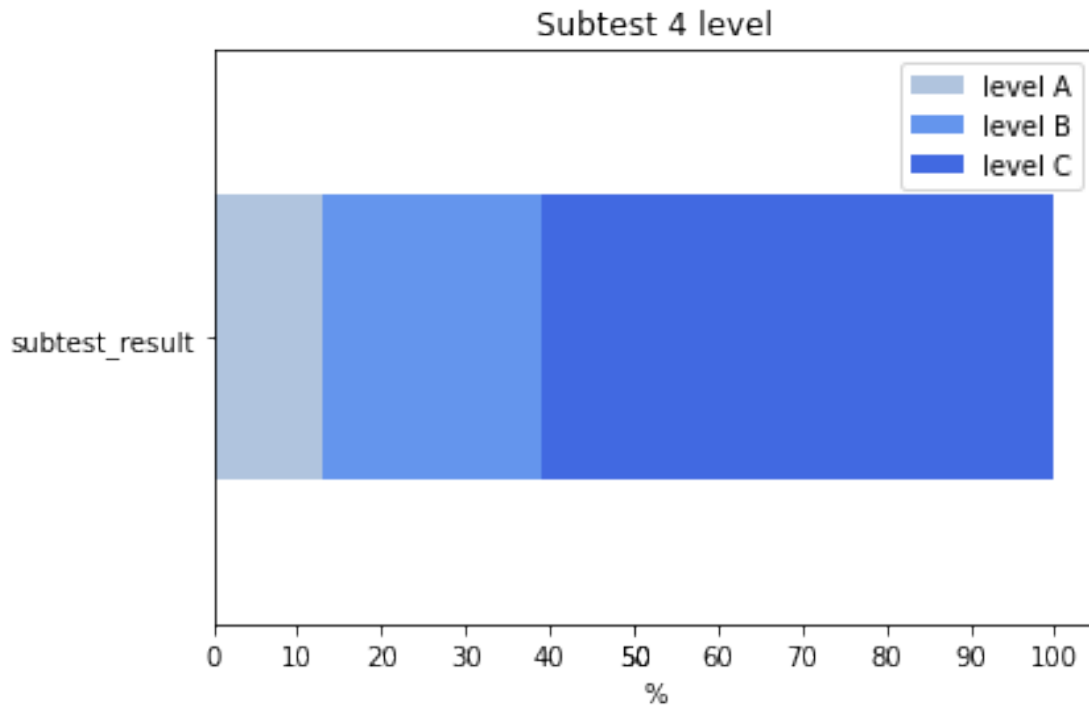
	A	B	C
subtest_result	9.803922	25.490196	64.705882



<IPython.core.display.Javascript object>

Subtest 4 Level

	A	B	C
subtest_result	13.043478	26.086957	60.869565



<IPython.core.display.Javascript object>

2.0.5 4. Item Difficulty → Results of Subtest Items

Participation/Motivation

<IPython.core.display.Javascript object>

Subtest 1: Missing values

Kinder: 51

```
[14]:
```

column	missing_values	missing_values(%)
1_10_ergebnis	5	9.803922
1_4_ergebnis	4	7.843137
1_9_ergebnis	2	3.921569
1_3_ergebnis	1	1.960784
1_5_ergebnis	1	1.960784

<IPython.core.display.Javascript object>

Subtest 2: Missing values

Kinder: 51

```
[15]:
```

	missing_values	missing_values(%)
column		
2_10_ergebnis	12	23.529412
2_8_ergebnis	6	11.764706
2_2_ergebnis	5	9.803922
2_9_ergebnis	5	9.803922
2_7_ergebnis	4	7.843137

<IPython.core.display.Javascript object>

Subtest 3: Missing values

Kinder: 51

```
[16]:
```

	missing_values	missing_values(%)
column		
3_50_ergebnis	32	62.745098
3_48_ergebnis	31	60.784314
3_49_ergebnis	30	58.823529
3_47_ergebnis	29	56.862745
3_46_ergebnis	29	56.862745
3_43_ergebnis	27	52.941176
3_45_ergebnis	27	52.941176
3_44_ergebnis	27	52.941176
3_42_ergebnis	26	50.980392
3_41_ergebnis	25	49.019608

