

## S2 Appendix. Pokémon key example

```
{
  "$schema": "https://raw.githubusercontent.com/Artsdatabanken/Clavis/
60090011e4efed657f41cced3366b2b57d6cff3b/Clavis.json",
  "title": "A key to a selection of Pokémon",
  "language": "en",
  "license": "https://creativecommons.org/licenses/by/4.0/",
  "creator": "person:wouterkoch",
  "lastModified": "2022-03-19 21:35:25",
  "identifier": "26b57071-15ca-4b44-92a4-b61181f15373",
  "persons": [
    {
      "id": "person:wouterkoch",
      "name": "Wouter Koch"
    }
  ],
  "organizations": [
    {
      "id": "organization:ntnu",
      "name": "Norwegian University of Science and Technology",
      "url": "https://www.ntnu.no"
    }
  ],
  "taxa": [
    {
      "id": "taxon:pikachuidae",
      "scientificName": "Pikachuidae",
      "children": [
        {
          "id": "taxon:pokemon_172",
          "scientificName": "Pichu",
          "children": [
            {
              "id": "taxon:pokemon_172_standard",
              "label": ""
            },
            {
              "id": "taxon:pokemon_172_shiny",
              "label": "Shiny"
            }
          ]
        }
      ]
    },
    {
      "id": "taxon:pokemon_025",
      "scientificName": "Pikachu",
      "externalResource": [
        {
```

```

        "serviceId": "service:wikidata",
        "externalId": "Q9351"
    },
    {
        "serviceId": "service:example_api",
        "externalId": "Pikachu"
    }
],
"followup": "https://example.com/pikachu_costumes",
"children": [
    {
        "id": "taxon:pokemon_025_standard",
        "isEndPoint": true,
        "label": "",
        "children": [
            {
                "id": "taxon:pokemon_025_standard_male",
                "label": "♂"
            },
            {
                "id": "taxon:pokemon_025_standard_female",
                "label": "♀"
            }
        ]
    },
    {
        "id": "taxon:pokemon_025_shiny",
        "label": "Shiny"
    }
]
},
{
    "id": "taxon:pokemon_026",
    "scientificName": "Raichu",
    "children": [
        {
            "id": "taxon:pokemon_026_standard",
            "label": ""
        },
        {
            "id": "taxon:pokemon_026_shiny",
            "label": "Shiny"
        }
    ]
}
]
},
{
    "id": "taxon:pokemon_115",
    "scientificName": "Kangaskhan",
    "geoDistribution": [

```

```

[
  [
    130.0341796875,
    -10.228437266155943
  ],
  [
    111.97265625,
    -21.779905342529634
  ],
  [
    115.09277343749999,
    -36.91476428895593
  ],
  [
    131.2646484375,
    -32.916485347314385
  ],
  [
    141.8994140625,
    -40.44694705960048
  ],
  [
    150.82031249999997,
    -38.8225909761771
  ],
  [
    154.95117187499997,
    -26.15543796871355
  ],
  [
    142.3388671875,
    -10.09867012060338
  ],
  [
    138.69140625,
    -12.382928338487396
  ],
  [
    130.0341796875,
    -10.228437266155943
  ]
]
]
},
{
  "id": "taxon:castform",
  "scientificName": "Castform"
}
],
"characters": [
  {

```

99  
 100  
 101  
 102  
 103  
 104  
 105  
 106  
 107  
 108  
 109  
 110  
 111  
 112  
 113  
 114  
 115  
 116  
 117  
 118  
 119  
 120  
 121  
 122  
 123  
 124  
 125  
 126  
 127  
 128  
 129  
 130  
 131  
 132  
 133  
 134  
 135  
 136  
 137  
 138  
 139  
 140  
 141  
 142  
 143  
 144  
 145  
 146  
 147  
 148  
 149  
 150

```

    "id": "character:type_of_pokemon",
    "title": "Pokémon type",
    "states": [
        {
            "id": "state:pokemon_type_electric",
            "title": "Electric"
        }
    ]
},
{
    "id": "character:color",
    "title": "Color of body",
    "states": [
        {
            "id": "state:color_blue",
            "title": "Blue"
        },
        {
            "id": "state:color_red",
            "title": "Red"
        }
    ]
},
{
    "id": "character:all_colors",
    "title": "Colors on body of the Pokémon",
    "type": "non-exclusive",
    "states": [
        {
            "id": "state:colors_yellow",
            "title": "Yellow"
        },
        {
            "id": "state:colors_red",
            "title": "Red"
        },
        {
            "id": "state:colors_black",
            "title": "Black"
        },
        {
            "id": "state:colors_brown",
            "title": "Brown"
        },
        {
            "id": "state:colors_white",
            "title": "White"
        }
    ]
},
{
    "id": "character:tail_shape",

