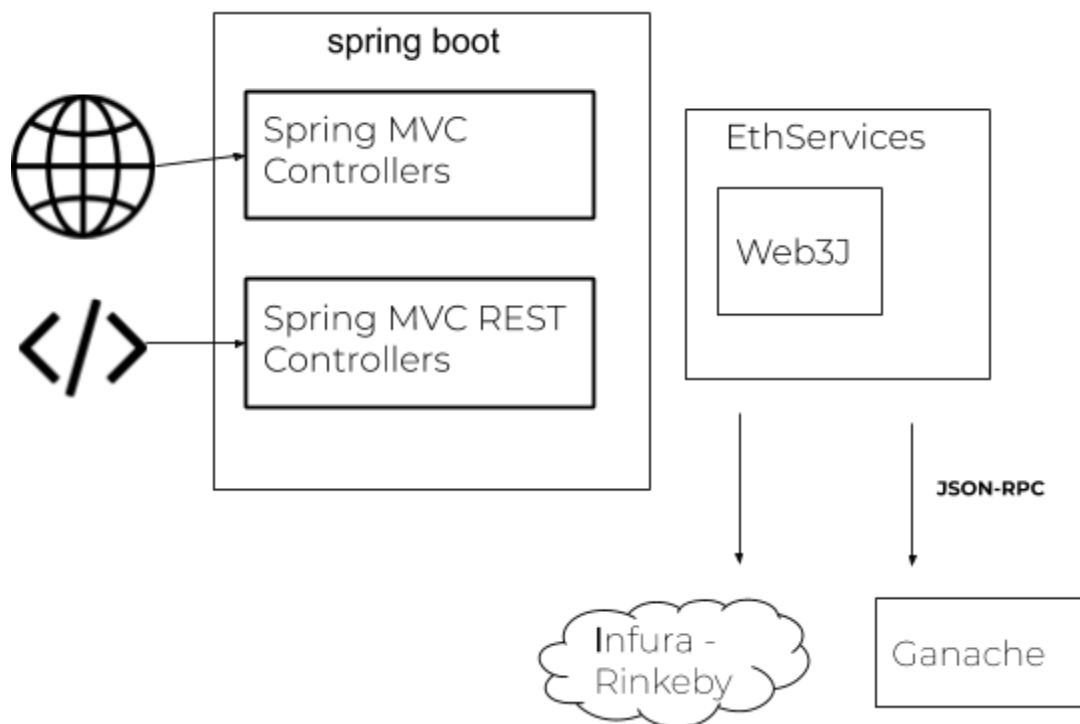# Capstone Project - Architecture Document

1. Architecture

The application is built as a Java Spring boot - spring web mvc starter app. Architecture is three layered for simplicity

2. Technology Stack

1. spring boot 2.1.5 Release
2. spring mvc starter - 5
3. web3j - 4.3.0
4. thymeleaf starter 2.1.5 Release
5. web3j contract codegen - 4.3.0

3. Transactions

Add Customer
Update Customer
Get Customer
Get All Customers

Model Object Customer:

```
private String firstName;
private String lastName;
private String state;
private String city;
private String streetAddress;
@DateTimeFormat(iso = DateTimeFormat.ISO.DATE)
private Date dob = Calendar.getInstance().getTime();
```

4. Solidity Contract

struct Customer {...
mapping (string => Customer) customers;
string [] customerSSNIds;

addCustomer, updateCustomer, getCustomerCount, getCustomerById,
getCustomerBySSN

5. REST Interfaces

GET http://localhost:8090/v1/customers

```json
[
    {
        "ssn": "233-232-323",
        "firstName": "Yash",
        "lastName": "Sharma",
        "state": "Delhi",
        "city": "Delhi",
        "streetAddress": "77 Mausam Vihar",
        "dob": "2019-09-23T00:00:00.000+0000"
    },
    {
        "ssn": "982-344-76",
        "firstName": "Sandeep",
        "lastName": "Singh",
        "state": "Mumbai",
        "city": "Maharashtra",
        "streetAddress": "ABC Road",
        "dob": "2019-09-23T00:00:00.000+0000"
    },
    {
        "ssn": "123-323-23",
        "firstName": "Jack",
        "lastName": "Max",
        "state": "Delhi",
        "city": "Delhi",
        "streetAddress": "77 Mausam Vihar",
        "dob": "2019-09-23T00:00:00.000+0000"
    }
]
```

Capstone Project - Architecture Document

GET http://localhost:8090/v1/customer/321-344-76

```
{
    "ssn": "321-344-76",
    "firstName": "Kevin",
    "lastName": "Singh",
    "state": "Jaipur",
    "city": "Maharashtra",
    "streetAddress": "ABC Road Street",
    "dob": "2019-09-23T00:00:00.000+0000"
}
```

POST http://localhost:8090/v1/customer

Request:

```
{
    "ssn": "321-344-76",
    "firstName": "Kevin",
    "lastName": "Singh",
    "state": "Jaipur",
    "city": "Maharashtra",
    "streetAddress": "ABC Road Street",
    "dob": "2019-09-23T00:00:00.000+0000"
}
```

Response:

0xdc4bd497b1a60c7cbccf6f30a6b993aade67fff714bec55fa703f2a9bd1453a4

Capstone Project - Architecture Document

PUT http://localhost:8090/v1/customer

Request:

```
{
   "ssn": "321-344-76",
   "firstName": "Kevin",
   "lastName": "Singh",
   "state": "Jaipur",
   "city": "Maharashtra",
   "streetAddress": "ABC Road Street",
   "dob": "2019-09-23T00:00:00.000+0000"
}
```

Response:

0xdc4bd497b1a60c7cbccf6f30a6b993aade67fff714bec55fa703f2a9bd1453a4

Capstone Project - Architecture Document

6. **Screen Shots**

Home Screen (Get All Customers)

Capstone

Customers

SSN	First Name	Last Name	City	State	Street Address	DoB	
233-232-323	Yash	Sharma	Delhi	Delhi	77 Mausam Vihar	Mon Sep 23 05:30:00 IST 2019	
982-344-76	Sandeep	Singh	Maharashtra	Mumbai	ABC Road	Mon Sep 23 05:30:00 IST 2019	

Add Customer

Capstone Project - Architecture Document

Add Customer:

Capstone Project - Architecture Document

Update customer