Cellula task 2

CELLULA_HOTEL-INDIVIDUAL

Built with the tools and technologies:

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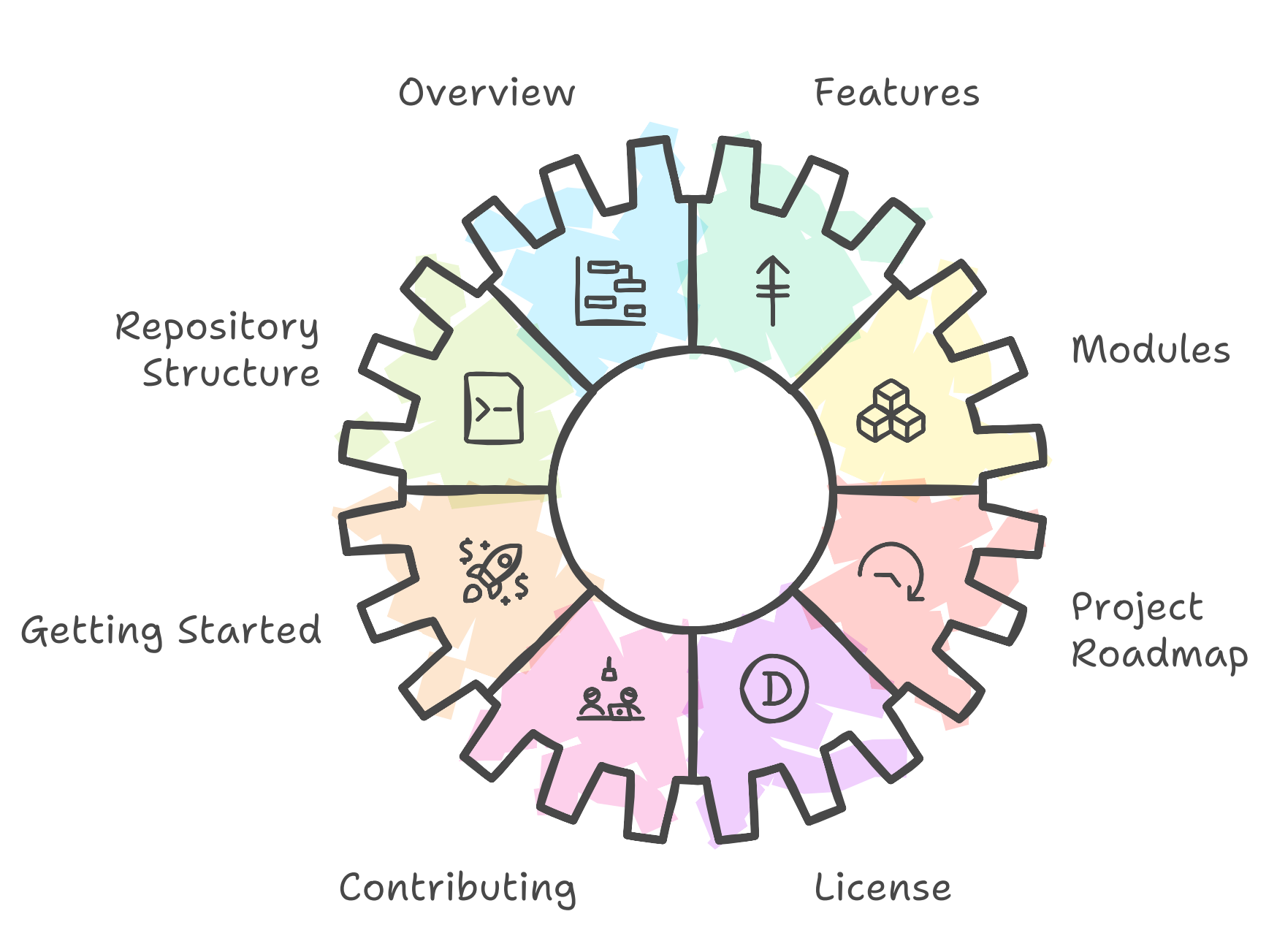
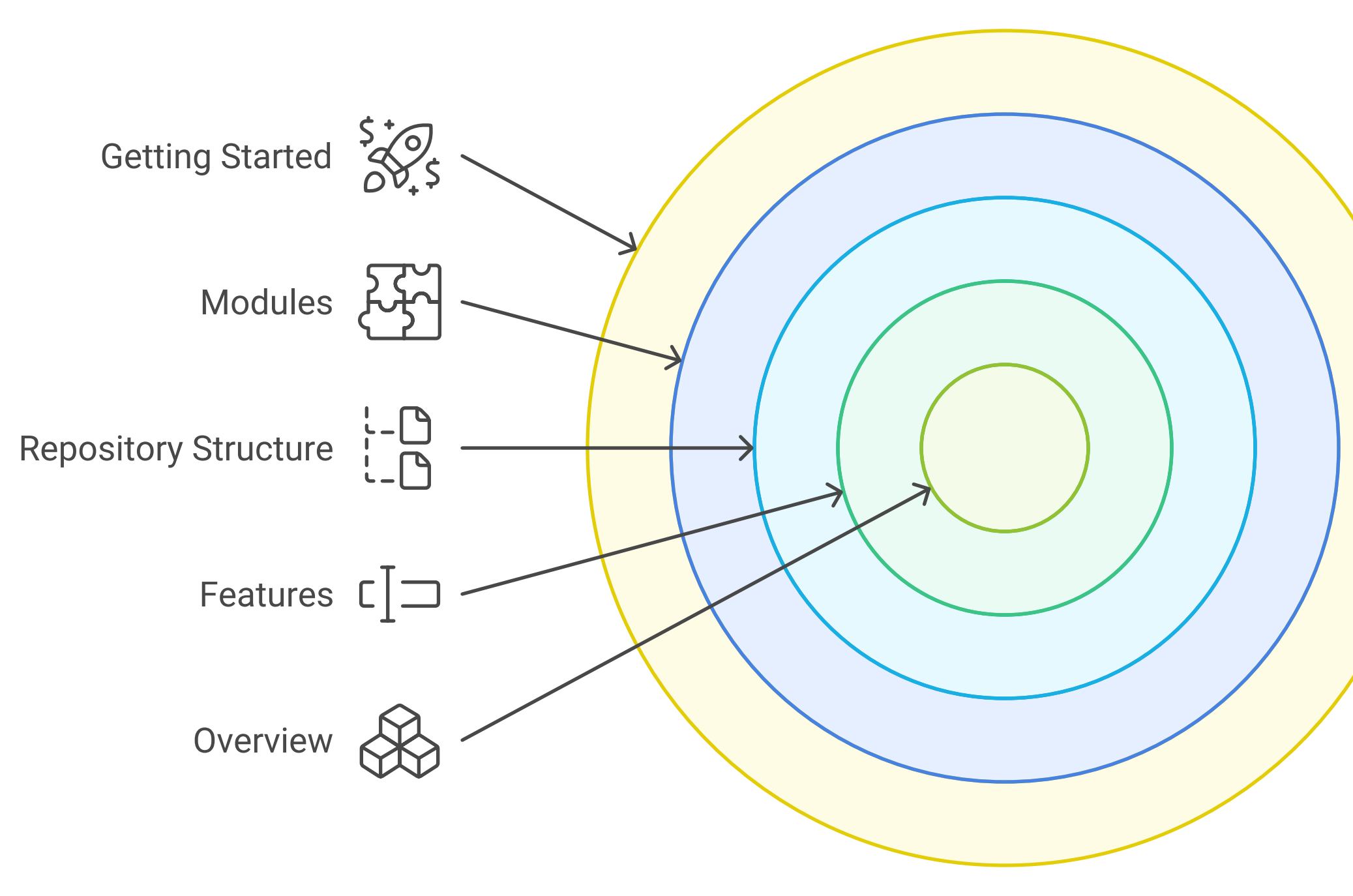