<IPython.core.display.Javascript object>

Subtest 4: Missing values

Kinder: 46

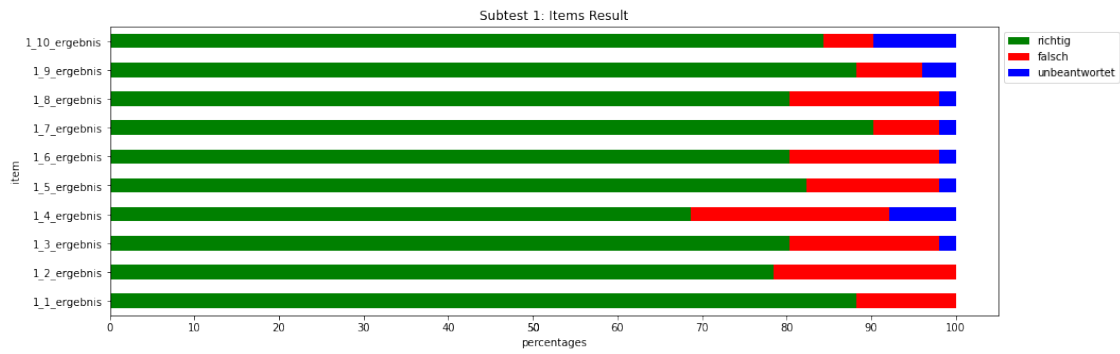
```
[17]:
```

	missing_values	missing_values(%)
column		
4_29_ergebnis	35	76.086957
4_30_ergebnis	34	73.913043
4_28_ergebnis	34	73.913043
4_27_ergebnis	32	69.565217
4_26_ergebnis	30	65.217391
4_25_ergebnis	29	63.043478
4_24_ergebnis	25	54.347826
4_21_ergebnis	25	54.347826
4_23_ergebnis	24	52.173913
4_20_ergebnis	24	52.173913

<IPython.core.display.Javascript object>

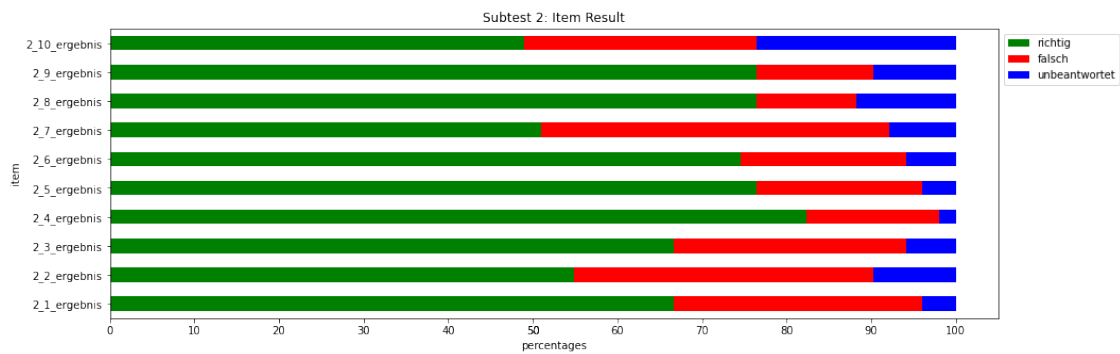
<IPython.core.display.Javascript object>

