

# SmartBook: Adaptive Room Recommendation System

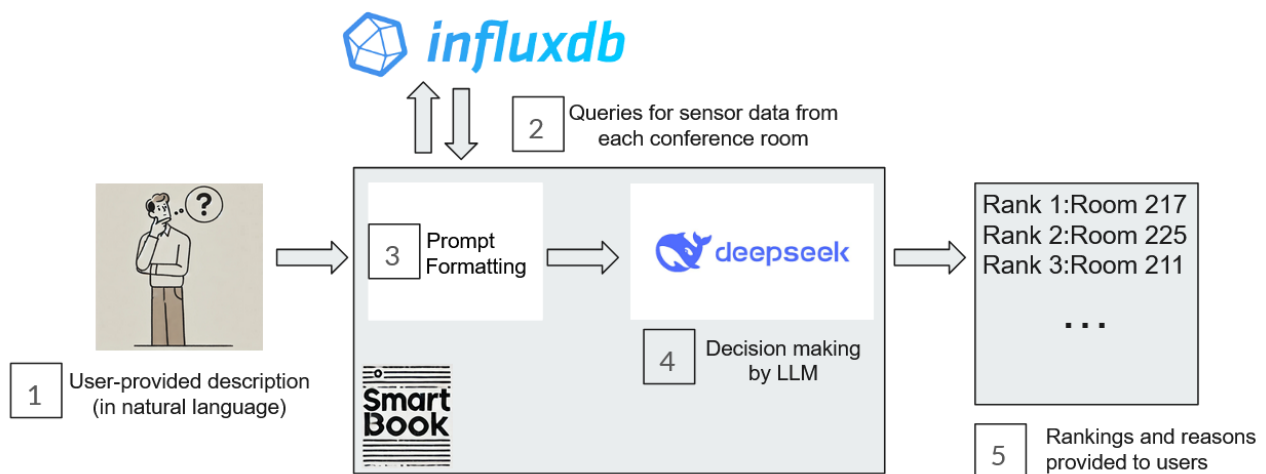
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SmartBook is an intelligent room recommendation system that leverages natural language descriptions and real-time sensor data to provide users with ranked conference room suggestions.

## Overview

The SmartBook system integrates the following key components:

1. **User Input:** Users describe their requirements in natural language.
2. **Sensor Data:** Retrieves real-time data from conference room sensors via InfluxDB.
3. **Prompt Formatting:** Formats user inputs and sensor data for processing.
4. **LLM Decision Making:** Uses the DeepSeek LLM to rank and recommend conference rooms.
5. **Ranked Results:** Outputs ranked conference room suggestions with reasons.



## Features

- **Natural Language Processing:** Understands user-provided descriptions for room preferences.
- **Real-Time Insights:** Queries sensor data to evaluate room conditions dynamically.
- **AI-Powered Decision Making:** Leverages advanced LLM for ranking decisions.
- **Transparent Recommendations:** Provides reasons for the ranking of each room.

## Installation and Setup

### Prerequisites

Ensure you have the following installed:

- Python 3.9+
- Redis server
- Celery
- InfluxDB

## Backend Server Instructions

1. Start the Redis server:

```
sudo service redis-server start
```

2. Run the Celery worker:

```
celery -A test_1.tasks worker --loglevel INFO
```

3. Start the backend server:

```
python -m test_1.app
```

4. Run the test suite:

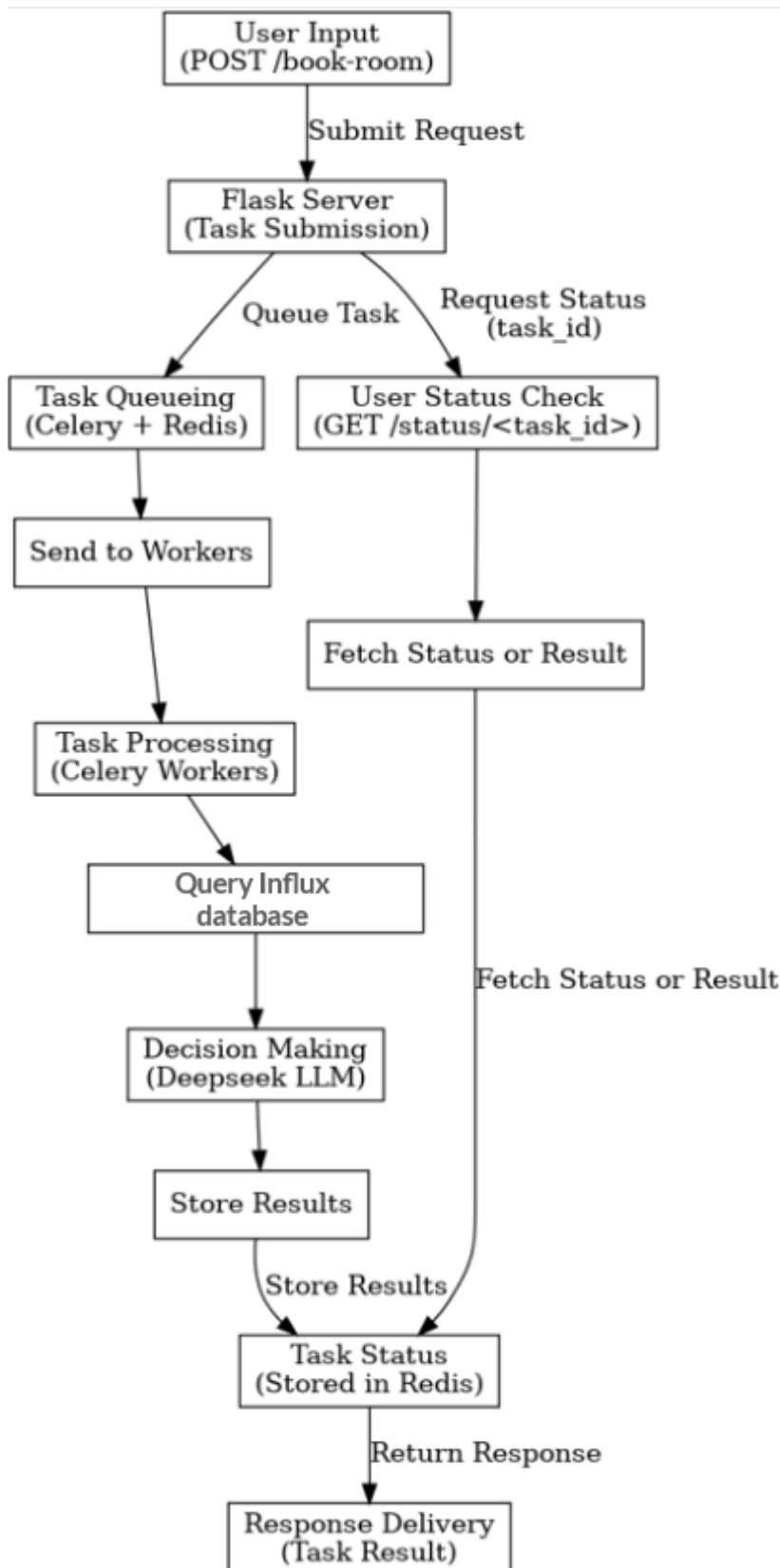
```
pytest -s test_1/pytest.py
```

## Jupyter Notebook Demo

For a step-by-step demonstration, explore the Jupyter Notebook located in the [step-by-step-nb](#) folder.

```
cd step-by-step-nb  
jupyter notebook
```

## Backend Architecture



## Contribution

Contributions are welcome! Please fork the repository and submit a pull request.

## License

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