Assignment #3 - Manage different FHIR reference types

Based on the FHIR Bundle below,

1) Identify all the FHIR references and classify them into one of the five possible types: absolute, relative, container, identified, bundled
2) Calculate the age of the Patient at the moment of the immunization
3) Can you obtain additional information about the performer through a FHIR API? Why?

```
{
   "resourceType": "Bundle",
   "id": "bundle-example-immunization",
   "type": "collection",
   "entry": [
       {
           "fullUrl":
"urn:uuid:74e0f4db-0c6d-4b1d-8b6e-0f0d0d1f1c3a",
           "resource": {
               "resourceType": "Encounter",
               "contained": [
                   {
                       "resourceType": "Location",
                       "id": "ContainedLocation",
                       "name": "Holy Family Hospital Pavillion
442",
```

```json
                    "address": {
                        "line": [
                            "123 Main St"
                        ],
                        "city": "Springfield",
                        "state": "IL",
                        "postalCode": "62701"
                    },
                    "identifier": [
                        {
                            "system":
"http://holyfamilyhosp.org/encounter-location",
                            "value": "1234567890-442"
                        }
                    ]
                }
            ],
            "status": "finished",
            "class": {
                "system":
"http://terminology.hl7.org/CodeSystem/v3-ActCode",
                "code": "AMB",
                "display": "Ambulatory Encounter"
            },
            "subject": {
                "reference":
"https://ahipdemo.net/server/fhir/Patient/example",
                "display": "Amy Shaw"
            },
            "period": {
                "start": "2025-11-19T12:46:57-08:00",
                "end": "2025-11-19T13:46:57-08:00"
```

```json
                },
                "location": [{
                    "location":
                    {"reference": "#ContainedLocation",
                    "display": "Holy Family Hospital Pavillion
442"

                    }
                }],
                "serviceProvider": {
                    "reference":
"http://hl7.org/fhir/sid/us-npi/fhir/1234567890",
                    "display": "Holy Family Hospital"
                }
            }
        },
        {
            "fullUrl":
"urn:uuid:74e0f4db-0c6d-4b1d-8b6e-0f0d0d1f1c3b",
            "resource": {
                "resourceType": "Immunization",
                "text": {
                    "status": "generated",
                    "div": "<div
xmlns=\"http://www.w3.org/1999/xhtml\"><p
class=\"res-header-id\"><b>redacted</b></div>"
                },
                "status": "completed",
                "vaccineCode": {
                    "coding": [
                        {
                            "system":
"http://hl7.org/fhir/sid/cvx",
```

```json
                                "code": "197",
                                "display": "influenza, high-dose,
quadrivalent"
                        },
                        {
                                "system":
"http://hl7.org/fhir/sid/ndc",
                                "code": "49281012165",
                                "display": "FLUZONE High-Dose
Quadrivalent Northern Hemisphere, 10 SYRINGE, GLASS in 1 PACKAGE
(49281-121-65) > .7 mL in 1 SYRINGE, GLASS (49281-121-88)
(package)"
                        }
                ],
                "text": "influenza, high-dose, quadrivalent"
        },
        "patient": {
                "reference":
"https://ahipdemo.net/server/fhir/Patient/example",
                "display": "Amy Shaw"
        },
        "encounter": {
                "reference":
"urn:uuid:74e0f4db-0c6d-4b1d-8b6e-0f0d0d1f1c3a",
                "display": "Office Visit"
        },
        "occurrenceDateTime":
"2020-11-19T12:46:57-08:00",
        "primarySource": false,
        "lotNumber": "AAJN11K",
        "performer": [
                {
```

```json
                    "actor": {
                        "identifier": {
                            "system":
"http://hl7.org/fhir/sid/us-npi",
                            "value": "1234567891"
                        },
                        "display": "Dr Ronald Bone"
                    }
                }
            ]
        }
    }
    ]
}
```