

## We will evaluate:

- **Best practices:** Validations and handle exceptions, Intuitive names, and OOP.
- **Solid Principles:** Separation of concerns, Abstraction and scalability, Interface usage, Dependency inversion.
- **Design Patterns:** One or more design patterns implemented to solve the main problem, select the proper channels and send notifications.
- **Architecture:** Well architecture design, have a well defined folder structure and separation of concerns, scalable and prepared for minimum changes on new requirements in the future. (Routes/Controllers/Services/Repositories, DTOs / Interfaces / etc.).
- **Unit Testing:** Tests for each service and function, Multiple test scenarios per function.
- **Database:** Migrations and Seeders, Foreign keys usage (In case of RDBMS), Indexing, Proper data types and length and Load all catalogs in the database (Is a plus).
- **Challenge:** Requirements accomplish, Performance and search methods, Fault tolerant on sending notifications and Scalable to add more notification channels.

# Notification Test

We have to create a notification system that has the ability to receive a message and depending on the category and subscribers, notify these users in the channels they are registered.

It will be 3 message categories:

- Sports
- Finance
- Movies

And there will be 3 types of notifications, each type should have its own class to manage the logic of sending the message independently.

- SMS
- E-Mail
- Push Notification

No notification will actually be sent or the need to communicate with any external APIs, only will register the sent notification in an archive of Logs or in a database.

In the log, it will need to save all the information necessary to identify that the notification has been sent correctly to the respective subscriber, such as the type of message, type of notification, user data, time, etc.

No user administration is required, you can use a Mock of users in the source code, and they must have the following information:

- ID
- Name
- Email
- Phone number
- Subscribed [ ] here you need to list all the categories where the user is subscribed
- Channels [ ] a list of the notification's channels (SMS | E-Mail | Push Notification)

As user interface you need to display 2 main elements.

1. **Submission form.** A simple form to send the message, which will have 2 fields:
  - **Category.** List of available categories.
  - **Message.** Text area, only validate that the message is not empty.
2. **Log history.** A list of all records in the log, sorted from newest to oldest.