PROJECT 4 : RESTful Backend and SPA Front End (Full Stack)

- Project Name : DollarsBankFullStack

- Domain : Banking (Group Project)

- Application Type : Spring Boot + Restful Web Services

- Architecture Used : Service Oriented Architecture (SOA)

- User Interface : Angular or React SPA Front End

- **Product Overview:**
  - This project is the final phase of the Bank App projects. You may use logic and code from previous weeks projects in the Bank series to be integrated into this one.
  - **Minimum requirements:**
    - Spring Boot RESTful Service Backend with Data persistence (may choose DB)
    - SPA Front End (React or Angular)
  - **Bonus/Optional Expansions**
    - Integrate Micro services or create own micro services and use Service Architecture
    - Deployment (***pursue free options)*** , easiest and free is Heroku, however AWS will help with relevant job skills (just be sure to work within the free tier options).
  - **Agile - Scrum:**
    - Teams will have a Team Lead and Scrum Master
    - Will maintain Product Backlog with User Stories
    - Will work with weekly Sprint cycles (have prepared presentation for Product Owner (TAs) at date TBD for mid cycle and final).

EXECUTION (SCREENSHOTS)

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:: Spring Boot ::        (v2.1.13.RELEASE)

2020-07-24 20:16:26.125  INFO 3168 --- [  restartedMain] com.dollarsbank.DollarsBankApplication   : Starting DollarsBankApplication on DESKTOP-IFP1VO4 with PID 3168
(Z:\_work\_sts\DollarsBankSpringBootRestAppV1\target\classes started by Enzo in Z:\_work\_sts\DollarsBankSpringBootRestAppV1)
2020-07-24 20:16:26.125  INFO 3168 --- [  restartedMain] com.dollarsbank.DollarsBankApplication   : No active profile set, falling back to default profiles: default
2020-07-24 20:16:26.156  INFO 3168 --- [  restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : Devtools property defaults active! Set 'spring.devtools.add-properties' to 'false' to disable
2020-07-24 20:16:26.156  INFO 3168 --- [  restartedMain] .e.DevToolsPropertyDefaultsPostProcessor : For additional web related logging consider setting the 'logging.level.web' property to 'DEBUG'
2020-07-24 20:16:26.624  INFO 3168 --- [  restartedMain] .s.d.r.c.RepositoryConfigurationDelegate : Bootstrapping Spring Data JPA repositories in DEFAULT mode.
2020-07-24 20:16:26.669  INFO 3168 --- [  restartedMain] .s.d.r.c.RepositoryConfigurationDelegate : Finished Spring Data repository scanning in 32ms. Found 1 JPA repository interfaces.
2020-07-24 20:16:27.090  INFO 3168 --- [  restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat initialized with port(s): 5555 (http)
2020-07-24 20:16:27.106  INFO 3168 --- [  restartedMain] o.apache.catalina.core.StandardService   : Starting service [Tomcat]
2020-07-24 20:16:27.106  INFO 3168 --- [  restartedMain] org.apache.catalina.core.StandardEngine  : Starting Servlet engine: [Apache Tomcat/9.0.31]
2020-07-24 20:16:27.168  INFO 3168 --- [  restartedMain] o.a.c.c.C.[.[localhost].[/dollarsbank]   : Initializing Spring embedded WebApplicationContext
2020-07-24 20:16:27.168  INFO 3168 --- [  restartedMain] o.s.web.context.ContextLoader            : Root WebApplicationContext: initialization completed in 1012 ms