Subtest 1 : Item results



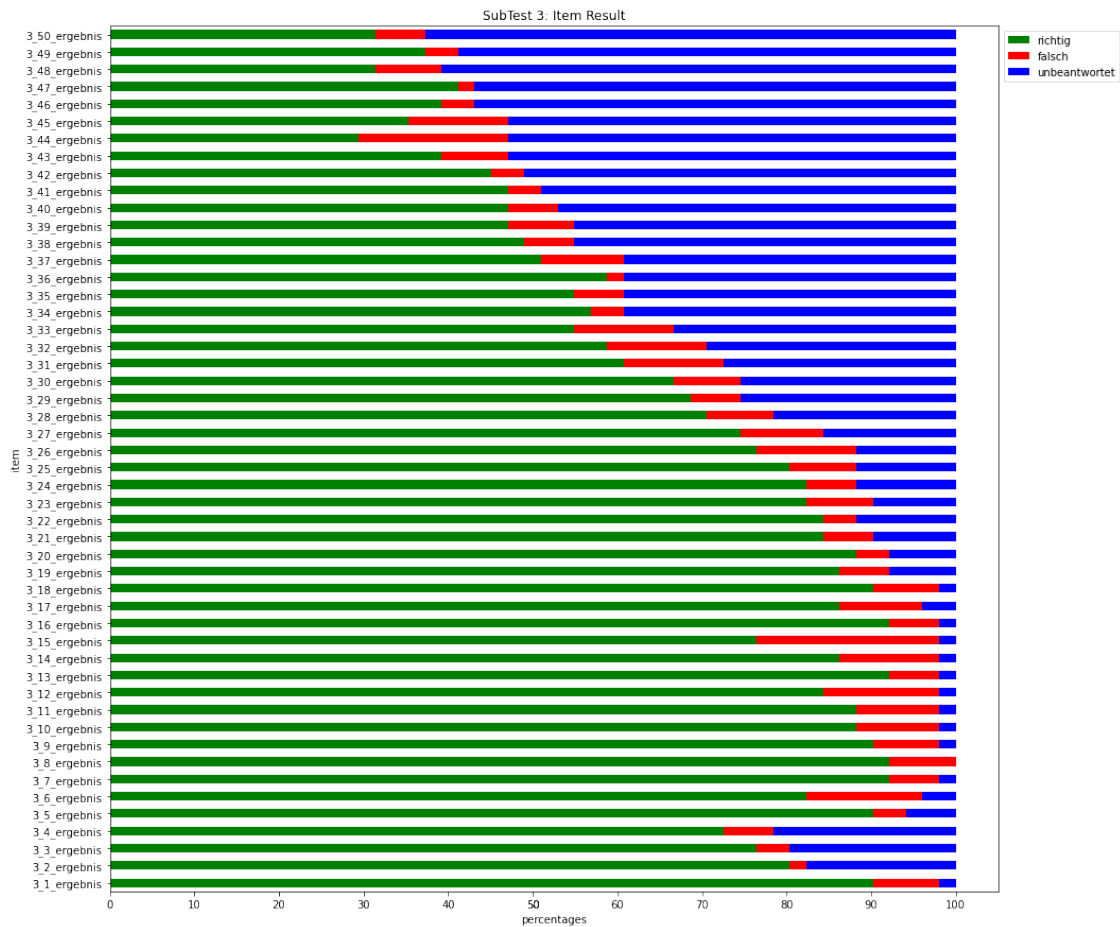
<IPython.core.display.Javascript object>