```

```

"title": "Shape of the tail end",
"states": [
  {
    "id": "state:pointy_tail",
    "title": "Pointy",
    "media": "media:pointy_tail"
  },
  {
    "id": "state:lobed_tail",
    "title": "Double-lobed",
    "media": "media:lobed_tail"
  }
]
},
{
  "id": "character:wearing_hat",
  "title": "Is the Pokémon wearing a hat?",
  "states": [
    {
      "id": "state:hat",
      "title": "Yes"
    },
    {
      "id": "state:no_hat",
      "title": "No"
    }
  ]
},
{
  "id": "character:hat_shape",
  "title": "What is the style of the hat?",
  "logicalPremise": "state:hat",
  "states": [
    {
      "id": "state:bowler_hat",
      "title": "Bowler hat"
    },
    {
      "id": "state:top_hat",
      "title": "Top hat"
    }
  ]
},
{
  "id": "character:weight",
  "title": "How much does the Pokémon weigh?",
  "userRequirement": "requirement:catch",
  "type": "numerical",
  "states": {
    "id": "state:weight",
    "min": 1,
    "max": 125,

```

```

        "stepSize": 1,
        "unit": "kg"
    }
},
],
"statements": [
    {
        "id": "statement:pikachu_is_electric",
        "taxonId": "taxon:pokemon_025",
        "characterId": "type_of_pokemon",
        "value": "state:pokemon_type_electric",
        "frequency": 1
    },
    {
        "id": "statement:pikachu_is_never_blue",
        "taxonId": "taxon:pokemon_025",
        "characterId": "character:color",
        "value": "state:color_blue",
        "frequency": 0
    },
    {
        "id": "statement:pikachu_lobed_tail",
        "taxonId": "taxon:pokemon_025",
        "characterId": "character:tail_shape",
        "value": "state:lobed_tail",
        "frequency": 0.5
    },
    {
        "id": "statement:pikachu_pointy_tail",
        "taxonId": "taxon:pokemon_025",
        "characterId": "character:tail_shape",
        "value": "state:pointy_tail",
        "frequency": 0.5
    },
    {
        "id": "statement:pikachu_weight",
        "taxonId": "taxon:pokemon_025",
        "characterId": "character:weight",
        "value": [
            2.98,
            10.1
        ],
        "frequency": 1
    },
    {
        "id": "statement:castform_rain_type",
        "taxonId": "taxon:castform",
        "characterId": "character:castform_type",
        "value": "state:rainy_castform",
        "frequency": 0.2
    },
    {

```

```

    "id": "statement:castform_rain_type_bergen",
    "taxonId": "taxon:castform",
    "characterId": "character:castform_type",
    "value": "state:rainy_castform",
    "frequency": 0.9,
    "geoDistribution": [
      [
        [
          5.27618408203125,
          60.44976847885747
        ],
        [
          5.218505859375,
          60.4233434866285
        ],
        [
          5.27618408203125,
          60.36160157353732
        ],
        [
          5.395660400390625,
          60.36839212633114
        ],
        [
          5.4052734375,
          60.421309904895715
        ],
        [
          5.27618408203125,
          60.44976847885747
        ]
      ]
    ]
  },
  {
    "id": "statement:pikachu_contains_yellow",
    "taxonId": "taxon:pokemon_025",
    "characterId": "character:all_colors",
    "value": "state:colors_yellow",
    "frequency": 1
  },
  {
    "id": "statement:pikachu_contains_black",
    "taxonId": "taxon:pokemon_025",
    "characterId": "character:all_colors",
    "value": "state:colors_black",
    "frequency": 1
  },
  {
    "id": "statement:pikachu_contains_red",