2020-07-24 20:16:27.262  INFO 3168 --- [  restartedMain] com.zaxxer.hikari.HikariDataSource       : HikariPool-1 - Starting...
2020-07-24 20:16:27.340  INFO 3168 --- [  restartedMain] com.zaxxer.hikari.HikariDataSource       : HikariPool-1 - Start completed.
2020-07-24 20:16:27.371  INFO 3168 --- [  restartedMain] o.hibernate.jpa.internal.util.LogHelper  : HHH000204: Processing PersistenceUnitInfo [
        name: default
        ...]
2020-07-24 20:16:27.418  INFO 3168 --- [  restartedMain] org.hibernate.Version                    : HHH000412: Hibernate Core {5.3.15.Final}
2020-07-24 20:16:27.418  INFO 3168 --- [  restartedMain] org.hibernate.cfg.Environment            : HHH000206: hibernate.properties not found
2020-07-24 20:16:27.559  INFO 3168 --- [  restartedMain] o.hibernate.annotations.common.Version   : HCANN000001: Hibernate Commons Annotations {5.0.4.Final}
2020-07-24 20:16:27.637  INFO 3168 --- [  restartedMain] org.hibernate.dialect.Dialect            : HHH000400: Using dialect: org.hibernate.dialect.MySQL5InnoDBDialect
2020-07-24 20:16:28.049  INFO 3168 --- [  restartedMain] j.LocalContainerEntityManagerFactoryBean : Initialized JPA EntityManagerFactory for persistence unit 'default'
2020-07-24 20:16:28.081  INFO 3168 --- [  restartedMain] o.s.b.d.a.OptionalLiveReloadServer       : LiveReload server is running on port 35729
2020-07-24 20:16:28.346  INFO 3168 --- [  restartedMain] o.s.s.concurrent.ThreadPoolTaskExecutor  : Initializing ExecutorService 'applicationTaskExecutor'
2020-07-24 20:16:28.377  WARN 3168 --- [  restartedMain] aWebConfiguration$JpaWebMvcConfiguration : spring.jpa.open-in-view is enabled by default. Therefore, database queries may be performed during
view rendering. Explicitly configure spring.jpa.open-in-view to disable this warning
2020-07-24 20:16:28.520  INFO 3168 --- [  restartedMain] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat started on port(s): 5555 (http) with context path '/dollarsbank'
2020-07-24 20:16:28.520  INFO 3168 --- [  restartedMain] com.dollarsbank.DollarsBankApplication   : Started DollarsBankApplication in 2.597 seconds (JVM running for 3.286)
```

EXECUTION (SCREENSHOTS)
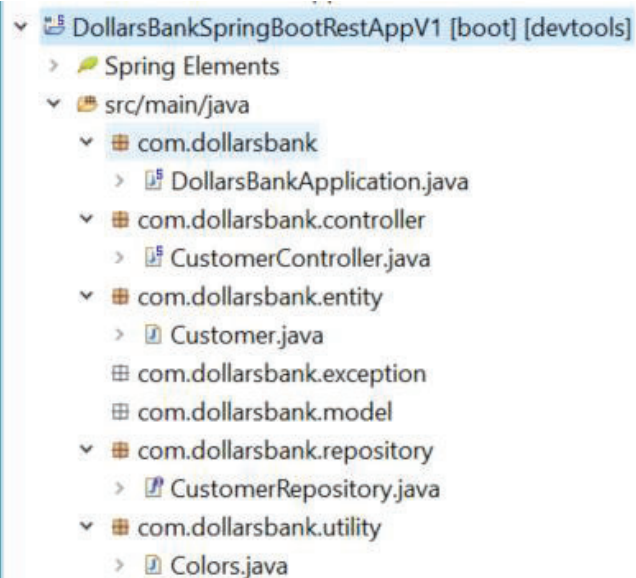
PROJECT STRUCTURE (Before Optional Microservices)

- ∨ 🖥 DollarsBankSpringBootRestAppV1 [boot] [devtools]
  - › 🍃 Spring Elements
  - ∨ 🗁 src/main/java
    - ∨ ⊞ com.dollarsbank
      - › 📄 DollarsBankApplication.java
    - ∨ ⊞ com.dollarsbank.controller
      - › 📄 CustomerController.java
    - ∨ ⊞ com.dollarsbank.entity
      - › 📄 Customer.java
    - ⊞ com.dollarsbank.exception
    - ⊞ com.dollarsbank.model
    - ∨ ⊞ com.dollarsbank.repository
      - › 📄 CustomerRepository.java
    - ∨ ⊞ com.dollarsbank.utility
      - › 📄 Colors.java

PROJECT 4 : SPRING BOOT + MICROSERVICES (Optional Expansion)

- Project expansion: Microservice add ins using Netflix's Spring Cloud Services such as Eureka Server or Zuul
- Domain : Banking
- Application Type : Spring Boot + Micro services
- Architecture Used : Micro services Architecture (SOA)
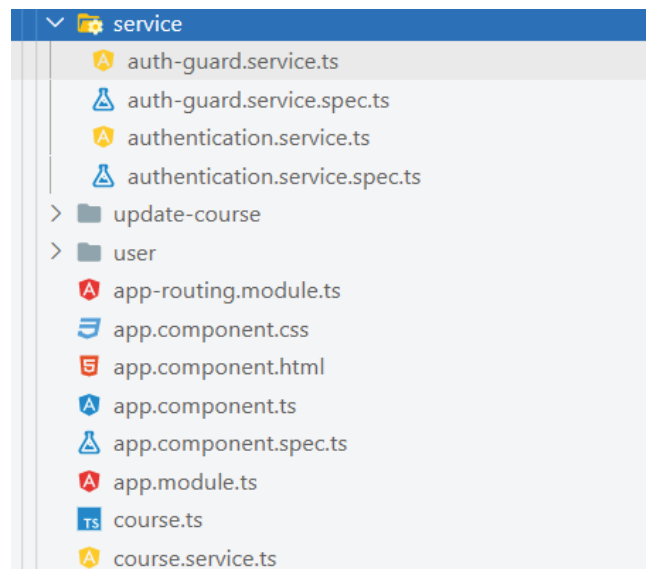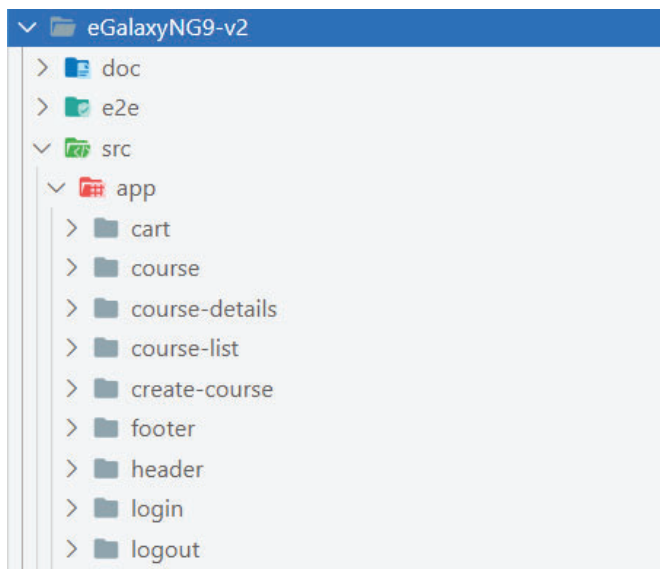- User Interface : Angular or React Front End

SCREENSHOTS