Subtest 2: Item results



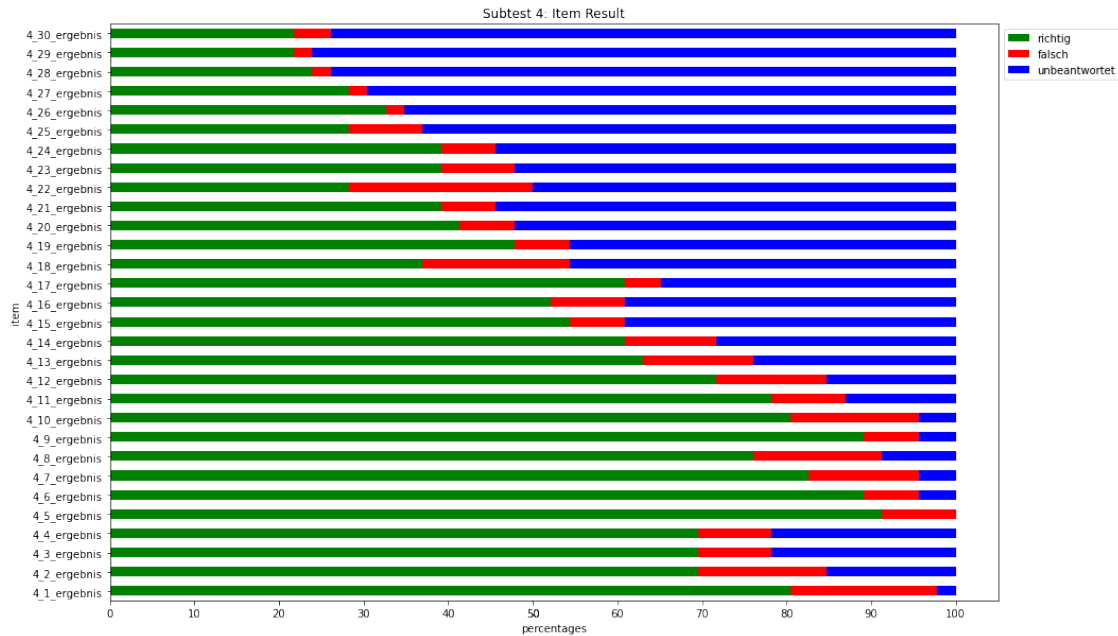
<IPython.core.display.Javascript object>

Subtest 3: Item results



<IPython.core.display.Javascript object>

Subtest 4 : Item results



<IPython.core.display.Javascript object>

2.0.6 5. Correlations

Are there significant correlations (> 0.85) between false answers and no response?

<IPython.core.display.Javascript object>

Subtest 1

Subtest 1, Correlation false & unanswered: -0.16724840200141827

<IPython.core.display.Javascript object>

Subtest 2

Subtest 2, Correlation false & unanswered: 0.10171929129252562

<IPython.core.display.Javascript object>

Subtest 3

Subtest 3, Correlation false & unanswered: -0.22201116427028048

<IPython.core.display.Javascript object>

Subtest 4

Subtest 4, Correlation false & unanswered: -0.5491691547746677

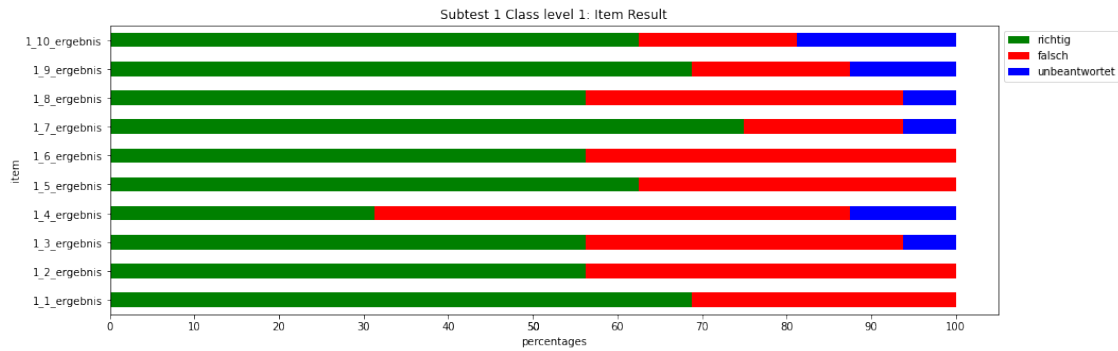
<IPython.core.display.Javascript object>

