

SAR (Saudi Arabia Railways)

Brief Intro

Saudi Arabia Railways (SAR) has a lot of Systems and Models that manage various functionalities that represent Business and Operational parts that are key to success like:

- Passenger model.
- Ticket model.
- Train Model.
- Station Model.
- Employee Model.
- Payment Model.

And a lot more.....

Model Validation Checklist

I Choose three models to be validated and Analyzed from SAR System which are:

- Passenger model.
- Ticket model.
- Train Model.

Passenger model Validation CheckList:

Attribute	Validation Rules	Failure Result
passengerID	<ul style="list-style-type: none"> - Must not be empty - should be at least 3 characters long. 	Login and booking mismatches.
name	<ul style="list-style-type: none"> - Must contain only letters and spaces. 	Incorrect Information
email	<ul style="list-style-type: none"> - Must be in a valid format 	Incorrect contact information
phoneNumber	<ul style="list-style-type: none"> - Must be a number - Must start with "05" - exactly 10 digits. 	Incorrect contact information
age	<ul style="list-style-type: none"> - Must be a number - Must be at least 5 years old 	Ineligible passengers are registered

Ticket model Validation CheckList:

Attribute	Validation Rules	Failure Result
ticketID	<ul style="list-style-type: none"> - Must not be empty - Must be unique - should be at least 3 characters long. 	Overbooking or fraud
price	<ul style="list-style-type: none"> - Must not be empty - Must be a positive number 	Financial inconsistencies
bookingDate	<ul style="list-style-type: none"> - Must not be empty - Must be Present or Future date 	Wrong Booking times
seatNumber	<ul style="list-style-type: none"> - Must start with a letter - Must contain 2 digits exactly - Must be unique 	Duplicate or Incorrect Seat number

Train model Validation CheckList:

Attribute	Validation Rules	Failure Result
trainID	<ul style="list-style-type: none"> - Must not be empty - Must be unique - should be at least 3 characters long. 	Wrong scheduling
trainName	<ul style="list-style-type: none"> - Must not be empty - Must contain only letters 	Confusion in train listing
capacity	<ul style="list-style-type: none"> - Must not be empty - Must be a positive number - Must have a max of 100 	Wrong Booking times
status	<ul style="list-style-type: none"> - Must not be empty - Must be (active / inactive / maintenance) 	Scheduling inactive trains

Spring Boot Models

Passenger Model

```
@Data  
@AllArgsConstructor  
public class Passenger {  
  
    @NotBlank(message = "passengerID must not be empty")  
    @Size(min = 3, message = "passengerID should be at least 3 characters long")  
    private String passengerID;  
  
    @Pattern(regexp = "^[a-zA-Z\\s]+$", message = "name must contain only letters and  
    spaces")  
    private String name;  
  
    @Email(message = "email must be in a valid format")  
    private String email;  
  
    @Pattern(regexp = "^05\\\\d{8}$", message = "phoneNumber must start with 05 and be exactly  
    10 digits")  
    private String phoneNumber;  
  
    @NotNull(message = "age must not be empty")  
    @Min(value = 5, message = "age must be at least 5 years old")  
    private Integer age;  
}
```

Ticket Model

```
@Data  
@AllArgsConstructor  
public class Ticket {  
  
    @NotBlank(message = "ticketID must not be empty")  
    @Size(min = 3, message = "ticketID should be at least 3 characters long")  
    private String ticketID;  
  
    @NotNull(message = "price must not be empty")  
    @Positive(message = "price must be a positive number")  
    private Double price;  
  
    @NotNull(message = "bookingDate must not be empty")  
    @FutureOrPresent(message = "bookingDate must be present or future date")  
    private LocalDateTime bookingDate;  
  
    @Pattern(regexp = "^[A-Za-z]\\d{2}$", message = "seatNumber must start with a letter and  
    contain exactly 2 digits")  
    private String seatNumber;  
}
```

Train Model

```
@Data  
@AllArgsConstructor  
public class Train {  
  
    @NotBlank(message = "trainID must not be empty")  
    @Size(min = 3, message = "trainID should be at least 3 characters long")  
    private String trainID;  
  
    @NotBlank(message = "trainName must not be empty")  
    @Pattern(regexp = "^[a-zA-Z\\s]+$", message = "trainName must contain only letters")  
    private String trainName;  
  
    @NotNull(message = "capacity must not be empty")  
    @Positive(message = "capacity must be a positive number")  
    @Max(value = 100, message = "capacity must have a max of 100")  
    private Integer capacity;  
  
    @NotBlank(message = "status must not be empty")  
    @Pattern(regexp = "(active|inactive|maintenance)", message = "status must be (active /  
inactive / maintenance)")  
    private String status;  
}
```