**Lab 6 Exercise 2**

**System Name:** Blood Donation System

**System Description:** The purpose of the system I to accommodate all the needs in one system for users to access. The system allows users to view donation requirements, find blood donation centers and book an appointment. Below is a structured guide on how define the Donation model, and implement the required functionalities:

**Doner Model:** NationalID, Name, Age, Weight, PhoneNumber, Email, BloodType

**Validation:**

* NationalID
* Cannot be Null: @NotEmpty
* Must be 10 Characters : @Size(min=10, max=10)
* Name
* Cannot be Null: @NotEmpty
* Must be more than 3 Characters: @Size(min=2)
* Must be Characters: @Pattern(regexp=”^[a-z A-Z]+$”)
* Age
* Cannot be Null: @NotNull
* Must be above 18: @Size(min=18)
* Must be Number: @Digits(integer= Integer.MAX\_VALUE, fraction=0)
* Weight
* Cannot be Null: @NotNull
* Must be above 50: @Size(min=50)
* Must be Number: @Digits(integer= Integer.MAX\_VALUE, fraction=0)
* Email
* Cannot be Null: @NotEmpty
* Must be valid Email: @Email
* PhoneNumber
* Cannot be Null: @NotNull
* Must be 10 Digits : @Size(min=10, max=10)
* Starts with “05”: @Pattern(regexp=”([\\+05](\\\\+05)) [0-10]{10}”)
* Bloodtype
* Cannot be Null: @NotEmpty
* Must be valid blood type: @Pattern(regexp=”^(A|B|O|AB)$”)

**Center Model:** Name, Date, Time

**Validation:**

* Name
* Cannot be Null: @NotEmpty
* Must be more than 5 Characters: @Size(min=2)
* Must be Characters: @Pattern(regexp=”^[a-z A-Z]+$”)
* Date
* Cannot be Null: @NotNull
* Should be a date in the present or future: @FutureOrPresent
* Should be a date : @DateTimeFormat(pattern=”yyyy-MM-dd”)
* Time
* Cannot be Null: @NotNull
* Should be valid format 24Hr: @Pattern(regexp=”^[0-2][[0-3]:[0-5][0-9]$”)
* Should be a time : @DateTimeFormat(pattern=”HH:mm:ss”)

**DonerController Endpoints:**

1**. Get all Donors:** Retrieves a list of all Donors.

2. **Add a new Donor**: Adds a new Donor to the system.

3. **Update a Donor**: Updates an existing Donor information.

4. **Delete a Donor:** Deletes an Donor from the system.

5. **Search Donor by Bloodtype:** Retrieves a list of donors based on their blood type (A-B-O-AB).

6. **Get Donor by Age Range:** Retrieves a list of Donors within a specified age range.

7. **Get Donor by Weight Range:** Retrieves a list of Donors within a specified weight range.

**CenterController Endpoints:**

1. **Get all Center:** Retrieves a list of all centers.

2. **Add a new Center:** Adds a new Center to the system.

3. **Update a Center:** Updates existing Center information.

4. **Delete a Center:** Deletes a Center from the system.

5. **Search Center by Name:** Retrieves a list of centers based on their name.

6. **Search Center by Date:** Retrieves a list of centers based on date.

7. **Search Center by Time:** Retrieves a list of centers based on time.

8. **BookApointment:** Book Appointment by specific Center,Date,Time.