REQUIRED REQUIREMENTS:

- Java 8
- Maven 3.0
- node.js
- npm

TESTING THE APP:

1. Unzip the project
2. Run script $ ./run.sh
3. Verify UI running at localhost:3000
4. Verify radiograph-service running at localhost:8888

LIMITATIONS:

- The app does not have security feature. The filter is setup at the backend for security implementation but not yet fully implemented. The UI does not have an authentication mechanism. Any doctor users can use the app.
- HTTP get and post request URLs from the UI are hardcoded to http://localhost:8888 which is the port of the radiograph-service.
- Front end URL is hardcoded to http://localhost:3000
- When adding new patient, a Doctor field is added. My objective should be that this field doesn't need to be there and let the front end automatically fill this field of the current user of the app.

PROJECT INFORMATION

There are two project directories in Technical-Assignment folder. First is the "radiograph-service" folder which is the backend implementation and the second one is "UI" folder which is the frontend implementation.

Source code is available at my github account:
https://github.com/jferrater/Technical-Assignment

Backend Info

The radiograph-service is a maven project. Spring Boot is use for the project with the following:

- Spring Data REST
- Spring Data Jpa for my persistence layer
- H2Database (for testing purposes but can be replaced with MySql)

Spring Boot allows developer to have a quick start with implementing web services. Available endpoints are documented below.

The radiograph-service has three REST repositories: DoctorRepository, PatientRepository and RadiographRepository. Note that all endpoints related to Doctors do not have UI integration but can be verified using REST Client.

Frontend Info

The framework use for the UI is AngularJS2 with Bootstrap as the framework for developing the UI. This framework allows developer to have a quick start in developing Web UI. The UI is consuming REST endpoints of the backend, radiograph-service.

The home page has three elements**: Search Patient Form, Add Patient and Patients.**

Search Patient:

Entering patient's social security number will display the result. The result has the name of the patient and a View Patient Details button. Clicking this button will direct you to the patient detail page where you can add new radiograph data and view radiograph data history.

Add Patient:

Clicking Add Patient button will direct you to add patient page. Fill up the form and click submit. After submit a new form is displayed for adding radiograph data.

Patients:

Clicking Patients button will display all patients with the name of the patient, the doctor of the patient and the View Patient Details button. Clicking this button will direct you to patient detail page where you can add new radiograph data and view radiograph data history.

AVAILABLE ENDPOINTS:

Install Postman Chrome plugin or other REST client app to verify the endpoints. All endpoints required Content-type application/json header.

1) Root service:

GET http://localhost:8888

Header: Content-Type: application/json

Response:


```
{
 "_links": {
   "radiographs": {
     "href": "http://localhost:8888/radiographs"
   },
   "patients": {
     "href": "http://localhost:8888/patients"
   },
   "doctors": {
     "href": "http://localhost:8888/doctors"
   },
   "profile": {
     "href": "http://localhost:8888/profile"
   }
 }
}
```

2) Getting patients list:

GET http://localhost:8888/patients
Header: Content-Type: application/json

Response:


```
{
  "_embedded": {
    "patients": [
      {
        "Id": 1,
        "SocialSecurityNumber": "19850127",
        "FirstName": "Joffry",
        "LastName": "Ferrater",
        "Age": 31,
        "Doctor": "James",
        "_links": {
          "self": {
            "href": "http://localhost:8888/patients/1"
          },
          "patient": {
            "href": "http://localhost:8888/patients/1"
          },
          "radiographs": {
            "href": "http://localhost:8888/patients/1/radiographs"
          }
        }
      },
    “_links": {
    "self": {
      "href": "http://localhost:8888/patients"
    },
    "profile": {
      "href": "http://localhost:8888/profile/patients"
    },
    "search": {
      "href": "http://localhost:8888/patients/search"
    }
  }
}
```


3) Add new patient:

POST http://localhost:8888/patients
Header: Content-Type: application/json

Request:


```
      {
       "SocialSecurityNumber": "19800912",
       "FirstName": "Jolly Jae",
       "LastName": "Ompod",
       "Age": 36,
       "Doctor": "Bond"
      }
```

Response:


```
{
  "Id": 4,
  "SocialSecurityNumber": "19800912",
  "FirstName": "Jolly Jae",
  "LastName": "Ompod",
  "Age": 36,
  "Doctor": "Bond",
  "_links": {
        "self": {
          "href": "http://localhost:8888/patients/4"
        },
        "patient": {
          "href": "http://localhost:8888/patients/4"
        },
        "radiographs": {
          "href": "http://localhost:8888/patients/4/radiographs"
        }
  }
}
```


4) Get patient details by id.

GET http://localhost:8888/patients/1
Header: Content-Type: application/json

Response:


```
{
  "Id": 1,
  "SocialSecurityNumber": "19850127",
  "FirstName": "Joffry",
  "LastName": "Ferrater",
  "Age": 31,
  "Doctor": "James",
  "_links": {
        "self": {
          "href": "http://localhost:8888/patients/1"
        },
        "patient": {
          "href": "http://localhost:8888/patients/1"
        },
        "radiographs": {
          "href": "http://localhost:8888/patients/1/radiographs"
        }
  }
}
```


5) Search user by Social Security Number:
GET http://localhost:8888/patients/search/patient?socialSecurityNumber=19850127
Header: Content-Type: application/json

Response:


```
{
  "Id": 1,
  "SocialSecurityNumber": "19850127",
  "FirstName": "Joffry",
  "LastName": "Ferrater",
  "Age": 31,
```

```
  "Doctor": "James",
  "_links": {
        "self": {
          "href": "http://localhost:8888/patients/1"
        },
        "patient": {
          "href": "http://localhost:8888/patients/1"
        },
        "radiographs": {
          "href": "http://localhost:8888/patients/1/radiographs"
        }
  }
}
```


