What is REST API? State different REST API request Method.

REST (Representational State Transfer) API is an architectural style for designing networked applications. It uses HTTP methods to perform operations on resources, typically represented as JSON or XML data. REST APIs follow the principles of RESTful architecture, which include:

- **Statelessness**: Each request from a client contains all necessary information, and the server does not store any client state.

- **Client-Server Architecture**: The client and server are independent; they interact through HTTP requests and responses.

- **Cacheability**: Responses can be cached to improve performance.

- **Uniform Interface**: Resources are accessed using a common and consistent approach (URI endpoints).

- **Layered System**: The API can have multiple layers (e.g., authentication, data caching, etc.).

1. GET
2. POST
3. PUT
4. PATCH
5. DELETE

What is Django Rest Framework?

Django REST Framework (DRF) is a powerful toolkit for building Web APIs in Django. It simplifies API development by providing built-in authentication, serialization, and view handling.

Key Features of DRF

- **Serialization**: Converts Django models to JSON and vice versa.

- **Authentication & Permissions**: Supports authentication mechanisms like JWT, OAuth, and session authentication.

- **Browsable API**: Provides a web-based interface for testing APIs.

- **Class-Based Views & Viewsets**: Simplifies API development by allowing views to be written in a modular way.

- **Pagination & Filtering**: Helps manage large datasets efficiently.

What is Serializers and De-serializers in Django Rest Framework?

Serializers in DRF allow complex data types (such as Django model instances) to be converted into JSON (or other content types like XML).

Serializers

- Convert Django model instances or QuerySets into JSON format (or other formats).

- Used for API responses (sending data to the client).

Deserializers

- Convert incoming JSON data into Django model instances.

- Used for processing incoming API requests (receiving data from the client).