```java
@EnableEurekaServer
@SpringBootApplication
public class EurekaServerApplication {

    public static void main(String[] args) {
        SpringApplication.run(EurekaServerApplication.class, args);
    }

}
```

```
com.netflix.discovery.DiscoveryClient        : Initializing Eureka in region us-east-1
com.netflix.discovery.DiscoveryClient        : Client configured to neither register nor query for data.
com.netflix.discovery.DiscoveryClient        : Discovery Client initialized at timestamp 1595602851288 with initial instances count: 0
c.n.eureka.DefaultEurekaServerContext        : Initializing ...
c.n.eureka.cluster.PeerEurekaNodes           : The replica size seems to be empty. Check the route 53 DNS Registry
c.n.e.registry.AbstractInstanceRegistry      : Finished initializing remote region registries. All known remote regions: []
c.n.eureka.DefaultEurekaServerContext        : Initialized
o.s.b.a.e.web.EndpointLinksResolver          : Exposing 2 endpoint(s) beneath base path '/actuator'
o.s.c.n.e.s.EurekaServiceRegistry            : Registering application EUREKA with eureka with status UP
o.s.c.n.e.server.EurekaServerBootstrap       : Setting the eureka configuration..
o.s.c.n.e.server.EurekaServerBootstrap       : Eureka data center value eureka.datacenter is not set, defaulting to default
o.s.c.n.e.server.EurekaServerBootstrap       : Eureka environment value eureka.environment is not set, defaulting to test
o.s.c.n.e.server.EurekaServerBootstrap       : isAws returned false
o.s.c.n.e.server.EurekaServerBootstrap       : Initialized server context
c.n.e.r.PeerAwareInstanceRegistryImpl        : Got 1 instances from neighboring DS node
c.n.e.r.PeerAwareInstanceRegistryImpl        : Renew threshold is: 1
c.n.e.r.PeerAwareInstanceRegistryImpl        : Changing status to UP
e.s.EurekaServerInitializerConfiguration     : Started Eureka Server
```

SCREENSHOTS (ANGULAR FRONTEND Example, can also choose React App instead)

TECHNOLOGIES & TOOLS USED