Cellula Hotel Project Structure



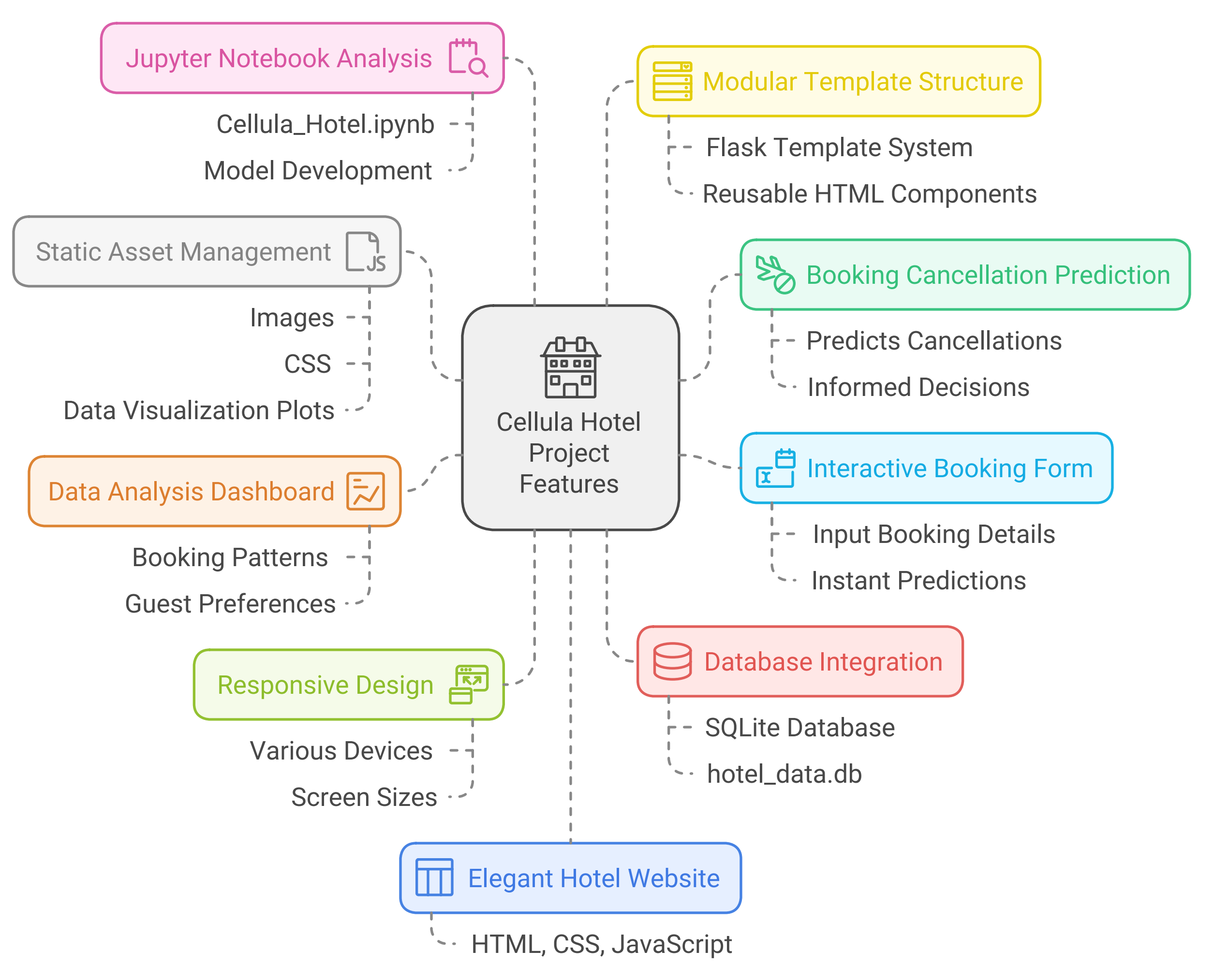
Cellula Hotel Project

Overview

The Cellula Hotel Project is a comprehensive web application designed to showcase the luxurious Cellula Hotel while providing valuable insights and services to potential guests. This project combines a beautiful, informative website with a machine learning-powered booking cancellation prediction system, offering a unique blend of hospitality and data-driven decision-making.

Features

1. **Elegant Hotel Website**: A visually appealing website that highlights the hotel's amenities, rooms, and services, created using HTML, CSS, and possibly JavaScript for interactivity.
2. **Booking Cancellation Prediction**: An advanced machine learning model that predicts the likelihood of a booking cancellation based on various factors, helping both guests and management make informed decisions.
3. **Interactive Booking Form**: A user-friendly form where guests can input their booking details and receive instant predictions about potential cancellations.
4. **Data Analysis Dashboard**: A comprehensive analysis of hotel data, visualized through multiple plots and graphs, providing insights into booking patterns, guest preferences, and more.
5. **Flask Web Application**: A robust backend powered by Flask, integrating the website, prediction model, and data analysis components seamlessly.
6. **Responsive Design**: The website is designed to be accessible and visually appealing across various devices and screen sizes.
7. **Database Integration**: Utilizes SQLite database (hotel_data.db) for efficient data storage and retrieval.
8. **Jupyter Notebook Analysis**: Includes a detailed Jupyter notebook (Cellula_Hotel.ipynb) showcasing the data analysis process and model development.
9. **Static Asset Management**: A well-organized static folder containing images, CSS, and data visualization plots for a rich user experience.
10. **Modular Template Structure**: Utilizes Flask's template system for maintainable and reusable HTML components.