2.1 Class level

2.1.1 Subtest 1

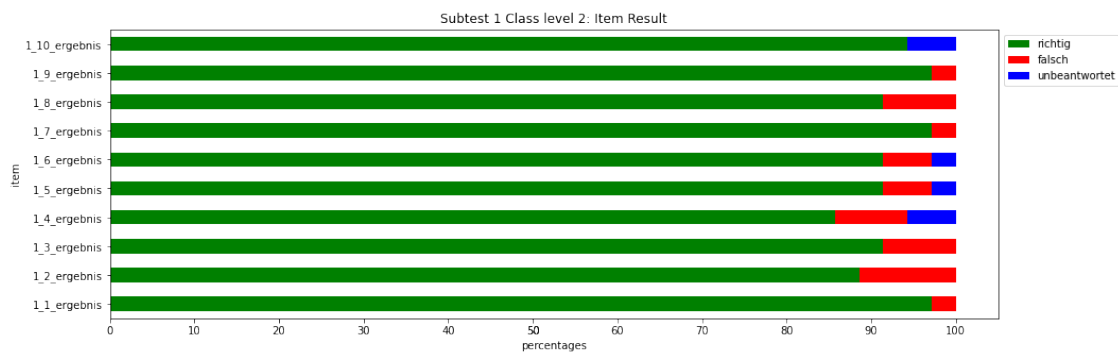
<IPython.core.display.Javascript object>

Class level 1



<IPython.core.display.Javascript object>

Class level 2

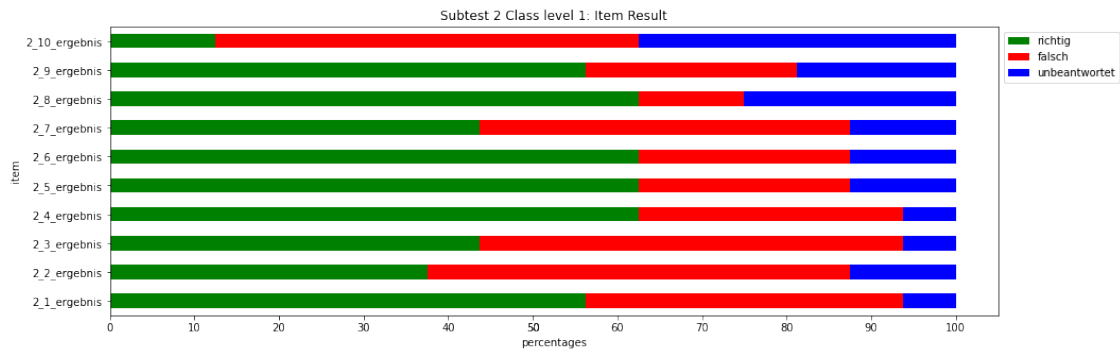


<IPython.core.display.Javascript object>

2.1.2 Subtest 2

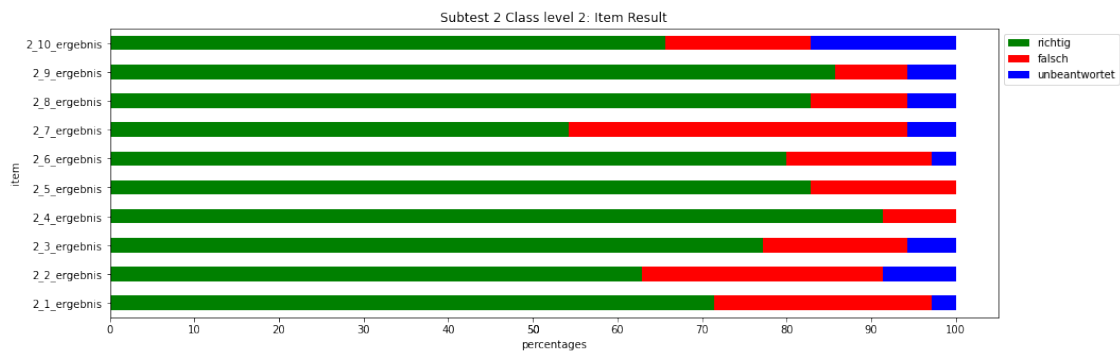
<IPython.core.display.Javascript object>

