HBnB Evolution Technical Documentation

# Introduction

This document serves as a detailed blueprint for the HBnB project, guiding the implementation phases and providing a clear reference for the system’s architecture and design. It includes high-level and detailed diagrams along with explanatory notes to clarify design decisions, describe interactions, and outline the overall architecture of the application.

# High-Level Architecture

A close-up of a sign

Description automatically generated

Notes:

* **Purpose**: This diagram provides an overview of the system’s layered architecture.
* **Key Components** :
  + **Presentation Layer**: Interfaces for assorted services.
  + **Business Logic Layer**: Contains model classes and business logic.
  + **Persistence Layer**: Manages database access and repositories.
* **Design Decisions**: The facade pattern is used to simplify interactions between layers.
* **Overall Architecture**: This layered approach ensures separation of concerns and modularity.

# Business Logic Layer

A close-up of a paper

Description automatically generated

Notes:

* **Purpose**: This diagram details the classes in the business logic layer.
* **Key Components** :
  + **User**: Represents users with attributes and methods for registration and profile management.
  + **Place**: Represents places with attributes and methods for creation and management.
  + **Review**: Represents reviews with attributes and methods for submission and management.
  + **Amenity**: Represents amenities with attributes and methods for management.
* **Design Decisions**: Relationships between classes are defined to represent ownership and inclusion.
* **Overall Architecture**: This diagram shows how entities interact within the business logic layer.

# API Interaction Flow

## Sequence Diagram User Registration

A diagram of a business process

Description automatically generated

Notes:

* **Purpose**: Illustrates the flow of user registration.
* **Key Components**: User, API, Business Logic, Database.
* **Design Decisions**: Validation and processing are handled in the business logic layer.
* **Overall Architecture**: Shows the interaction and data flow during user registration.

## Sequence Diagram Place Creation

A diagram of a company

Description automatically generated

Notes:

* **Purpose**: Details the process of creating a place.
* **Key Components**: User, API, Business Logic, Database.
* **Design Decisions**: Ensures data validation and processing before saving.
* **Overall Architecture**: Demonstrates the steps involved in place creation.

## Sequence Diagram Review Submission

A diagram of a diagram

Description automatically generated

Notes:

* **Purpose**: Shows the flow of submitting a review.
* **Key Components**: User, API, Business Logic, Database.
* **Design Decisions**: Validation and processing are crucial before saving.
* **Overall Architecture**: Outlines the interaction and data flow during review submission.

## Sequence Diagram Fetching a List of Places

A diagram of a process

Description automatically generated

Notes:

* **Purpose**: Describes the process of retrieving a list of places.
* **Key Components**: User, API, Business Logic, Database.
* **Design Decisions**: Ensures validation and processing before data retrieval.
* **Overall Architecture**: Demonstrates the steps involved in fetching place data.