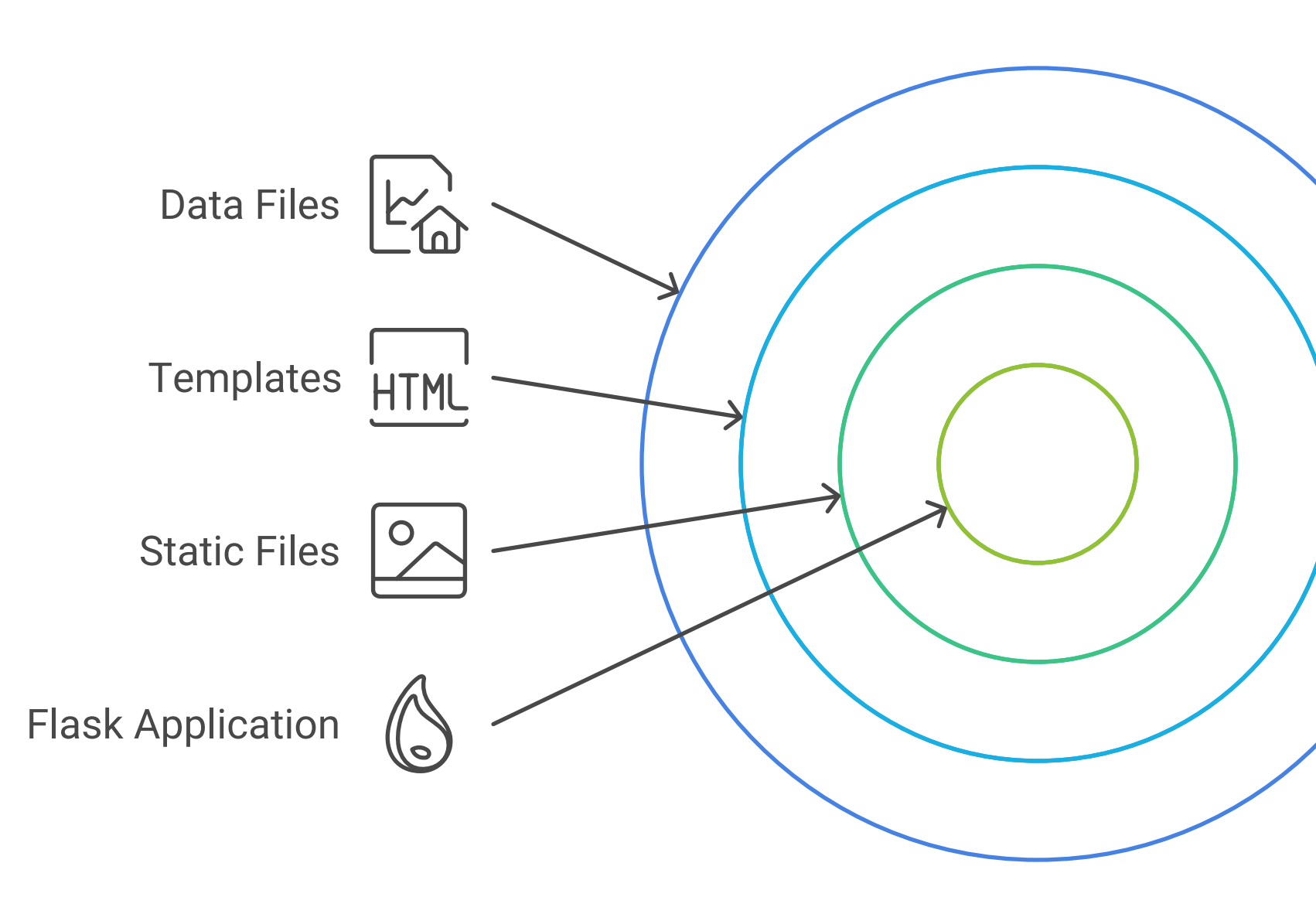


This project demonstrates a holistic approach to modern hotel management, combining traditional web presence with data-driven insights and predictive capabilities.

