

Select solutions for exam practice

Difficult SQL query solution

Note that the same track can appear multiple times if it appears on several albums from the same year (the question does not specify this case)

```
WITH TrackData AS
    SELECT Tracks.title, length,
           Album.title AS AlbumTitle, yearReleased
FROM Tracks JOIN TracksOnAlbum ON trackId=track
      JOIN Albums ON album=albumId
WHERE
    length = SELECT MAX(length) FROM Tracks

SELECT title, length, AlbumTitle
FROM TrackData
WHERE
    yearReleased = SELECT MIN(yearReleased)
                  FROM TrackData
```

Solution to JSON(1a)

```
{ "type": "object",  
  "properties": {  
    "name":      { "type": "string" },  
    "children":  { "type": "array",  
                  "items": { "$ref": "#" } }  
  },  
  "required": [ "name" ]  
}
```

Solution to JSON(1b)

```
{ "name": "CarlGustaf", "children": [  
  { "name": "Victoria", "children": [  
    { "name": "Estelle", "children": [] },  
    { "name": "Oscar", "children": [] }  
  ] },  
  { "name": "CarlPhilip", "children": [  
    { "name": "Alexander", "children": [] }  
  ] },  
  { "name": "Madeleine", "children": [  
    { "name": "Leonore", "children": [] },  
    { "name": "Nicolas", "children": [] }  
  ] }  
] }
```

Solution to JSON 1c

- `$.children[2]..name`
- Note that this assumes Madeleine is always the third child of the root node
- Here is one that finds all children of any second generation child named Madeleine:
`$.children.*[?(@.name=="Madeleine")]..name`
- Here is one that finds all descendants of everyone named Madeleine:
`$..[?(@.name=="Madeleine")]..name`

Solution to JSON (2)

```
{ "type": "object",  
  "oneOf":  
    [{ "properties": {  
        "name": { "type": "string" },  
        "job": { "type": "string" },  
        "salary": { "type": "number" },  
        "school": false  
      },  
      "required": [ "name", "job" ]  
    },  
    { "properties": {  
        "name": { "type": "string" },  
        "job": false,  
        "salary": false,  
        "school": { "type": "string" }  
      },  
      "required": [ "name", "school" ]  
    }  
  ]  
}
```