#Package Diagram

```
classDiagram
    class PresentationLayer {
        <<Interface>>
        +ServiceAPI
        +WebService
    }

    class BusinessLogicLayer {
        +User
        +Place
        +Review
        +Amenity
    }

    class PersistenceLayer {
        +DatabaseManager
        +Database JSON
        +Queries
    }

    PresentationLayer --> BusinessLogicLayer : Facade Pattern
    BusinessLogicLayer --> PersistenceLayer : Database Operations
```

#Class Diagram

```
classDiagram
    class User {
         - String first_name
        - String last_name
        - String email
        - String password
        + register()
        + update_profile()
    }
    class Place {
        - String title
        - String description
        - float price
        - float latitude
        - float longitude
        + create_place()
        + update_place()
        + delete_place()
    }
    class Review {
```

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```
         - int rating
         - String comment
         + create_review()
         + delete_review()
    }
    class Amenity {
         - String name
         - String description
    }
    User "1" -- "*" Place : owns
    Place "1" -- "*" Review : receives
    Place "1" -- "*" Amenity : has
```

#correction Class Diagram

```
classDiagram
    class User {
         - string UUID4 id
         - String first_name
         - String last_name
         - String email
         - String password
         - boolean is_admin
         - String DateTime created_at
         - String DateTime updated_at
         + getUUID4() ID
         + getCreatedAt() datetime
         + getUpdatedAt() datetime
         + register_profile()
         + update_profile()
         + delete_profile()
    }

    class Place {
         - String UUID4 id
         - String title
         - String description
         - float price
         - float latitude
         - float longitude
         - String DateTime created_at
         - String DateTime updated_at
         + getUUID4() ID
         + getCreatedAt() datetime
         + getUpdatedAt() datetime
         + create_place()
         + update_place()
```

```
        + delete_place()
        + list_place()
    }

    class Review {
        - String UUID4 id
        - int rating
        - String comment
        - String DateTime created_at
        - String DateTime updated_at
        + getUUID4() ID
        + getCreatedAt() datetime
        + getUpdatedAt() datetime
        + create_review()
        + delete_review()
        + liste_by_place_review()
    }

    class Amenity {
        - String UUID4 id
        - String name
        - String description
        - String DateTime created_at
        - String DateTime updated_at
        + getUUID4() ID
        + getCreatedAt() datetime
        + getUpdatedAt() datetime
        + liste_amenity()
        + liste_amenity()
        + liste_amenity()
        + liste_amenity()
    }

    User "1" -- "*" Place : owns
    User "1" -- "*" Review : update
    Place "1" -- "*" Review : receives
    Place "1" o-- "*" Amenity : has
```

#Sequence Diagram ##1. User Registration Sequence Diagram

```
sequenceDiagram
    participant User
    participant API
    participant BusinessLogic
    participant Persistence

    User->>API: Create User
```

```
    API->>BusinessLogic: Validate User Data
    BusinessLogic->>Persistence: Save User
    Persistence-->>BusinessLogic: Return Success
    BusinessLogic-->>API: Return User Info
    API-->>User: User Created
```

2. Place Creation Sequence Diagram

```
sequenceDiagram
    participant User
    participant API
    participant BusinessLogic
    participant Persistence

    User->>API: Create Place
    API->>BusinessLogic: Validate Place Data
    BusinessLogic->>Persistence: Save Place
    Persistence-->>BusinessLogic: Return Success
    BusinessLogic-->>API: Return Place Info
    API-->>User: Place Created
```

3. Review Submission Sequence Diagram

```
sequenceDiagram
    participant User
    participant API
    participant BusinessLogic
    participant Persistence

    User->>API: Add Review
    API->>BusinessLogic: Validate Review Data
    BusinessLogic->>Persistence: Save Review
    Persistence-->>BusinessLogic: Return Success
    BusinessLogic-->>API: Return Review Info
    API-->>User: Review Added
```

4. Fetching a List of Places Sequence Diagram

```
sequenceDiagram
    participant User
    participant API
    participant BusinessLogic
    participant Persistence

    User->>API: Fetch Places
    API->>BusinessLogic: Validate Request
    BusinessLogic->>Persistence: Retrieve Places
    Persistence-->>BusinessLogic: Return List
    BusinessLogic-->>API: Return List
```

API-->>User: List of Places