6) Search patients by Doctor

GET http://localhost:8888/patients/search/patients?doctor=James
Header: Content-Type: application/json

Response:


```
{
  "_embedded": {
        "patients": [
          {
                "Id": 1,
                "SocialSecurityNumber": "19850127",
                "FirstName": "Joffry",
                "LastName": "Ferrater",
                "Age": 31,
                "Doctor": "James",
                "_links": {
                  "self": {
                        "href": "http://localhost:8888/patients/1"
                  },
                  "patient": {
                        "href": "http://localhost:8888/patients/1"
                  },
                  "radiographs": {
                        "href": "http://localhost:8888/patients/1/radiographs"
                  }
                }
          }
        ]
  },
  "_links": {
        "self": {
          "href": "http://localhost:8888/patients/search/patients?doctor=James"
        }
  }
}
```


7) Get Radiograph data history by patient.

GET http://localhost:8888/patients/1/radiographs
Header: Content-Type: application/json

Response:

```
{
  "_embedded": {
        "radiographs": [
          {
              "Reason": "Not feeling well",
              "Description": "Radiograph of Joffry",
              "DateOfTest": "2017-01-17"
          }
        ]
  },
  "_links": {
        "radiograph": {
          "href": "http://localhost:8888/radiographs/1"
        }
  }
}
```


8) Add new Radiograph data to patient.

POST http://localhost:8888/patients/1/radiographs
Header: Content-Type: application/json

Request:


```
{
"Reason": "Back ache",
"Description": "Another test"
}
```


Response:


```
{
  "Reason": "Back ache",
  "Description": "Another test",
  "DateOfTest": "2017-01-17",
  "_links": {
        "radiograph": {
          "href": "http://localhost:8888/radiographs/4"
        },
        "patient": {
          "href": "http://localhost:8888/patients/1"
        }
  }
}
```


9) Get all radiograph

GET http://localhost:8888/radiographs
Header: Content-Type: application/json

Response:


```
{
  "_embedded": {
        "radiographs": [
          {
              "Reason": "Not feeling well",
```

```
                "Description": "Radiograph of Joffry",
                "DateOfTest": "2017-01-17",
                "_links": {
                  "self": {
                        "href": "http://localhost:8888/radiographs/1"
                  },
                  "radiograph": {
                        "href": "http://localhost:8888/radiographs/1"
                  },
                  "patient": {
                        "href": "http://localhost:8888/radiographs/1/patient"
                  }
                }
          },
          {
                "Reason": "Cough",
                "Description": "Radiograph of Kumar",
                "DateOfTest": "2017-01-17",
                "_links": {
                  "self": {
                        "href": "http://localhost:8888/radiographs/2"
                  },
                  "radiograph": {
                        "href": "http://localhost:8888/radiographs/2"
                  },
                  "patient": {
                        "href": "http://localhost:8888/radiographs/2/patient"
                  }
                }
          },
          ]
  },
  "_links": {
          "self": {
            "href": "http://localhost:8888/radiographs"
          },
          "profile": {
            "href": "http://localhost:8888/profile/radiographs"
          }
  }
}
```


10) Get radiograph by id

GET http://localhost:8888/radiographs/1

Header: Content-Type: application/json

Response:


```
{
  "Reason": "Not feeling well",
  "Description": "Radiograph of Joffry",
  "DateOfTest": "2017-01-17",
  "_links": {
          "self": {
            "href": "http://localhost:8888/radiographs/1"
          },
          "radiograph": {
            "href": "http://localhost:8888/radiographs/1"
          },
```

```
        "patient": {
          "href": "http://localhost:8888/radiographs/1/patient"
        }
    }
}
```


11) Create new Doctor

POST http://localhost:8888/doctors

Header: Content-Type: application/json

Request:


```
{
    "Username": "Joffry"
}
```


Response:


```
{
  "Username": "Joffry",
  "_links": {
    "self": {
      "href": "http://localhost:8888/doctors/4"
    },
    "doctor": {
      "href": "http://localhost:8888/doctors/4"
    }
  }
}
```


12) Get Doctor detail

GET http://localhost:8888/doctors/4

Header: Content-Type: application/json

Response:


```
{
  "Username": "Joffry",
  "_links": {
    "self": {
      "href": "http://localhost:8888/doctors/4"
    },
    "doctor": {
      "href": "http://localhost:8888/doctors/4"
    }
  }
}
```


12) Get all Doctors

GET http://localhost:8888/doctors

Header: Content-Type: application/json

Response:


```
{
  "_embedded": {
    "doctors": [
      {
        "Username": "James",
```

```
      "_links": {
        "self": {
          "href": "http://localhost:8888/doctors/1"
        },
        "doctor": {
          "href": "http://localhost:8888/doctors/1"
        }
      }
    },
    {
      "Username": "Bond",
      "_links": {
        "self": {
          "href": "http://localhost:8888/doctors/2"
        },
        "doctor": {
          "href": "http://localhost:8888/doctors/2"
        }
      }
    },
    {
      "Username": "Joffry",
      "_links": {
        "self": {
          "href": "http://localhost:8888/doctors/4"
        },
        "doctor": {
          "href": "http://localhost:8888/doctors/4"
        }
      }
    }
  ]
 },
 "_links": {
  "self": {
   "href": "http://localhost:8888/doctors"
  },
  "profile": {
   "href": "http://localhost:8888/profile/doctors"
  }
 }
}
```