Repository Structure

```
└── Cellula_Hotel-Individual/
    └── SecondTask_Muhammed_indv
        ├── Callula_web
        │   ├── flask-hotel-app.py
        │   ├── static
        │   │   ├── Untitled design.png
        │   │   ├── bedroom-1285156_1280.jpg
        │   │   ├── greece-844269.jpg
        │   │   ├── inner-space-1026451_1280.jpg
        │   │   ├── living-room-4809587_1280.jpg
        │   │   ├── pexels-adriancuj-2404127.jpg
        │   │   ├── pexels-axp-photography-500641970-16386721.jpg
        │   │   ├── pexels-kamenczak-775219.jpg
        │   │   ├── pexels-nikoosan-297983.jpg
        │   │   ├── pexels-wolfgang-weiser-467045605-22897318.jpg
        │   │   ├── platter-2009590_1280.jpg
        │   │   ├── plot1.png
        │   │   ├── plot2.png
        │   │   ├── plot3.png
        │   │   ├── plot4.png
        │   │   ├── plot5.png
        │   │   ├── plot6.png
        │   │   ├── plot7.png
        │   │   ├── plot8.png
        │   │   ├── styles.css
        │   │   └── window-3178666_1280.jpg
        │   ├── templates
        │   │   ├── cellula-hotel-analysis.html
        │   │   ├── hotel-website-template.html
        │   │   └── hotelform.html
```

Cellula Hotel Project Structure



Modules

SecondTask_Muhammed_indv
FileSummary
Cellula_Hotel.ipynb▯ **REPLACE-ME**
SecondTask_Muhammed_indv.Callula_web
FileSummary
flask-hotel-app.py▯ **REPLACE-ME**
SecondTask_Muhammed_indv.Callula_web.templates
FileSummary
hotel-website-template.html▯ **REPLACE-ME**
cellula-hotel-analysis.html▯ **REPLACE-ME**
hotelform.html▯ **REPLACE-ME**

Getting Started

Prerequisites

HTML: **version x.y.z**

Installation

Build the project from source:

1. Clone the Cellula_Hotel-Individual repository:

```
▯ git clone https://github.com/mohamed682004/Cellula_Hotel-Individual
```

2. Navigate to the project directory:

```
▯ cd Cellula_Hotel-Individual
```

3. Install the required dependencies:

```
▯ ▯ INSERT-INSTALL-COMMANDS
```

Usage

To run the Cellula Hotel Project, follow these steps:

1. Clone the repository:

```
git clone https://github.com/your-username/Cellula_Hotel-Individual.git
cd Cellula_Hotel-Individual/SecondTask_Muhammed_indv/Callula_web
```

2. Set up a virtual environment (optional but recommended):

```
python -m venv venv
source venv/bin/activate  # On Windows use `venv\Scripts\activate`
```

3. Install the required dependencies:

```
pip install -r requirements.txt
```

4. Run the Flask application:

```
python flask-hotel-app.py
```

5. Open a web browser and navigate to **http://localhost:5000** to view the application.

Tests

To run the test suite for the Cellula Hotel Project, follow these steps:

1. Ensure you're in the project directory and your virtual environment is activated (if you're using one).
2. Run the tests using pytest:

```
pytest
```

3. For a more detailed output, you can use:

```
pytest -v
```

4. To run tests and generate a coverage report:

```
pytest --cov=. tests/
```

Note: Make sure you have pytest and pytest-cov installed. If not, you can install them using:

```
pip install pytest pytest-cov
```

Project Roadmap

- [X] **Task 1**: ~~Implement feature one.~~
- [ ] **Task 2**: Implement feature two.
- [ ] **Task 3**: Implement feature three.

Contributing

Contributions are welcome! Here are several ways you can contribute:

- **Report Issues**: Submit bugs found or log feature requests for the **Cellula_Hotel-Individual** project.
- **Submit Pull Requests**: Review open PRs, and submit your own PRs.
- **Join the Discussions**: Share your insights, provide feedback, or ask questions.

Contributing Guidelines

1. **Fork the Repository**: Start by forking the project repository to your github account.
2. **Clone Locally**: Clone the forked repository to your local machine using a git client.

```
git clone https://github.com/mohamed682004/Cellula_Hotel-Individual
```

3. **Create a New Branch**: Always work on a new branch, giving it a descriptive name.

```
git checkout -b new-feature-x
```

4. **Make Your Changes**: Develop and test your changes locally.
5. **Commit Your Changes**: Commit with a clear message describing your updates.

```
git commit -m 'Implemented new feature x.'
```

6. **Push to github**: Push the changes to your forked repository.

```
git push origin new-feature-x
```

7. **Submit a Pull Request**: Create a PR against the original project repository. Clearly describe the changes and their motivations.
8. **Review**: Once your PR is reviewed and approved, it will be merged into the main branch. Congratulations on your contribution!

Contributor Graph

License

This project is protected under the SELECT-A-LICENSE License. For more details, refer to the LICENSE file.

Acknowledgments

- List any resources, contributors, inspiration, etc. here.