# HBnB API Sequence Diagrams

## 1. User Registration

This diagram illustrates the flow of the user registration process, where a user submits their data to the API, and the information flows through business logic to the database.

```mermaid  
sequenceDiagram  
 participant User  
 participant API  
 participant BusinessLogic  
 participant Database  
  
 User->>API: Register (name, email, password)  
 API->>BusinessLogic: validateUserData()  
 BusinessLogic->>Database: insertNewUser()  
 Database-->>BusinessLogic: userCreatedConfirmation  
 BusinessLogic-->>API: sendSuccessResponse()  
 API-->>User: Registration Successful  
```

## 2. Place Creation

This diagram describes how a user creates a new place listing by interacting with the API, which processes and saves the data to the database.

```mermaid  
sequenceDiagram  
 participant User  
 participant API  
 participant BusinessLogic  
 participant Database  
  
 User->>API: Create Place (title, desc, price, location)  
 API->>BusinessLogic: validatePlaceData()  
 BusinessLogic->>Database: insertPlace()  
 Database-->>BusinessLogic: placeCreatedConfirmation  
 BusinessLogic-->>API: sendSuccessResponse()  
 API-->>User: Place Created Successfully  
```

## 3. Review Submission

This diagram explains how users submit reviews for a place, passing the review data through API validation and storing it in the database.

```mermaid  
sequenceDiagram  
 participant User  
 participant API  
 participant BusinessLogic  
 participant Database  
  
 User->>API: Submit Review (place\_id, rating, comment)  
 API->>BusinessLogic: validateReviewData()  
 BusinessLogic->>Database: insertReview()  
 Database-->>BusinessLogic: reviewCreatedConfirmation  
 BusinessLogic-->>API: sendSuccessResponse()  
 API-->>User: Review Submitted Successfully  
```

## 4. Fetching a List of Places

This diagram outlines how users retrieve a list of places based on criteria, involving filtering and fetching data from the database.

```mermaid  
sequenceDiagram  
 participant User  
 participant API  
 participant BusinessLogic  
 participant Database  
  
 User->>API: Get Places (filters)  
 API->>BusinessLogic: getFilteredPlaces()  
 BusinessLogic->>Database: queryPlaces(filters)  
 Database-->>BusinessLogic: returnPlaceList  
 BusinessLogic-->>API: sendPlaceList()  
 API-->>User: Display Places  
```