```

```

"taxonId": "taxon:pokemon_025",
"characterId": "character:all_colors",
"value": "state:colors_red",
"frequency": 1
},
{
  "id": "statement:pikachu_contains_no_brown",
  "taxonId": "taxon:pokemon_025",
  "characterId": "character:all_colors",
  "value": "state:colors_brown",
  "frequency": 0
},
{
  "id": "statement:pikachu_contains_no_white",
  "taxonId": "taxon:pokemon_025",
  "characterId": "character:all_colors",
  "value": "state:colors_white",
  "frequency": 0
},
{
  "id": "statement:raichu_contains_yellow",
  "taxonId": "taxon:pokemon_026",
  "characterId": "character:all_colors",
  "value": "state:colors_yellow",
  "frequency": 1
},
{
  "id": "statement:raichu_contains_no_black",
  "taxonId": "taxon:pokemon_026",
  "characterId": "character:all_colors",
  "value": "state:colors_black",
  "frequency": 0
},
{
  "id": "statement:raichu_contains_no_red",
  "taxonId": "taxon:pokemon_026",
  "characterId": "character:all_colors",
  "value": "state:colors_red",
  "frequency": 0
},
{
  "id": "statement:raichu_contain_brown",
  "taxonId": "taxon:pokemon_026",
  "characterId": "character:all_colors",
  "value": "state:colors_brown",
  "frequency": 1
},
{
  "id": "statement:raichu_contains_white",
  "taxonId": "taxon:pokemon_026",
  "characterId": "character:all_colors",
  "value": "state:colors_white",

```



```

        "frequency": 1
    }
],
"userRequirements": [
    {
        "id": "requirement:catch",
        "title": "Catching required",
        "warning": "To answer this, you have to catch the Pokémon
first.",
        "description": "1. Select a pokéball color.\n2. Hold the ball,
spinning it a few times.\n3. Fling the pokéball towards the Pokémon,
adjusting for the curveball generated from spinning the ball.\n4. Try
to hit the circle when it is at its smallest.",
        "descriptionUrl": "https://niantic.helpshift.com/hc/en/
6-pokemon-go/faq/102-finding-catching-wild-pokemon/"
    }
],
"externalServices": [
    {
        "id": "service:wikidata",
        "title": "Wikidata",
        "url": "https://www.wikidata.org/w/api.php"
    },
    {
        "id": "service:example_api",
        "title": "Example",
        "description": "Gives the probability for a taxon, given its
weight and location.",
        "url": "https://api.example.com"
    }
],
"mediaElements": [
    {
        "id": "media:pointy_tail",
        "mediaElement": {
            "file": [
                {
                    "url": "https://artsdatabanken.no/pointy_100.png",
                    "width": 100,
                    "height": 100,
                    "license": "https://creativecommons.org/licenses/by/4.0/",
                    "creator": "person:wouterkoch"
                },
                {
                    "url": "https://artsdatabanken.no/pointy_250.png",
                    "width": 250,
                    "height": 250,
                    "license": "https://creativecommons.org/licenses/by/4.0/",
                    "creator": "person:wouterkoch"
                }
            ]
        }
    }
]
}

```

},	463
{	464
"id": "media:lobed_tail",	465
"mediaElement": {	466
"file": [	467
{	468
"url": "https://artsdatabanken.no/lobed_100.png",	469
"width": 100,	470
"height": 100,	471
"license": "https://creativecommons.org/licenses/by/4.0/",	472
"creator": "person:wouterkoch"	473
},	474
{	475
"url": "https://artsdatabanken.no/lobed_250.png",	476
"width": 250,	477
"height": 250,	478
"license": "https://creativecommons.org/licenses/by/4.0/",	479
"creator": "person:wouterkoch"	480
}	481
]	482
}	483
}	484
]	485
}	486
	487