Class level 1



<IPython.core.display.Javascript object>

Class level 2

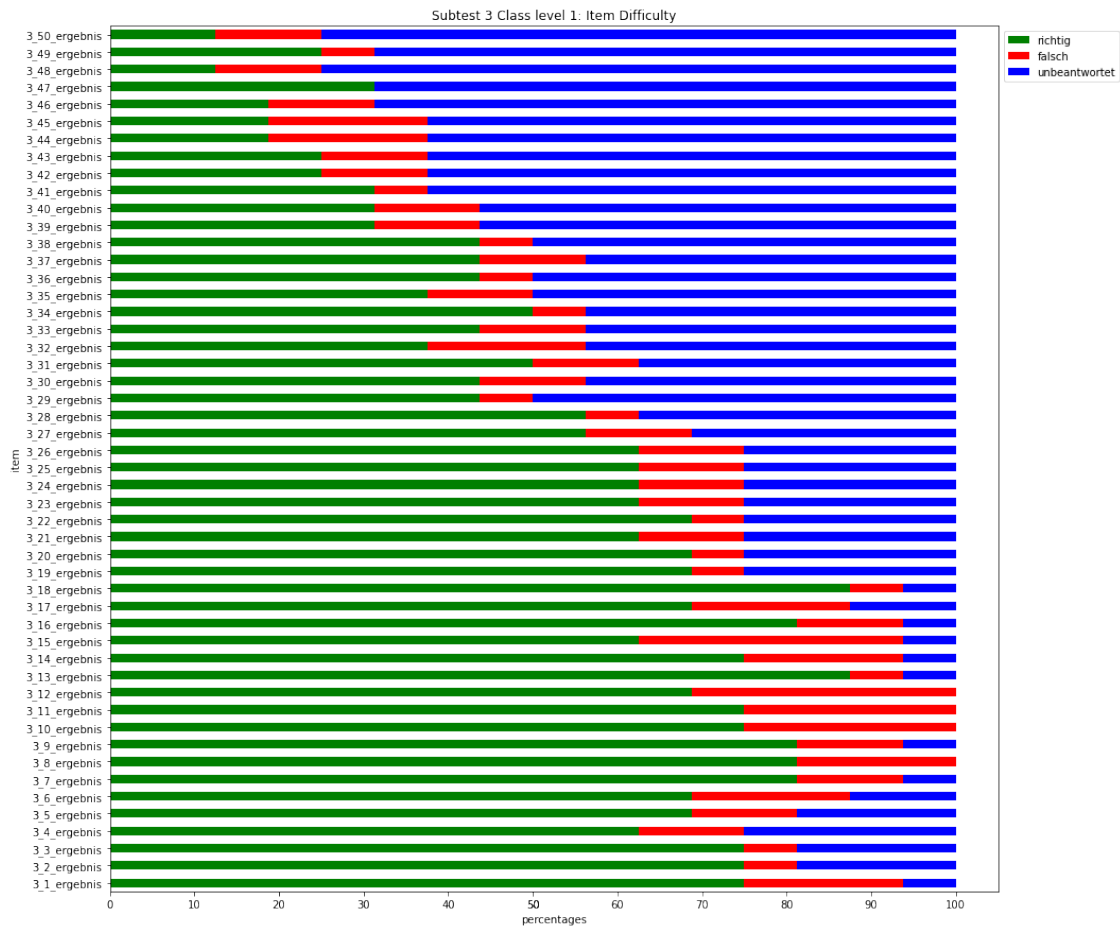


<IPython.core.display.Javascript object>

2.1.3 Subtest 3

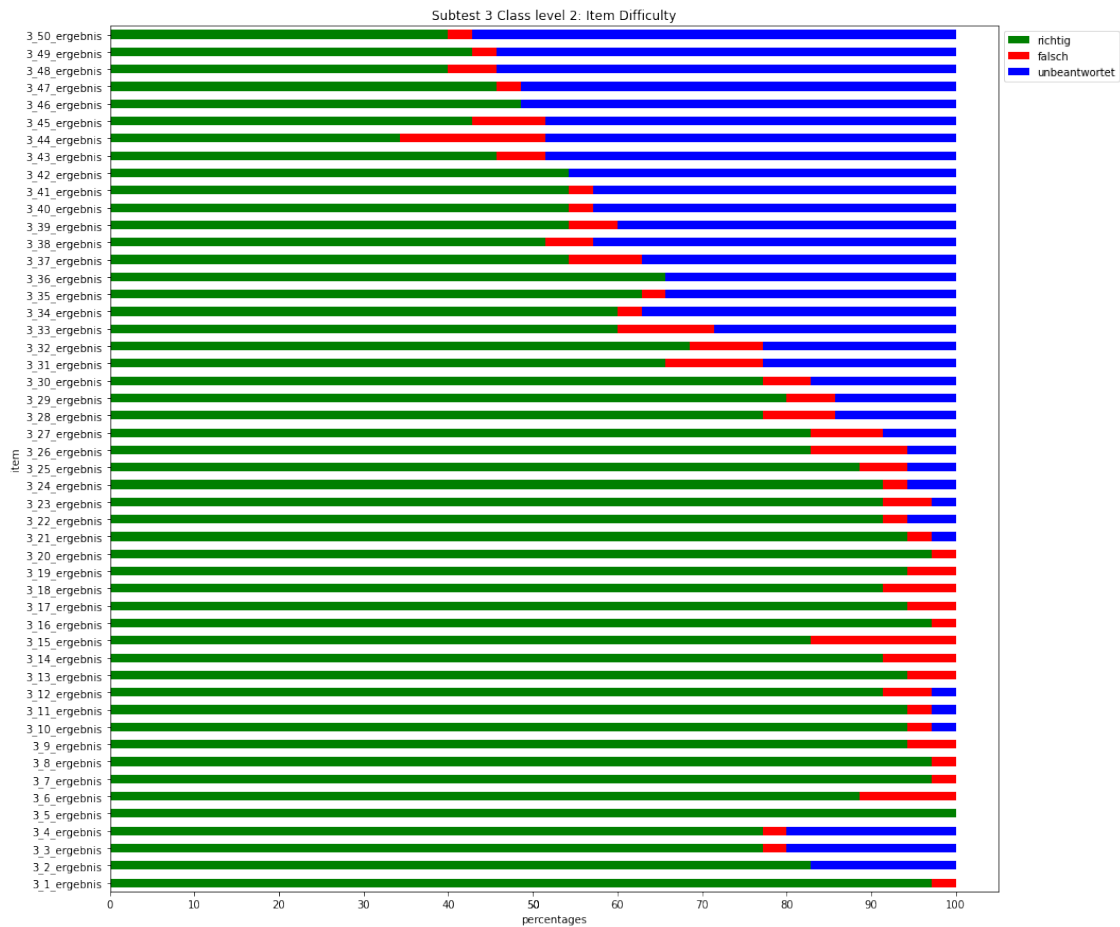
<IPython.core.display.Javascript object>

Class level 1



<IPython.core.display.Javascript object>

Class level 2

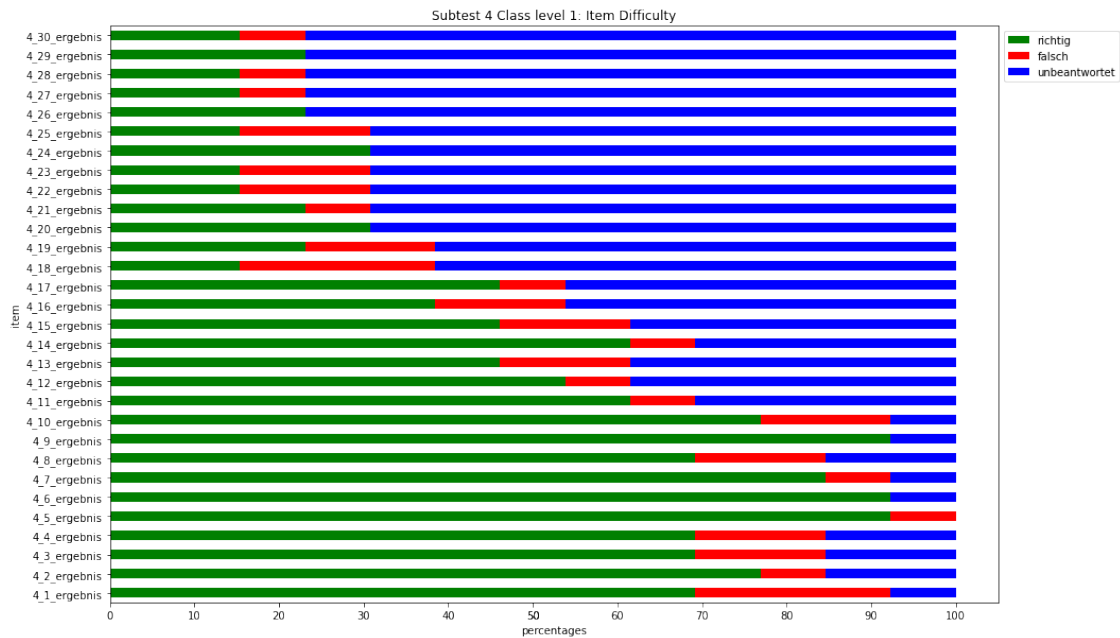


<IPython.core.display.Javascript object>

2.1.4 Subtest 4

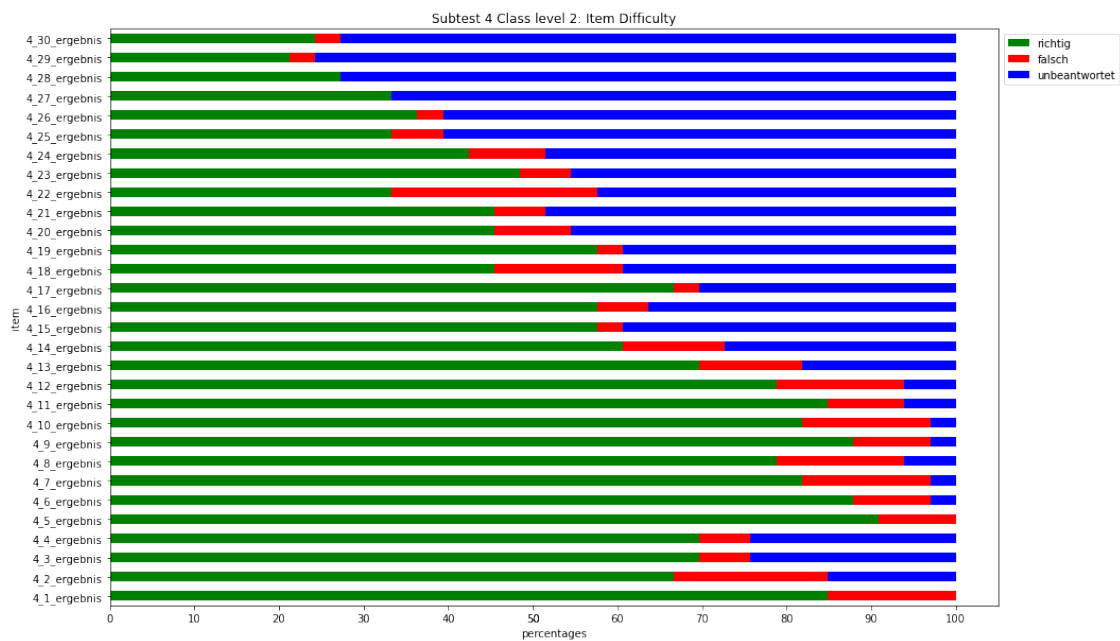
<IPython.core.display.Javascript object>

Class level 1



<IPython.core.display.Javascript object>

Class level 2



<IPython.core.display.Javascript object>

2.2 Item discrimination

compare the score on each question against the score on the test as a whole.
If less than 0.1 or even negative the item needs to be reexamined.